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Senate Hearings

Before the Committee on Appropriations

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Department of Transportation and Related Agencies Appropriations

H.R. 15405

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Part 2 (Pages 1047–1623)

NATIONAL RAILROAD PASSENGER CORPORATION
NONDEPARTMENTAL WITNESSES
DEPARTMENT OF TRANSPORTATION

AUTHENTICATED
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INFORMATION
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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1975

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE

NINETY-THIRD CONGRESS

SECOND SESSION

ON

H.R. 15405

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING JUNE 30, 1975, AND FOR OTHER PURPOSES

Printed for the use of the Committee on Appropriations

Part 2 (Pages 1047–1623)

NATIONAL RAILROAD PASSENGER CORPORATION
NONDEPARTMENTAL WITNESSES
DEPARTMENT OF TRANSPORTATION



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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1975

MONDAY, JULY 22, 1974

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 11:40 a.m., in room S–128, the Capitol, Hon. Robert C. Byrd (chairman) presiding.

Present: Senators Byrd, Mansfield, Case, and Stevens.

NATIONAL RAILROAD PASSENGER CORPORATION

STATEMENT OF JOHN W. BARNUM, UNDER SECRETARY OF TRANSPORTATION

ACCOMPANIED BY:

HOWARD A. COHEN, SPECIAL ASSISTANT TO THE UNDER SECRETARY

RICHARD W. SLOCUM, DEPUTY DIRECTOR OF BUDGET

VIEW ON AMTRAK BUDGET

Senator BYRD. The subcommittee will resume its considerations of the bill making the appropriation for fiscal year 1975 for the Department of Transportation.

We will now take the testimony on Amtrak's budget request for $143 million. The House committee recommended $125 million but that appropriation was deleted on the House floor by a point of order since there has been no authorization for fiscal year 1975 as yet.

I understand that both the House and Senate versions of that authorization contain a limit of $200 million for 1975.

The Under Secretary of Transportation, Mr. John W. Barnum, will be first as a witness to give us the Department's view on Amtrak's budget. He will be followed by Amtrak's president, Mr. Lewis.

Mr. Barnum, please proceed.

Mr. BARNUM. Thank you, Mr. Chairman.

I have with me on my left Howard A. Cohen who is my special assistant for rail passenger matters.

GENERAL STATEMENT

I appreciate the opportunity to appear before your subcommittee today to discuss the Department of Transportation's appropriation request to provide continued financial assistance for the National

Railroad Passenger Corporation, Amtrak, as set forth in the President's fiscal year 1975 budget.

Since its inauguration in May 1971, Amtrak has been working to restore railroad service as a viable choice for the intercity traveler. As this committee knows, there has been a substantial investment of public funds in Amtrak, and I believe we can fairly say that we are starting to see some results of that investment.

ENERGY EFFICIENCY

Amtrak has become recognized as a constructive contribution to the mobility of the people of America. This was highlighted when the energy crisis focused national attention on the need for additional energy-efficient transportation. The current and foreseeable need to use energy more efficiently requires us to reexamine the possibilities of improved intercity public transportation. Today we estimate that 87 percent of intercity passenger traffic moves by private automobiles, 10 percent by air, 2 percent by bus, and 1 percent by rail. The percentage for all rail is increasing, and in many markets an increased and revitalized role for Amtrak can, we believe, yield substantial results.

The inherent efficiency of moving large numbers of people quickly and comfortably by rail with low per capita energy consumption gives Amtrak an opportunity to divert an increased share of the total travel market from the private automobile. In certain high density corridors, that share can become substantial. A modern train operating at capacity is a very efficient mode of transport, from many points of view—land use and environment as well as energy. A half empty train, however, is not as energy efficient as a bus. Therefore, along lightly traveled segments of the Amtrak system, the bus is likely to be the more fuel-efficient mode, because of its smaller size and more flexible operating characteristics.

OPERATING DEFICIT

Under section 601 of the National Railroad Passenger Act, as amended, the Federal Government is obligated to finance the deficit between Amtrak's operating costs and revenues. Unfortunately, we cannot at this time predict with any precision the actual size of the fiscal year 1975 deficit. Our best estimate of Amtrak's operating loss, at the time the President's budget was prepared, was that it will be at least $143 million, and that is the figure we have formally requested at this time.

This year, Amtrak will not have any alternative source from which to finance its operating deficit other than the Federal grant. The final railroad capital payments were made in fiscal year 1974 and the Corporation is prohibited by law from using guaranteed loans secured under the authority of section 602 to cover operating losses.

POTENTIAL FOR SUPPLEMENTAL REQUEST

There has been substantial discussion with Amtrak officials about the projected deficit, and they are of the opinion that it could go as

high as $200 million, and that is the authorization figure which has been reported by the House Committee on Interstate and Foreign Commerce. We do not have any independent basis upon which to question that figure. When and if it becomes apparent that funds over and above the $143 million we are requesting today are needed, a supplemental appropriation will be needed.

Forcing Amtrak to accept reductions in the fiscal year 1975 appropriation at this time could force Amtrak to curtail or eliminate service over certain routes. At this time, it is simply not possible to reduce the deficit projected for Amtrak without reducing service.

The Department believes that Federal funding is warranted to continue the current levels of service, to evaluate the effects of the service changes that are now being implemented, and to take advantage of the investment already made in new equipment and facilities.

RESTORATION OF APPROPRIATION LANGUAGE

The House deleted appropriation language from Amtrak under a point of order, as the chairman observed, that there is no authorization for the $125 million recommended by the House committee, a reduction of $18 million below the budget estimate of $143 million. We are requesting restoration of the appropriation language at an appropriation level of $143 million. The language we are proposing would enable Amtrak to use immediately $15.2 million of the appropriation under the authorization previously enacted by the Congress, and provides that the remaining $127.8 million would be available upon enactment of the additional authorizing legislation pending before the Congress.

In summary, Amtrak's progress to date indicates that it is having an impact in reversing the trend of declining ridership that began after World War II. Amtrak has taken steps to improve intercity rail passenger service, and further improvements now being implemented will, we hope, build on the progress that has already been made.

The concludes my testimony, Mr. Chairman. I believe Mr. Lewis can report fully on Amtrak's operation to date.

STATEMENT OF ROGER LEWIS, PRESIDENT, NATIONAL RAILROAD PASSENGER CORPORATION

QUESTIONS SUBMITTED BY SENATORS MATHIAS, CASE, MANSFIELD, AND METCALF

Senator BYRD. Mr. Lewis, would you have a chair at the table, please?

Mr. Lewis, I have questions that have been prepared by Senator Case and by Senator Mathias. I understand we are to present these to you for the record, if you will prepare answers for them.

Mr. LEWIS. We would be happy to do so.

Senator BYRD. You will be provided with the questions.

Along that line, Senators Mansfield and Metcalf have addressed a letter to me under date of July 11, 1974, in which they have enclosed a list of questions. You will be presented with those questions.

[The questions and answers follow:]

Questions from Senator Case:

Q. Since the relative lack of rail car manufacturers may be part of the reason for the slowness in replacing or adding to Amtrak equipment, what can you do to stimulate the enlargement of this critical industry?

What can we learn from other countries in regard to the development of a rail car manufacturing industry?

A. There is no doubt that the lack of American rail passenger car building capacity is a major factor in Amtrak being able to obtain new equipment. Not only are deliveries slow, but prices are high for this reason. The greatest stimulation which could be given to stabilize and increase capacity would be assurance of a steady volume. At present, builders are reluctant to employ engineering staffs who may be laid off periodically, and qualified people hesitate to work under such conditions. Much of the American car building facilities and machinery are obsolete and outmoded, but companies are not willing to risk capital in a boom-or-bust market.

The ability of foreign nationalized railroads to have adequate car building capacity is based to a large extent on their ability to program and divide their orders in such a way so as to maintain this steady volume and still preserve competition. Undoubtedly U.S. anti-trust laws would prevent adoption of some of the practices which are followed in these countries.

Q. I understand you are moving away from the use of self-propelled Metroliner cars and toward trains pulled by locomotives. There is concern this will slow down the New York-to-Washington Metroliner service because you will lose some acceleration capability through this method. Please comment.

If you do go to locomotive-hauled Metroliners, will you increase the number of cars on each Metroliner train? If so, what is the maximum number of cars you may have in a Metroliner train without exceeding the capability of a station platform to handle them all at one time?

A. The 257 Metro shell cars now on order will be operated to supplement Metroliner service between Washington and Boston, and to add to service between New York and Chicago. Self-propelled electric cars were not selected because they could be operated over only a portion of the Northeast Corridor -- namely, between Washington and New Haven. Locomotive-hauled cars, on the other hand, are feasible over all of the routes listed above.

The decision not to order more self-propelled cars for the Northeast Corridor at this time was also based on economic considerations of capital and operating costs. For approximately equal seat capacity, a train of self-propelled electric cars costs 58 percent more than an electric locomotive-hauled train. The operating cost per seat-mile of the self-propelled train is 92 percent more than for locomotive-hauled trains. In addition, studies show that locomotive-hauled trains of four Metro shell cars can be operated on the same schedule as the Metroliners, with no sacrifice in top speed or acceleration.

Various alternatives with respect to the existing Metroliner fleet are presently under study. These include (a) rebuilding and maintaining them in kind, (b) upgrading them through modification program, (c) converting them to locomotive-hauled cars, (d) replacing them with improved new trains.

Finally, with regard to platform lengths, the low-level platforms throughout the Northeast Corridor are fully adequate for any length train contemplated in the near future. High-level platforms between Washington and New Haven are all adequate for at least six and many are far longer. If it is found necessary to extend some high-level platforms, this will be done.

Q. I note press reports indicating that the Richmond, Fredericksburg & Potomac Railroad no longer is willing to operate Amtrak's trains between Union Station and the north bank of the Potomac River apparently because of a dispute over billing. What brought this about? Has the problem been resolved?

A. The RF&P contends that it is not obligated to operate Amtrak trains across the Potomac River and into Washington Union Station. This contention is based on a dispute over which costs charged to the RF&P by the Washingto Terminal Company can be passed on to Amtrak as the cost of operating passenger trains.

The issue came to a head on June 10, 1974, when th RF&P informed Amtrak that after 30 days it would no longer operate the trains north of R.O. Tower, just south of the Potomac.

Amtrak has now obtained a court order insuring the continuation of service while litigation continues toward a final determination of the railroad's obligation to operate Amtrak trains.

Q. What practice do you follow in regard to maintenance of the Metroliner cars?

A. The Metroliner fleet, comprised of 61 cars, is maintaine at the Wilmington Delaware Heavy Repair Shops and supple-

mented by inspections and running repairs at both Washington, D.C. and Sunnyside Yards, New York City. The Washington, D.C., operation is performed at facilities of the Washington Terminal Company and other locations by Penn Central. The schedule for maintenance is the responsibility of the Penn Central and they are required also to comply with all rules, regulations and laws of the Federal Railroad Administration. Maintenance schedules require:

1. Trip turnaround inspection and running repair comprising inspection of trucks, running gear, couplers, testing of air brakes, automatic train control and current collection system.
2. Daily inspection performed each 24-hour period comprising thorough undercar inspection of traction motors, gear units, traction motor couplings, wheels including complete roll over of wheels for complete tread, rim and flange inspection and complete current collection inspection of collector shoe, pantograph frame and insulators.
3. Monthly inpections are performed on thirty-day cycles at rate of three cars each working day at the heavy repair shop.
4. The performance of inspections and maintenance are governed by reporting as shown in Exhibits A, B, C, D, E and F, below.

In addition to the above all wheels are given a magnetic particle inspection at the time of the monthly inspection, and results of the inspection are filed with the Federal Railroad Administration.

Q. I believe you depend on the Penn Central's Wilmington, Del., shops for Metroliner maintenance. How well staffed are these shops, particularly in light of the PC's financial problems?

A. The total Metroliner maintenance force employed by the Penn Central and The Washington Terminal Company are as follows:

1.	Wilmington Shops -	140 positions
	New York Terminals -	48 positions
2.	Washington Terminal Company - Washington Union Station	111 positions
	Total force assignment -	299 positions

Additionally, the Metroliner maintenance program is supported by specialist technicians and engineers of the General Electric Company, Westinghouse Electric Company and J. W. Marchetti, Inc.

Together these maintenance forces are adequate. However, should additional help be required, Amtrak is in a position to request that more positions be created since Amtrak is responsible for equipment maintenance costs.

Q. Provide for the record a comprehensive table showing your maintenance record for the Metroliners over the past year. Break this down into maintenance for routine purposes as well as for specified components, such as braking and electronic systems.

A. Complete executed copies of all maintenance performance records are maintained at the Wilmington Shops. These records are comprehensive for all systems of the Metroliner car and are not separated by specific components.

(Clerk's note: Copies of the forms were received and are being held in the subcommittee files)

Q. I believe you recently placed orders for new equipment, both locomotive and passenger cars. Please describe this program. How will the new equipment be allocated geographically?

Have you been looking into bi-level cars to increase capacity? What are your findings, if any?

A. The complete list of new equipment ordered by Amtrak together with planned deliver dates follows:

Order	Manufacturer	Order Date	Delivery Date
Locomotives:			
40 diesel	General Motors (EMD)	11/ 2/72	delivered
15 electric	General Electric	3/26/73	9/1/74
110 diesel	General Motors (EMD)	10/12/73	9/1/74
11 electric	General Electric	10/12/73	1/1/75
25 diesel	General Electric	6/24/74	7/1/75
Locomotive-hauled cars:			
57 coaches	Budd Company	10/12/73	9/1/75
200 coaches	Budd Company	6/ 6/74	6/1/76
Trainsets:			
6 Turboliners*	ANF-Frangeco	6/ 6/74	2/1/75
7 Turboliners	Rohr Corporation	7/19/74	7/1/76

*includes two currently being leased and operated between St. Louis and Chicago

The new diesel locomotives have been allocated principally to long-haul routes throughout the country. At 3000 horsepower per unit, they average nearly twice the power of Amtrak's older locomotives and therefore can be used most efficiently on longer trains over longer routes. The electric locomotives will be used exclusively in the Northeast since electrification does not exist on Amtrak routes in any other part of the country.

The 257 locomotive-hauled single level cars will be used on a wide variety of short- and long-haul routes. While final route assignments have not yet been made, many of these cars will be used on trains into and out of New York, including those to Florida and the Midwest, since clearances permit only the operation of single-level cars.

The six Turboliners being acquired from France are programmed for service out of Chicago where a central maintenance base has been built to service trains to Milwaukee, Detroit, St. Louis, or other cities. Final route assignments have not yet been made.

The seven Turboliners being purchased from the Rohr Corporation will be operated between Boston and New York, joining three similar trains currently operating on that route.

Finally, Amtrak's Equipment Planning Department is preparing final specifications for a fleet of a completely new design of bi-level cars, which will be used on long-distance routes not hampered by tunnel restrictions. Competitive bids for construction of the new cars will be requested within the next few weeks and, providing that Congress makes funding available, contracts will be awarded in the fall. Deliveries would begin in the latter half of 1976.

Q. Bring us up to date on the Improved Passenger Train project from Amtrak's standpoint.

There is $5.6 million presently allocated to this project. If Congress transferred this amount from DOT to Amtrak, could you -- would you -- undertake the project, including development of prototypes, if necessary?

A. Amtrak continues to work closely with the Federal Railroad Administration in developing data and specifications on the market potential of and performance characteristics desirable in the next generation of corridor passenger equipment. Much of the technology for this advanced equipment exists. The principal remaining component

to be developed is the suspension system which would permit sustained high-speed operations over existing corridor roadbeds. This plus other components which are further along in the development or even production stage, can best be evolved, simulated and tested by FRA which has the manpower and facilities for such work. It is important to note that components can be tested by themselves or as part of existing rail equipment modified to include new technology. A prototype is not essential. In addition, developments in rail technology throughout the world are occurring so rapidly that a prototype train could well be outdated by the time it is completed.

Amtrak and FRA are both proceeding on the assumption that the best advanced train will be developed by borrowing heavily from the best existing and developing technologies throughout the world. We believe that FRA has no intention of limiting any part of the IPT program except actual construction of a prototype. We believe that with detailed specifications which will evolve from the existing FRA program, Amtrak will be able to go directly to production, avoiding the time-consuming and redundant prototype stage.

Q. You have a projected deficit of $143 million for FY 1975. How realistic is this figure, particularly in view of rising inflation?

I understand that $20 million of the $143 million relates to ICC-imposed service standards.

Can you break down the $20 million so that we may see the various components and how they boost the Amtrak deficit?

A. The Amtrak request for $143 million, which was included in the President's budget for FY 1975 was formulated more than

six months ago, and several events in the meantime have tended to raise costs without equivalent increases in revenues. Inflation, skyrocketing fuel costs, costs for new routes designated by Congress, requested by states under Section 403(b) or designated by the Secretary of Transportation under Section 403(d) and additional costs for services mandated by the Interstate Commerce Commission all are tending to increase Amtrak's overall costs without offsetting increases in revenue. Therefore, it is anticipated that the corporation's deficit will be greater than the $143 million assumed in the President's budget. However, it is difficult at this early point in the fiscal year to estimate with acceptable precision the exact amount of the FY 75 deficit.

Of the $143 million being requested at this time, approximately $20 million relates to the ICC service standards mentioned above. This amount breaks down into two basic categories:

Expansion of Reservation System	$12.8 million
Baggage service, 24-hour food service and expanded station service and facilities	$ 7.2 million

Q. I am advised that your operating contracts with the railroads provide for no ceiling on costs and no requirement for quality of performance standards. Don't these factors serve to heighten your deficit and, if so, what are you doing to overcome them?

A. Amtrak's standard contracts with the railroads, negotiated and signed prior to Amtrak's beginning operations on May 1, 1971, contain no ceilings on costs and only the most general requirements for the quality of service. These contracts have tended to severely inhibit efforts to control costs and improve the overall level of service provided by the contract railroads.

For the past year, Amtrak has been renegotiating the basic cost reimbursement provisions of these contracts. As of July 22, agreement had been reached with the Penn Central, the Burlington Northern and the Milwaukee Road, with the Penn Central contract being subject to further approval by the bankruptcy court in Philadelphia.

In these contracts, as well as in negotiations which are proceeding with other railroads, ceilings on costs and specific performance quality standards are of paramount importance. The three agreements reached so far contain both specific cost ceilings and service standards. In addition, they contain a long series of incentives for improved schedules, on-time performance and car and locomotive maintenance. It is possible that these contracts will actually end up costing Amtrak more than the existing contracts. However, far more important is the fact that improved service, which should result will increase ridership and revenue and, in time, permit a signifant reduction in Amtrak's annual deficit.

Q. I understand that you projected $54 million worth of roadbed improvements in fiscal year 1974 and $56 million in fiscal year 1975. Would you describe how these funds have been spent for fiscal 1974 and how you plan to spend the additional amount in the new fiscal year.

What has been the effect of these improvements in terms of improved train speeds, better schedules and increased passenger comfort?

A. The capital improvement program submitted to the Congress in April 1974 included $100 million for right-of-way improvements with $72.6 million programmed for FY 1975 and $27.4 million programmed for FY 1976. The Amtrak Board of Directors at the July 1974 meeting approved $21.6 million of this program for use in the Northeast corridor between Boston and New York. The expenditure of these funds will provide for more passenger

comfort and a 33 minute improvement in scheduled time between Boston and New York. Additional right-of-way improvement projects are under development.

Q. I believe you are projecting a reduced fiscal 1977 deficit of approximately $50 million. Is this a realistic figure? Does such a figure include interest payments?

A. The projection of a fiscal year deficit of $50 million for fiscal year 1977 was prior to giving consideration of added costs due to the higher standards of service mandated by ICC under ex parte 277. This would add at least $20 million to the deficit. Further, the estimate was made in terms of constant 1974 prices with no projection for the cost of inflation. A 7 percent compounded inflation rate would add over $50 million of cost in fiscal year 1977. Further, it can be expected that new routes will be mandated in accordance with existing law each year at a yearly cost of approximately $50 million. With the addition of these factors it can be expected that a realistic estimate of the deficit in fiscal year 1977 would approach $150 million, which would include interest.

Q. Before your budget request was deleted as the result of a point of order raised on the House floor, the House Appropriations Committee had reduced your request by $18 million. What would be the effect on your system if you were forced to sustain such a cut?

In view of your statement that an appropriation of $200 million for FY '75 would be "realistic", do you ask that we appropriate that sum in this budget?

A. Amtrak is pursuing every possible avenue of cost control. Most costs, however, are directly related to the level and number of services we are or will be obliged by law to provide. Therefore a reduction in funding to the extent contemplated by the House Committee will require Amtrak to consider the reduction in the frequency of service on those routes where this is possible. The impact will unavoidably be concentrated in those

areas with the best revenue and growth potential--areas where we are currently operating more than one daily train. In addition, we will have to look for savings that are possible from the reduction of service on routes with single trains from daily to tri-weekly or weekly frequency. Such service reductions would of course be counterproductive to Amtrak's attempts to reduce deficits by building revenues, and we would try to minimize such disruptions to our markets.

A detailed discussion follows:

The Amtrak deficit, for which funding is required, results from the scope of operations (number of services), and the operating costs thereof, less revenues.

Congress determines the number of routes over which services must be provided:

-- The basis system of Amtrak routes is currently frozen by law.

-- Under section 403(b) of the act, Congress requires Amtrak to meet a share of the deficits of train service initiated by states.

-- Under section 403(d), Congress has mandated the addition of at least one new experimental route each year. Amtrak has projected substantial deficits for each new route proposal that has been studied.

While revenues are up significantly (up 35 percent in the first ten months of FY 1974 compared to the year-earlier period), costs are caught up in the inflationary spiral affecting the whole economy. The problem is compounded by significant unbudgeted costs, actual and projected, including inflation at a greater rate than estimated; statutory requirements to add routes; costs that will result from renegotiated contract pro-

visions with the operating railroads, strict service standards imposed by the ICC and statutory changes in railroad retirement contributions from employers.

Amtrak does not have authority to borrow funds under government guarantee for operating purposes, and Amtrak no longer has any entry payment receipts from participating railroads. Therefore, all operations are dependent upon operating receipts and government grants.

Because Amtrak has no way of suddenly reducing its costs on the scale apparently contemplated by the Committee without reducing service, a $125 million appropriation for FY 1975 at today's level of deficits would require Amtrak to undertake significant curtailment of operations.

While Amtrak has requested an increased authorization of $200 million, the corporation is not requesting that this amount be appropriated at this time. We do, however, request appropriation of the full $143 million with the understanding that a supplemental appropriation request will be submitted during the fiscal year when the costs of additional routes, services and inflation become better known.

Q. Where you not supposed to inaugurate an auto train from the midwest to Florida?

What happened to this project?

A. Amtrak's auto-carrying service, known as Auto-Trak, is moving forward with a proposed start-up date in the late fall. The service will be operated between Indianapolis, Indiana and Poinciana, Florida, near Orlando. Delays in beginning this service have been due principally to the modification and testing of the auto carrying equipment with the aim of improving the ride quality and running speed of the carriers.

Q. As I understand it by law freight trains are supposed to give way where there is a conflict with passenger trains. Despite this I understand there have been hundreds of violations by freight trains. What are you doing about this situation?

Have you referred any cases to the Attorney General?

A. Section 402(e) of the Rail Passenger Service Act of 1970 specifies that Amtrak's intercity passenger trains shall be accorded preference over freight trains in their operations. Prior to enactment of this amending section in 1973, Amtrak had initiated two arbitration proceedings against three of the contracting railroads involving the quality of operation of Amtrak's trains over their rail lines. These proceedings are large and complicated and involve Amtrak's fundamental contractual rights to use the rail lines of our contracting railroads without delays due to bad track, freight train interference, and other causes within the control of the railroads. In addition to vigorously pursuing our contractual remedies in the arbitration forum specified in our contracts for provision of services, Amtrak has been attempting, for almost a year, to renegotiate certain elements of the contracts so as to place greater direct responsibility for on-time performance of Amtrak trains on the railroads. We believe these efforts to enforce and improve our contractual rights, if successful, should significantly reduce the problem of freight train interference.

We feel we are doing everything within our power to improve the performance which the railroads are contractually obligated to provide to Amtrak. We certainly do not condone violations of law by the railroads or anyone else. In this regard, it should be noted that Amtrak has no authority to enforce the statutory priority specified in Section 402(e). Actions for enforcement of this and other provisions of the

1970 Act can only be brought by the Attorney General, acting on his own initiative or upon the request of any member of the public. If the Attorney General decides to bring an action under Section 402(e), Amtrak will, of course, cooperate fully in providing him with any information and assistance he may require.

Q. I note you will pay as much as $18 million for delivery of six French turbotrains to the United States for use in your service. Aren't the turbotrains limited in the number of cars in a train set and doesn't this limit your capacity potential?

A. Amtrak has now purchased six turbine powered trains sets from France (including two already leased and operating between Chicago and St. Louis) and seven similar trainsets from the Amterican licensee, Rohr Industries. The latter trains, to be produced at the Rohr plant in Winder, Georgia, will be modeled after the French trains but will have numerous modifications required to meet Amtrak specifications for operation in the Northeast Corridor. In addition Amtrak owns and operates three turbine powered trains built by the Sikorsky division of the United Aircraft Corporation.

The Sikorsky trains are articulated, meaning that they must be operated as a single unit. Cars cannot be added or removed to meet daily ridership changes.

However, while both the French and Rohr-built trains are being purchased in five-car trainsets, they basically consist of two power cars, one at either end, and three so-called trailer cars in the middle. These cars can be removed or supplemented at will thus increasing significantly the ability of the trains to respond to shifts in passenger demand.

Questions from Senator Mathias

Q. What is the current status of the proposed joint Metro-Metroliner station in New Carrollton, Maryland?

A. A good deal of progress has been made over the last several months in preparing this joint station for the first phase of construction. On July 2, in the letter to Warren Quenstedt of WMATA from Amtrak's Vice President for Operations, Mr. F. S. King, we informed the agency of our complete willingness to work with them on a joint facility. We also noted our willingness to finalize a formal working agreement with WMATA and our intention to request that the $500,000 earmarked for the station in last year's appropriation bill be released by DOT so that work can begin as soon as possible.

On July 23, a capital appropriation request for a total of $1.061 million was approved by the Amtrak Board of Directors to permit Amtrak's participation in the first phase of construction. Specifically, $965,000 of this money will be for the station shell and construction of a tunnal extension under the existing Penn Central tracks. While there are still some details which must be worked out between Amtrak and Penn Central on the specific alignment of the railroad's tracks, we now feel that we are far enough along toward an agreement to proceed with construction.

It is my understanding that WMATA plans to put our specifications and plans for initial construction of the station in the very near future.

Q. Last year, in an effort to expedite progress on this project, we provided a special $500,000 appropriation specifically earmarked for start-up costs associated with the New Carrollton station. Have these funds been spent? If so, how? If not, why not?

A. The $500,000 provided for the New Carrollton station in the FY 1974 appropriation bill have been fully committed to

the first phase of construction expected to begin shortly. These funds, plus $465,000 from the Amtrak capital budget, will be paid to WMATA which, in effect, will act as prime contractor for this initial construction phase

Q. Will you keep this Committee and my office advised on a regular basis as to the progress you are making in this regard, and as to any obstacles you may encounter, since this is a terribly important project, both for the people of Maryland, and for the development of a coordinate, rational, balanced transportation system throughout the National Capital area.

A. The past guidance and assistance of the Committee and Senator Mathias on this project is deeply appreciated and we definitely will keep both fully informed as developments or problems occur.

Questions from Senators Mansfield and Metcalf

Q. You will recall that in its report on the preliminary proposal of Amtrak for a national rail passenger system the Interstate Commerce Commission recommended that tri-weekly service between Salt Lake City and Butte be continued. Senator Mansfield, Senator Metcalf, Senator Church, Senator Moss and others have pressed for several years in behalf of their constituents for restoration of this service. Have you any plans to establish a Butte-Salt Lake City run, either as a demonstration or as a permanent segment of the national system?

A. At the request of Senators Metcalf and Mansfield, Amtrak made a study of this route last summer which showed annual costs for tri-weekly service of $800,000 and revenues of just under $130,000 for a net loss of about $670,000. By adding in revenue from connecting service, the loss would be reduced to about $617,000. This means that less than 25 percent of total costs would be covered by revenue, a proportion which is far below the Amtrak average of 60 percent. It is possible that the energy crisis and the increased cost of gasoline would increase revenue projections somewhat. However, this study did not include higher costs associated with new ICC regulations governing service quality, nor were the huge increases in fuel

costs factored into the study. It is estimated that any increased revenue would be largely offset by increased costs - a fact which has tended to be true system-wide - leaving this service with a large deficit per passenger carried. Because of these high anticipated deficits, it would not be prudent for Amtrak to consider inaugurating this service on its own for the present. At the same time, despite the fact that a relatively small equipment pool would be required for this route, our equipment situation is such that in the immediate future new routes beyond those already programmed are operationally unfeasible.

Q. Has Amtrak performed any studies of the current passenger potential as it may have been affected by the energy shortage?

A. Amtrak data show there has been a considerable effect on ridership since the beginning of gasoline shortages last summer. Percentage ridership increases for the most recent twelve months for which final statistics are available are:

July	1973	+30%
August	1973	+27%
September	1973	+25%
October	1973	+30%
November	1973	+42%
December	1973	+37%
January	1974	+28%
February	1974	+53%
March	1974	+45%
April	1974	+28%
May	1974	+25%
June	1974	+16%

Unfortunately, it is difficult to determine the precise reasons for these increases. Clearly, part of the overall ridership gain is a normal continuation of trends established in the previous two years of Amtrak's history. Just as surely, some of the increase is based on actual gasoline shortages while another part is based on the fear of potential shortages. Finally, there is in all likelihood a part caused by desires of people to save gasoline.

Early in 1974 the Opinion Research Corporation conducted an extensive survey of the effects of the energy crisis on travel. While the survey helped to identify attitudes at the time, it does not show fundamental shifts in travel patterns which could be expected to outlive the height of last winter's energy shortage. One question did indicate that if gasoline supplies had continued to be limited, 12% of the people planning automobile vacation trips would have switched to train travel. Had a shift of this magnitude occurred, it would have had an enormous impact on Amtrak. This kind of dramatic shift did not take place and what effects there were on Amtrak ridership last winter now appear to be waning.

For the future, it appears that while another gasoline shortage could result in dramatic ridership increases, Amtrak's future depends more on its ability to attract new riders who select rail travel for more positive reasons.

Q. Has Amtrak explored ways of expanding mail and express carriage to bring about a more favorable cost to revenue ratio?

A. During 1973 revenues from the carriage of mail doubled to $4.4 million. With the addition of new routes and the increase

in mail volume handled, on existing routes, we anticipate revenue will again double by 1975 to $8 to $10 million.

One constraint on the addition of stops where mail can be handled has been the time taken to physically load and unload sacks of mail. As a result, we have now begun using containers which roll quickly in and out of mail cars. If these containers, which are being used on an experimental basis between Washington and Jacksonville, Florida, are successful, they will be adapted to other routes. Using containers should reduce by two-thirds the time required to load and unload mail.

In 1972 we inaugurated an express program designed primarily to carry newspapers. This service was expanded to include small packages carried on the Metroliners between Washington and New York. Recognizing the revenue potential from increased express business, we set up a separate office specifically responsible for establishing a nationwide express program. This program took effect on July 1, 1973.

The program offers three basic express services: "priority" "economy" and "custom".

"Priority" express, offered to 32 cities on Amtrak corridor routes, is intended for small packages requiring rapid movement.

"Economy" express, offered to over 300 cities on all major routes, is intended for normal express shipments of up to 250 pounds.

"Custom" express is offered to shippers with frequent, heavy or unusual requirements. Rates are handled on an individually negotiated basis and are available in over 300 cities.

Revenues from express service during the second half of 1973 were nearly $500,000. It is hoped this amount can be

substantially increased this year, and to accomplish this goal, a major advertising program was started in March, 1974.

Q. This Administration has asked the American people to save energy, to drive their automobiles less, to join in car pools and to use public transportation. Do you believe that Amtrak has a responsibility to implement this policy, by making alternative forms of transportation available and thus encourage energy savings?

A. Amtrak certainly does have an obligation to provide service in areas where rail passenger service is the most efficient mode. Likewise, we have a responsibility to work with other modes where this would better serve the national interest.

Q. In line with this national objective, what plans has Amtrak developed to make energy-efficient public transportation available in areas, such as between Butte and Salt Lake City, where none is currently available? This vast area of the Western United States is without north-south passenger train service.

A. Within the constraints of budget limitations and a finite equipment fleet which is not subject to immediate growth, Amtrak is endeavoring to serve as many people in as many different parts of the country as we possibly can. We have recently placed orders for 257 new conventional cars and are buying 13 turbine powered train sets. This equipment plus additional cars and trainsets we plan to order in the future, plus a stepped up maintenance and refurbishment program for our existing fleet will permit us to serve an ever increasing number of people in increasing comfort.

Our nationwide marketing program continues to urge the public to ride trains both for the pleasure of the trip and the need to save energy.

At the same time, however, the limitations of rail transportation as an energy efficient mode must be recognized. The

Corporation's aim is to concentrate our resources in those parts of the country where we can benefit people the most and to work closely with other modes where they retain the advantage of greater energy efficiency.

Q. Should the Congress provide funding for a tri-weekly one year experimental operation between these points, what lead time would be needed before actual operation could begin?

A. It is difficult to estimate the lead time that might be required to begin operation of service on this route, principally because we have made no on-site inspection of the Union Pacific tracks and facilities and therefore have no firm fix on the capital improvements that might be necessary.

FUNDING REQUEST

Senator BYRD. Proceed with your statement, Mr. Lewis.

Mr. LEWIS. Mr. Chairman, we appreciate this opportunity to appear again before the committee today to discuss our funding request for fiscal year 1975, especially in light of the House Appropriations Committee's proposed reduction.

CURRENT STATUS OF AMTRAK

First, with your permission, I would like to outline very briefly the current status of Amtrak and the direction we are taking to achieve the objectives established by Congress. Amtrak has now completed its third year of train operations. During this past year, questions relating to Amtrak's role in the national transportation system have been clarified and we now have a much clearer picture of our forward requirements.

RESULTS OF FIRST TWO YEARS OF OPERATION

Amtrak's first and second fiscal years, fiscal 1972 and 1973, were Amtrak's very tentative years of beginning—tentative in terms of ultimate route structure, service patterns and acceptance by the traveling public. These were trial years during which management could not recommend heavy capital investments because future needs could not be precisely justified. Fiscal 1974, on the other hand, has seen congressional and administration acceptance of the basic Amtrak route structure; a legislative direction established for a controlled expansion of the Amtrak route system, and, most importantly, public acceptance as expressed in our most encouraging ridership growth. Although rapid growth has brought operational problems, the scope and depth of our ridership increase demonstrates clearly that Americans want Amtrak to succeed.

PLANS FOR FISCAL YEAR 1975

As a result of this acceptance of Amtrak's role in the nationwide transportation system, we have developed and have requested approval of a comprehensive and balanced equipment and facility program to meet the demands of the public over the next 5 years. Fiscal 1975, therefore, will be a year of challenge and transition. The challenge will be in maintaining operations and accelerating our improvement programs while attempting to manage a substantially increased level of total demand that has arrived ahead of schedule.

It will be a year of transition because preparation must be completed in anticipation of new equipment deliveries scheduled, in general, for fiscal 1976. During fiscal year 1975, we will be focusing on planning, training programs, assimilation of new service responsibilities, placing heavy stress on cost control, and on the effort to complete required fixed-facility improvements pending the delivery of new cars and train sets. Also, in fiscal year 1975, we will see a significant improvement in operations as a result of acceptance of 150 new diesel-powered locomotives, which by the end of August of this year will have been progressively delivered and distributed throughout the system.

DEVELOPMENT BUDGET REQUEST

As the committee knows, at the start of the budgeting process last fall, we submitted to the Congress and to the administration a preliminary estimate of our needs for fiscal year 1975. This estimate was made before the need to accelerate improvement programs was dictated by the energy crisis and before the full impact of inflation on wages and material prices was known. The initial estimate for fiscal year 1975 was subsequently revised, and the President's budget request for Amtrak incorporates this revision. Even this revised request, however, was developed more than 6 months ago and the passage of time has continued to require revisions in estimates.

TREND OF REVENUES AND EXPENSES

The Amtrak fiscal trend shows no reduction in deficits. I would like to make several points in relationship to the trend in revenue as well as the trend in expense.

Revenue from fiscal year 1972 to fiscal year 1975 shows an increase of $115.3 million or 75 percent in the 3-year period. We have made every effort to offset inflationary costs to the extent possible by raising fares, and the increase in revenue reflects both ridership growth and fare increases. In order to determine the true growth in ridership, the revenue increase attributable to fare changes must be subtracted. Of the total revenue increase of $115.3 million, $35.8 million relates to fare changes and $79.5 million reflects ridership growth. The ridership growth represents an increase of 52 percent of the 3-year period, with 23 percent occurring in the current fiscal year. We think this is solid evidence of public acceptance of rail passenger service.

EFFECT OF INFLATION ON COSTS

Change in expense from fiscal year 1972 to the estimate for fiscal year 1975 shows an increase of $104.8 million, or 34 percent in the 3-year period. Although we have exerted great effort to control costs, we have been severely affected by inflationary costs of labor and materials. Excluding changes in labor rates and material prices, the increase in expense over the 3-year period amounts to $44.4 million, which is a reasonable incremental cost as related to the comparable revenue increase of $79.5 million. Inflation, therefore, has raised our operating costs by $60.4 million in 3 years. The escalating cost of fuel has had a particularly adverse cost impact in the last year. If we had raised fares to offset this cost of inflation completely, the required increase would have amounted to 40 percent and the resulting fares would not be competitive with other modes of transportation.

In summary, if the effect of inflation is eliminated from both the revenue and the expense totals, the fiscal trend does reflect a significant reduction in deficits and does indicate a positive control over costs. Unfortunately, there is no assurance that wages and prices will stabilize in the immediate future, and we must assume that costs as projected for fiscal year 1975 are understated significantly due to inflation.

NEW OPERATING CONTRACTS

Amtrak has signed new contracts with the Burlington Northern and also with the Milwaukee Road, and has negotiated a new contract with the Penn Central Railroad, which is now pending approval of the reorganization court. These new contracts, in accordance with our objectives and congressional guidance, relate cost compensation to railroad performance. Although the new contracts will increase compensation to the two railroads in fiscal year 1975, the contracts will result in increased performance and will be of benefit to Amtrak and its customers. Among these benefits are the following contractual provisions:

(1) Each specific service to be provided is defined in detail and priced on an incremental cost basis;

(2) Where applicable, services to be provided are on a fixed price basis, while the remaining services will be paid on an actual, not to exceed a specific ceiling, basis;

(3) Incentives and penalties are included to provide for improved performance.

Negotiations with other contracting railroads are underway. Additional contracts, patterned after the Burlington Northern, the Milwaukee and the Penn Central contract, could become effective during fiscal year 1975.

EFFECT OF NEW ROUTES ON BUDGET

Amtrak did not budget for any deficits that will be incurred for the operation of new services designated by the Congress or requested by States under section 403(b) of the act, or designated by the Secretary of Transportation under section 403(d) of the act. The initiation of such services will require additional funds in fiscal year 1975. On June 27, 1974, the Secretary of Transportation designated two new routes under section 403(d). One route will operate between Boston and Chicago, the other between Norfolk and Cincinnati via Bluefield on the Norfolk & Western. We are refining schedules and cost estimates for these routes and we will advise the committee of our determinations.

NEED TO REVISE BUDGET

The thrust of this portion of our statement is that because of contingencies that could not be dealt with when the budget was in preparation, the budgeted amount of $143 million in all likelihood will be insufficient to see Amtrak through the entire fiscal year. The House Committee on Interstate and Foreign Commerce and the Senate Committee on Commerce have taken a realistic approach and recommended an authorization for appropriation of $200 million for fiscal year 1975.

I wish to stress to this committee that we are making every effort to gain efficiency and reduce costs. On the other hand, Congress has required Amtrak to provide service on a nationwide network of routes, and the public is demanding quality service. As I have indicated, most of Amtrak's major costs are fixed by law or result from forces beyond

our corporate control, such as the escalating costs we must pay for material and services.

Because of our statutory service requirements, the situation at the present time is highly leveraged against achieving heavy deficit reductions on a short term basis without making service cuts. We do not believe this is desirable, and we are hopeful that an appropriate level of funding will be provided.

EFFORTS TO IMPROVE SERVICE

Meanwhile, we are continuing our efforts to solve basic operating problems so as to improve service. We must have better schedule reliability than we have been able to achieve under the current contracts. We must have better equipment reliability, also. We are making progress on equipment reliability as a result of the heavy investment in car upgrading. We also need more direct control of the maintenance process—both for heavy and recurrent maintenance. In the future there are to be more maintenance facilities owned, staffed and supervised by Amtrak.

I have stressed our problems because that is where the stress belongs. But I would not want to leave the impression that we have not been making progress. The ridership and revenue figures presented here show very encouraging public support for the Amtrak concept. Some of this growth, of course, has been stimulated by the gasoline problems and perhaps some of it reflects reduced airline flight frequencies. But much of it stems from our improvement efforts as well as our marketing programs. The upturn was already strongly in evidence before last fall.

More progress is ahead. Our modern, unique, computerized reservations system is now going into full nationwide operation. Major equipment purchases, including turbine-powered trains and 257 new locomotive-hauled cars, are already on order.

Amtrak is now moving further into advanced and innovative areas. It was never our mandate to rebuild the rail passenger system of the ninteen-thirties. We were chartered to build a rail service suitable for the seventies and beyond. It has not been easy and it will not be easy.

If fiscal year 1975 is to be a year of transition, as I suggested earlier, then 1976 and beyond must be the years of realization. As we proceed through this transition period to the large-scale programs ahead, which include the northeast corridor upgrading program called for in the Rail Reorganization Act of 1973, we will need extra measures of support and understanding from all concerned. This committee and the Congress has from the beginning been extremely helpful to us and our efforts, and I am hopeful for the future.

STATUS OF NORFOLK-CINCINNATI SERVICE

Senator BYRD. Thank you, Mr. Lewis.

In the supplemental appropriation for fiscal year 1974 the conferees earmarked $2 million for the initiation of the new Amtrak route to which you have referred. I would like to ask what is the current status that is proposed to initiate that service in Norfolk and Cincinnati via Roanoke and Bluefield.

Mr. LEWIS. At the present time, the Norfolk and Western Railroad is proposing improvements to the track to accommodate that service. When the scope of the improvements has been determined and with the funding availability assured, the proposal to initiate this service will be presented to the Amtrak Board of Directors. Work is also needed in the city of Cincinnati on the Penn Central Railroad, so that the trains can either be held and serviced or switched there.

The Norfolk and Western Railroad has promised to provide cost estimates by July 29, 1974. I hope we will be able to clear the decks on the announced start-up date shortly thereafter.

LEVEL OF FUNDING NECESSARY FOR NORFOLK-CINCINNATI

Senator BYRD. I recognize that the $2 million earmarked for this service is less than the amount that has been estimated for capital improvements and operating costs for fiscal year 1975. What additional funding do you at this time anticipate will be needed, taking into consideration capital as well as the operating requirement?

Mr. LEWIS. On the capital side, Senator, we don't have final figures from the Norfolk and Western but, including the track work and station improvements, the costs may be in the area of twice the $2 million amount already appropriated.

On the operating side, of course, it will depend on the date we start the service. Assuming congressional approval of the fiscal year 1975 funding program by the end of July, the train would probably operate for 6 months during fiscal 1975 with an operating deficit for that period of about $2 million.

Senator BYRD. You would anticipate a total as of now of about $6 million?

Mr. LEWIS. That is right, $4 million for capital and $2 million for one-half year's operation.

NEW OPERATING CONTRACTS

Senator BYRD. I understand you are attempting to negotiate new contracts with the railroads in accordance with congressional guidance provided in the Amtrak Improvement Act of 1973. What are you trying to achieve and also what is the status of your negotiations?

Mr. LEWIS. Senator, we have been operating under a standard contract with all of the railroads, a common contract with the 13 participating railroads, which has had a very serious financial effect on the corporation. In a sense, it has always been a cost-reimbursement-type contract payable in the current month in which the services are performed. It has been very difficult to define service and performance and to relate the payment of money to performance under the contract. It was also very difficult because the provision under which the contract could be reopened for a price is exclusively confined to questions of compensation. We were not able to open the contract for a question of service, and there was some dispute between ourselves and the railroads about what the accounting basis should be; whether it should be on an allocated basis or on an avoidable cost basis.

Last year, the railroads notified us of their desire to reopen the contract. The matter was discussed with Members of Congress and we

received various directions from Congress, first, as to the cost base to be established. Then we got some further help from the Interstate Commerce Commission in establishing standards of service.

The result is that we now have three contracts signed with railroads, which I believe will have a very beneficial effect on railroad performance.

In the first place, we have a very specific statement of the services to be provided on an incremental cost basis. For a single paragraph in the original contract we have substituted an appendix an inch thick describing what the specific services are that are to be provided.

Second, either fixed prices or actual cost are to be the ceiling for such services and equipment, power and engine crews, where applicable relating directly to the number of train-miles.

The authorized railroads will only be able to earn fees if they improve their on-time performance and maintain a high level of equipment availability. But they will have the incentive.

I believe that under these conditions we can expect to realize a major improvement in railroad performance. I think you have to go back to the fact that the railroads, having been relieved of the risks of the operation, have, up to now, had less incentive to perform than we have had an interest in seeing that they perform.

I believe, Senator, this contract will go a long way to reduce that imbalance and establish a relationship between the parties of a more conventional and responsible business character.

EFFECT OF HOUSE REDUCTION OF APPROPRIATION REQUEST

Senator BYRD. Would you have had to reduce service to absorb the reduction of $18 million the House made?

Mr. LEWIS. Yes, sir. As you know, one of the characteristics of this business is that a very large portion of our costs are of a semifixed character. We can do very little about it as long as we are required to run the basic system by the Congress and the Department of Transportation. If we were to have less funding than our deficit required, we could work within that limitation only by cutting back the frequency of service where we now have a number of trains per day, and that, of course, is right where the revenue is so great that it would be a very dubious business decision to make. There may be some areas where we could reduce daily service to two or three times a week but I think again it would have a serious effect on revenues.

Senator BYRD. Can you indicate the scope of the new routes to be added in fiscal year 1975?

Mr. LEWIS. I would like to have a little time to pull that together. We have detailed studies of these proposals and I think we could give you a good estimate.

Mr. Barnum, do you have anything to add in response to the questions?

Mr. BARNUM. No, sir.

We appreciate the difficulties required to keep Amtrak running. There are a number of unknowns laid out in our hearings before the subcommittees.

As I said in my statement, I find no basis for disagreeing with Mr. Lewis' statement of $200 million that would be required this year.

There is a serious budgeting problem in not knowing how much they are going to have and the Board will have to address the very question you asked—do we cut back services?

Senator BYRD. Thank you for your testimony. We will certainly do the best we can to expedite action on the bill and to support your recommendations as far as I am concerned.

Thank you very much, gentlemen.

SUBCOMMITTEE RECESS

The subcommittee will stand in recess until 2 o'clock today at which time the Federal Aviation Administration will be testifying.

[Whereupon, at 12:15 p.m., the subcommittee was recessed, to reconvene at 2 p.m. the same day.]

(AFTERNOON SESSION, 2:15 O'CLOCK, MONDAY, JULY 22, 1974.)

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

STATEMENT OF ALEXANDER BUTTERFIELD, ADMINISTRATOR

ACCOMPANIED BY:

JAMES E. DOW, ACTING DEPUTY ADMINISTRATOR
CHARLES E. WEITHONER, ACTING ASSOCIATE ADMINISTRATOR FOR ADMINISTRATION
GUSTAV E. LUNDQUIST, ASSOCIATE ADMINISTRATOR FOR ENGINEERING AND DEVELOPMENT
WILLIAM M. FLENER, ACTING ASSOCIATE ADMINISTRATOR FOR AIR TRAFFIC AND AIRWAY FACILITIES
ROBERT F. BACON, ACTING DEPUTY ASSOCIATE ADMINISTRATOR FOR POLICY DEVELOPMENT AND REVIEW
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THEODORE C. LUTZ, DEPUTY UNDER SECRETARY FOR BUDGET AND PROGRAM REVIEW
RICHARD W. SLOCUM, DEPUTY DIRECTOR OF BUDGET, OFFICE OF THE SECRETARY

PREPARED STATEMENT

Senator MANSFIELD [presiding]. The subcommittee will come to order. The subcommittee will now consider the budget request for the Federal Aviation Administration. We are happy to have the Administrator of the FAA, Mr. Alexander Butterfield, and his colleagues with us to testify to his request.

Mr. Butterfield, you may proceed to highlight your statement at this point, and we will have your full statement laid in the record at this point.

[The statement follows:]

I AM GLAD TO HAVE THE OPPORTUNITY TO APPEAR ONCE AGAIN BEFORE THIS SUBCOMMITTEE. WHILE YOU WILL NOT ALWAYS SHARE OUR CONCLUSIONS, YOU HAVE ALWAYS GIVEN THOUGHTFUL AND KNOWLEDGEABLE ATTENTION TO FAA'S PROPOSALS AND APPEALS, AND TO AVIATION'S PROBLEMS AND OPPORTUNITIES.

I SHOULD PERHAPS BEGIN BY ASSURING YOU THAT THE 1975 BUDGET ESTIMATE BEFORE YOU REFLECTS MY BEST JUDGMENT AS TO THE RESOURCES REQUIRED TO IMPLEMENT AND SUSTAIN THE FAA'S PROGRAMS...ALL OF WHICH ARE GEARED EITHER DIRECTLY OR INDIRECTLY TO ENHANCE SAFETY AND EFFICIENCY IN THE NATIONAL AIRSPACE SYSTEM, AS WELL AS PROMOTE U.S. CIVIL AVIATION AND AIR COMMERCE BOTH AT HOME AND ABROAD.

BECAUSE AVIATION ACTIVITY AND THE FAA'S WORKLOAD ARE SO CLOSELY RELATED, I BELIEVE IT WOULD BE USEFUL AND APPROPRIATE FOR ME TO COMMENT ON THIS WORKLOAD AND ACTIVITY AS WE SEE IT PROJECTED THROUGH 1975, PARTICULARLY AS IT WAS IMPACTED BY THE ENERGY SITUATION. THE ANNUAL TRAFFIC COUNT AND FORECAST REFLECTED IN THE 1975 BUDGET SUBMISSION WERE ISSUED LAST SEPTEMBER, AS THE BASIS FOR THE COMING YEAR'S BUDGET ESTIMATES. AS A RESULT OF LAST WINTER'S ENERGY PROBLEMS, WE DID RECOGNIZE SOME EARLY SHORT-TERM CHANGES IN AERONAUTICAL ACTIVITY, AND SUBSEQUENTLY, REDUCED STAFFING GROWTH IN THE BUDGET REQUEST TO REFLECT THIS PRELIMINARY ASSESSMENT.

ALTHOUGH WE NORMALLY SCHEDULE THE EXHAUSTIVE SURVEY OF AVIATION ACTIVITY ONLY ONCE EACH YEAR, THE ENERGY SITUATION WARRANTED THE UNUSUAL STEP OF A SPECIAL UPDATE TO ASSESS ITS IMPACT ON AVIATION ACTIVITY AND OUR WORKLOAD. OUR ANALYSIS INDICATES THAT THE REDUCTION IN AERONAUTICAL ACTIVITY IS EXPECTED TO BE SHORT-TERM AND WILL NOT, IN OUR JUDGMENT, SIGNIFICANTLY AFFECT LONG-TERM OUTLOOK IN AVIATION.

INDICATIONS AT THIS POINT ARE THAT THE COST OF FUEL RATHER THAN ITS AVAILABILITY WILL BECOME THE DOMINANT CONSIDERATION IN THE IMPACT

ON FUTURE AERONAUTICAL ACTIVITIES. FUEL PRICES APPEAR TO BE STABILIZING, AT LEAST AT THIS TIME AND PERMIT US TO MAKE THIS RECENT FORECAST WITH A REASONABLE DEGREE OF CONFIDENCE. IT IS THE BASIS FOR FAA'S CONTRIBUTION TO A TOTAL TRANSPORTATION SYSTEM WITH SUFFICIENT CAPABILITY TO MAINTAIN SAFE AND EFFICIENT OPERATIONS.

LET ME CITE SOME OF THE PRINCIPAL WORKLOAD INDICATORS FOR 1975 OF THIS MOST RECENT ANALYSIS. I SHOULD NOTE THAT THESE PROJECTIONS REPRESENT OUR MOST CONSERVATIVE ESTIMATES OF SYSTEM WORKLOAD.

-- INSTRUMENT OPERATIONS HANDLED BY FAA TOWERS WILL REACH 24.7 MILLION, AN INCREASE OF 9 PERCENT OVER 1973 TOTAL OF 22.6 MILLION.

-- FLIGHT SERVICES PROVIDED BY FLIGHT SERVICE STATIONS ARE ESTIMATED TO NUMBER 55.4 MILLION OR 3 PERCENT MORE THAN THE 53.7 MILLION IN 1973.

-- IFR AIRCRAFT HANDLED BY OUR EN ROUTE SYSTEM ARE ESTIMATED AT 23.0 MILLION COMPARED TO 22.8 MILLION AIRCRAFT HANDLED IN FY 1973.

-- AIRCRAFT OPERATIONS, MEANING LANDINGS AND TAKEOFFS, BY FAA TOWERS ARE EXPECTED TO HIT 54.8 MILLION, A SLIGHT RISE OVER THE 1973 TOTAL OF 53.9 MILLION.

THESE LATEST FORECASTS, WHICH I AGAIN EMPHASIZE ARE ON THE CONSERVATIVE SIDE, SUPPORT THE ADJUSTED STAFFING LEVELS WHICH ARE INCLUDED IN OUR BUDGET REQUEST, AND CONFIRM OUR PRELIMINARY ASSESSMENT.

AT THIS POINT IT MIGHT BE HELPFUL TO HIGHLIGHT SOME OF THE MORE SIGNIFICANT ACCOMPLISHMENTS ACHIEVED IN LARGE MEASURE THROUGH THE SUPPORT AND RESOURCES PROVIDED BY THIS COMMITTEE AND CONGRESS.

1. THE RECORD FOR AIR OPERATIONS CONTINUES TO REFLECT THE CONTINUED EMPHASIS WE ARE PLACING ON SAFETY PROGRAMS. FOR AIR CARRIERS, ACCIDENTS DECREASED FROM 50 IN 1972 TO 41 IN 1973, A LOW FOR THE LAST 25 YEARS. WITH THE INCREASE IN FLIGHT HOURS, THESE FIGURES RESULTED IN THE OVERALL ACCIDENT RATE DROPPING FROM 0.793 TO 0.613 (PER 100,000 AIRCRAFT HOURS FLOWN) IN 1973. HOWEVER, THERE WAS A SLIGHT INCREASE IN THE FATAL ACCIDENT RATE FROM 0.127 IN 1972 TO 0.138 IN 1973. IN GENERAL AVIATION, TOTAL ACCIDENTS DECREASED FROM 4,228 TO 4,180 IN 1973, THE LOWEST IN 17 YEARS. WITH THE INCREASE IN HOURS FLOWN, THE TOTAL GENERAL AVIATION ACCIDENT RATE FELL FROM 15.4 IN 1972 TO 14.8 (PER 100,000 AIRCRAFT HOURS FLOWN) IN 1973. AT THE SAME TIME THE FATAL ACCIDENT RATE DROPPED FROM 2.52 IN 1972 TO 2.19 IN 1973.

2. DURING 1973 WE INITIATED A NUMBER OF SIGNIFICANT PROGRAM ACTIVITIES TO ENHANCE SAFETY OF OPERATIONS, INCLUDING:

A. STRENGTHENING REGULATIONS FOR DEALING WITH TRANSPORTATION OF HAZARDOUS MATERIALS;

B. INTRODUCING A NEW CONCEPT FOR OPERATIONAL TRAINING OF PILOTS WHICH PLACES FULL RESPONSIBILITY FOR ALL PHASES OF REQUIRED TRAINING ON THE FLIGHT INSTRUCTOR AND OTHERWISE UPGRADES PILOT TRAINING AND TESTING;

C. REVISING REGULATIONS TO REQUIRE THAT LARGE AND TURBINE-POWERED, MULTI-ENGINE, GENERAL AVIATION AIRPLANES BE MAINTAINED ON WHAT WE CALL A CONTINUOUS INSPECTION PROGRAM, IN LIEU OF ANNUAL, 100-HOUR, OR PROGRESSIVE INSPECTIONS;

D. DEVELOPING IN COOPERATION WITH THE DEPARTMENT OF DEFENSE A NEW PROGRAM TO INSPECT SURPLUS MILITARY AIRCRAFT FOR STANDARD AIR WORTHINESS PRIOR TO SALE;

E. REVISING STANDARDS FOR FAA CERTIFICATION OF GROUND SCHOOLS, FLYING SCHOOLS, AND PILOT TRAINING COURSES. THESE PROPOSALS TO AMEND THE FEDERAL AIR REGULATIONS WOULD PERMIT MORE EXTENSIVE USE OF VISUAL SIMULATORS FOR FLIGHT TRAINING AND PROFICIENCY CHECKS, INCREASE SAFETY IN FLIGHT TRAINING, AND REMOVE AIRPLANES USED SOLELY FOR TRAINING AND CHECKING FROM THE CROWDED AIR TRAFFIC SYSTEMS.

3. IN SEPTEMBER 1969, FAA ISSUED A NOTICE OF PROPOSED RULEMAKING FOR CONTROL OR SEGREGATION OF ALL AIRCRAFT OPERATING WITHIN AIRSPACE DESIGNATED AS TERMINAL CONTROL AREAS. AIRCRAFT OPERATING UNDER THIS CONCEPT WOULD ENHANCE AIR SAFETY UNDER POSITIVE CONTROL. THIS PROGRAM HAS BEEN ESTABLISHED AT NINE OF THE BUSIEST AIR TERMINALS, REFERRED TO AS GROUP I TCA'S. OTHER LESS BUSY TERMINALS HAVE NOW BEEN DESIGNATED AS GROUP II, WITH LESS STRINGENT PILOT AND EQUIPMENT REQUIREMENTS. POSITIVE CONTROL PROCEDURES ARE BEING IMPLEMENTED AT THESE LOCATIONS IN 1974.

4. WE HAVE EXPERIENCED THE LONGEST PERIOD WITHOUT A SUCCESSFUL HIJACKING OF A U.S. AIRCRAFT IN MORE THAN SIX YEARS. IT CAN BE DIRECTLY ATTRIBUTED TO STRENGTHENED CIVIL AVIATION SECURITY MEASURES REQUIRED BY FEDERAL AIR REGULATIONS AND NEGOTIATION OF AN AGREEMENT WITH CUBA. THIS RECORD OF ACHIEVEMENT IS HIGHLIGHTED BY THE FACT THAT DURING THE SAME PERIOD, 23 AIRCRAFT OF 16 NATIONS IN OTHER PARTS OF THE WORLD WERE EXPOSED TO THESE ACTS OF PIRACY. FEDERAL EMPHASIS IN 1975 WILL INCREASE ATTENTION TO OVERSEAS. WE HAVE RECENTLY PROPOSED ADDITIONAL REGULATORY ACTION TO GUARANTEE COMPARABLE SECURITY FOR OTHER NATION'S AIRCRAFT ARRIVING IN, DEPARTING FROM, OR OPERATING WITHIN OUR BORDERS. EARLIER THIS YEAR A NOTICE OF PROPOSED RULEMAKING WAS PUBLISHED IN THE FEDERAL REGISTER WHICH WOULD REQUIRE FOREIGN FLAG CARRIERS WISHING TO ENTER AMERICAN AIRSPACE TO ADOPT THE SAME BASIC SECURITY MEASURES NOW REQUIRED OF U.S. CARRIERS. COMMENTS HAVE BEEN RECEIVED AND ARE

NOW BEING REVIEWED PRIOR TO FINAL ACTION. WE ALSO PLAN TO MAKE AVAILABLE OUR EXPERTISE TO ANY NATION WHICH REQUESTS SUCH TECHNICAL ASSISTANCE. IN COOPERATION WITH THE LAW ENFORCEMENT ASSISTANCE ADMINISTRATION (LEAA), FAA IS EXPANDING TRAINING OF AMERICAN AND FOREIGN PERSONNEL IN PASSENGER SCREENING AND AIRPORT SECURITY.

5. WE HAVE INSTITUTED A SEVEN-POINT FUEL CONSERVATION PLAN WHICH IS SAVING UP TO 20,000 BARRELS (840,000 GALLONS OF JET FUEL) PER DAY. IT INCLUDES:

A. REVISED GATE-HOLD PROCEDURES AT AIRPORTS AND AIR TRAFFIC FLOW PROCEDURES;

B. INCREASED USE OF OPTIMUM AIRCRAFT CRUISING SPEEDS TO EFFECT FUEL SAVINGS WHEREVER POSSIBLE;

C. HOLDING AIRCRAFT AT HIGHER ALTITUDES;

D. ASSIGNING OPTIMUM ALTITUDES AND MINIMIZING CIRCUITOUS ROUTINGS;

E. TAXIING AIRCRAFT WITH FEWER ENGINES;

F. INCREASED USE OF SIMULATORS FOR TRAINING AND CHECK FLIGHTS, AND;

G. ENCOURAGING SPONSORS TO ACCELERATE CONSTRUCTION OF AIRPORT RUNWAY AND TAXIWAY IMPROVEMENTS.

6. I CAN REPORT SEVERAL IMPORTANT ACTIONS TO REDUCE AIRCRAFT NOISE:

A. AN ADVANCE NOTICE OF PROPOSED RULEMAKING TO INTRODUCE A TWO-SEGMENT ILS NOISE ABATEMENT PROCEDURE, PUBLISHED MARCH OF THIS YEAR. PUBLIC COMMENTS ON THIS PROPOSAL ARE NOW UNDER REVIEW IN THE AGENCY.

B. A NPRM TO RETROFIT OLDER TURBOJET ENGINES TO MEET FAR 36 NOISE LEVELS, ALSO PUBLISHED IN MARCH. PUBLIC COMMENTS ON THIS PROPOSAL ARE ALSO UNDER REVIEW.

C. A RULE PROHIBITING SST AIRCRAFT SONIC BOOMS WHILE OVER-FLYING THE UNITED STATES.

7. WE HAVE BEEN SIMILARLY ENERGETIC IN REDUCING ENGINE EMISSIONS WITH:

A. A SPECIAL FAR TO RETROFIT SMOKELESS COMBUSTORS ON THE JT8D ENGINES USED BY THE AIRLINES ON B-727, B-737, AND DC-9 AIRCRAFT; AND WHICH ALSO BANS FUEL VENTING FROM TURBINE ENGINES.

B. AN ADVISORY CIRCULAR RECOMMENDING SHUTDOWN OF ONE OR MORE THREE- OR FOUR-ENGINE TURBOJETS WHILE TAXIING INTO TERMINALS AFTER LANDING.

8. IN THE TERMINAL AUTOMATION PROGRAM 62 LARGE (ARTS III) SYSTEMS ARE PRESENTLY IN USE: 59 CONTROLLING TRAFFIC IN TERMINAL FACILITIES, TWO BEING USED FOR RESEARCH, ENGINEERING, AND DEVELOPMENT AT THE NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER (NAFEC) AND ONE USED FOR TRAINING AT THE FAA ACADEMY. THE TWO REMAINING SYSTEMS ARE INSTALLED AND EXPECTED TO BE IN OPERATION WHEN ASSOCIATED FACILITY MODIFICATION PROJECTS ARE COMPLETED THIS YEAR.

9. We initiated a major updating effort to ensure that air worthiness regulations are consistent with the state of the art. It will provide for full and effective consultation with industry as well as with air worthiness authorities in foreign countries. We hope to promote international cooperation in the field under U.S. leadership. In response to industry dissatisfaction, we are also working with the Government Printing Office to improve subscription services on Federal Air Regulations and other time-critical FAA publications on aviation safety.

10. Under the Grants-In-Aid for Airports program, our preliminary data shows that $300 million was obligated for development grants in FY 1974. Of this amount, $259 million (467 projects) was for improvements at air carrier and general aviation reliever airports, and $41.0 million (178 projects) covered improvements at airports used solely for general aviation.

11. Changes in FAA organization have been designed to improve its efficiency and effectiveness:

A. National Flight Inspection Field Office has now centralized responsibilities for flight inspection of air navigation facilities. This change and modernization of the flight inspection fleet as approved by the Congress is expected to achieve annual savings of some $7.0 million when fully implemented.

B. Reassessment of Alaska and Pacific Region Headquarters functions to save some 175 positions, which offset some of the new budget increases for on-the-line maintenance and air traffic controllers.

C. In Washington headquarters, we have established a new Associate Administrator for Aviation Safety to centralize responsibility

FOR AVIATION SAFETY PROCEDURES, AIRCRAFT AIRWORTHINESS, AIRMEN TRAINING AND CERTIFICATION AND SAFETY RULEMAKING. WE HAVE ALSO ESTABLISHED A NEW ASSOCIATE ADMINISTRATOR FOR AIRPORTS TO EMPHASIZE THE IMPORTANCE WE PLACE ON OUR AIRPORT SYSTEM PLANNING AND DEVELOPMENT PROGRAMS AND OPERATION OF THE TWO FEDERALLY OWNED AIRPORTS SERVING THE WASHINGTON METROPOLITAN AREA.

ESTABLISHMENT OF THESE POSITIONS ALSO MEANS THAT WE WILL HAVE AN ASSOCIATE ADMINISTRATOR FOR AIR TRAFFIC AND AIRWAY FACILITIES, WHOSE TIME CAN BE DEVOTED SOLELY TO RUNNING THE AIR TRAFFIC CONTROL SYSTEM.

12. CONSULTATIVE PLANNING TO EXCHANGE, ADVISE, AND COUNSEL WITH THE AVIATION COMMUNITY HAS EXPANDED SIGNIFICANTLY. IN ADDITION TO THE ANNUAL AVIATION REVIEW CONFERENCE, I HAVE INITIATED AN ANNUAL SERIES OF SESSIONS -- ONE EACH YEAR WITH EACH OF THE VARIOUS USER GROUPS AND QUARTERLY CONSULTATIVE PLANNING CONFERENCES DIRECTED AT SUCH MAJOR ISSUES AS NATIONAL AVIATION GOALS AND PRIORITIES. I ALSO PLAN TO MEET PERIODICALLY WITH SELECTED KEY AVIATION EXECUTIVES -- MY LAST SUCH MEETING WAS HELD IN APRIL. OUR ANNUAL AVIATION REVIEW CONFERENCE WAS HELD IN EARLY JUNE TO PROVIDE THE AVIATION COMMUNITY, USERS, AND PUBLIC AN OPPORTUNITY TO DISCUSS POLICY, PLANS, AND PROGRAMS.

13. TO PROMOTE AERONAUTICAL EXPORTS, WE RECENTLY PRESENTED U.S. INDUSTRY REPRESENTATIVES WITH FAA'S ANALYSIS OF THE EXTENT TO WHICH ICAO AIR NAVIGATION PLANS HAVE BEEN IMPLEMENTED IN THE AFRICA-INDIAN OCEAN, PACIFIC/SOUTHEAST ASIA REGIONS. OF COURSE, MEETING THESE PLANS RESTS WITH THE COUNTRIES WHOSE AIRSPACE THEY COVER, BUT FAA HAS UNDERTAKEN TO POINT OUT WHERE DEFICIENCIES EXIST AND TO HELP U.S. INDUSTRY MAKE ENTRY INTO POTENTIAL OVERSEAS MARKETS. THIS MEETING WAS HELD IN CONJUNCTION WITH THE DEPARTMENT OF COMMERCE, THE EXPORT/IMPORT BANK, AND THE DEPARTMENT OF STATE.

14. As you know, our mutual efforts to initiate an international program for evaluating and demonstrating the effectiveness of satellites in oceanic air traffic control systems were climaxed on May 6, 1974. On that date you authorized us to proceed with the AEROSAT program -- in concert with Canada and ESRO, the European Space Research Organization.

Three days later, on May 9, I was privileged to sign the Memorandum of Understanding which initiates AEROSAT. The first meeting of the AEROSAT Council will be held in late July.

We are confident that AEROSAT will eventually pay big dividends -- not only to Americans, Canadians and Europeans — but to all nations which have a major stake in safer, more efficient trans-oceanic aircraft operations. We shall periodically report to you on the progress of this pre-operational experiment.

THE FY 1975 REQUEST FOR APPROPRIATIONS

To provide for fiscal year 1975, FAA's budget request includes $1,755.2 million in budget authority and 56,178 full-time, permanent positions. This was $131.3 million and 476 positions over FY 1974, when adjusted to include the supplemental appropriation requested for the most recent Federal pay raises. In addition, the request includes $280 million to liquidate obligations incurred under contract authority for airport development grants provided in the Airport and Airway Development Act.

The House action on the Department of Transportation Bill reduced our request by $63.9 million. We appreciate the understanding and consideration of our safety programs which is reflected in the House Committee recommendations. The House cut includes $22.5 million in Operations, $16.0 million for Engineering and Development and $13.0

MILLION IN AIRPORT PLANNING GRANTS. ALSO INCLUDED IN THE REDUCTION IS $8.9 MILLION REQUESTED FOR AIR TRAFFIC CONTROL AND JET TRAINING SIMULATORS AS WELL AS $3.5 MILLION FOR OPERATION AND CONSTRUCTION REQUIREMENTS AT WASHINGTON NATIONAL AND DULLES INTERNATIONAL AIRPORTS. WE SHALL ADJUST OUR PROGRAMS TO ACCEPT $16 MILLION OF THE TOTAL, BUT ASK YOUR AID IN RESTORING $47.9 MILLION. THIS LOSS WOULD COMPROMISE OUR PERFORMANCE TO AN UNACCEPTABLE DEGREE.

BY APPROPRIATION, WE ARE ASKING THE SENATE TO RESTORE $15.0 MILLION FOR OPERATIONS, $15.0 MILLION FOR RESEARCH, ENGINEERING AND DEVELOPMENT, $0.5 MILLION FOR THE SMALL FACILITIES, ENGINEERING AND DEVELOPMENT ACCOUNT, $3.0 MILLION FOR CONSTRUCTION AT DULLES INTERNATIONAL AIRPORT, $5.5 MILLION FOR AIRPORT PLANNING GRANTS, AND $8.9 MILLION FOR FACILITIES AND EQUIPMENT. WE ARE ALSO ASKING THE SENATE TO DELETE THE LANGUAGE WHICH WOULD PROHIBIT USE OF THE FACILITIES AND EQUIPMENT APPROPRIATION TO DECOMMISSION FLIGHT SERVICE STATIONS AND GENERAL PROVISIONS BANNING USER FEES.

WITH THIS OVERVIEW, LET ME FIRST COMMENT BRIEFLY ON THE 1975 ESTIMATES FOR EACH APPROPRIATION.

OPERATIONS APPROPRIATION

THE PRESIDENT'S FY 1975 BUDGET REQUEST FOR THIS APPROPRIATION IS $1,385.5 MILLION AND 52,732 POSITIONS, $102.9 MILLION AND 691 POSITIONS ABOVE THE ADJUSTED 1974 LEVEL. THE ADDITIONAL FUNDS INCLUDED:

1. $42.9 MILLION FOR MANDATORY PAY ADJUSTMENTS ASSOCIATED CHIEFLY WITH IN-GRADE SALARY INCREASES, FULL-YEAR FUNDING OF PAY RAISES WHICH BECAME EFFECTIVE IN OCTOBER 1973, AND GRADE-TO-GRADE PROMOTIONS OF DEVELOPMENTAL AIR TRAFFIC CONTROLLERS;

2. $43.8 MILLION TO FINANCE ADDITIONAL EMPLOYMENT, FACILITY OPERATING EXPENSES, AND OTHER REQUIREMENTS RELATED TO FULL-YEAR COSTS OF PROGRAMS INITIALLY AUTHORIZED IN FY 1974. THIS AMOUNT INCLUDED $15.2 MILLION FOR AGENCY LEASE COSTS FORMERLY CONSOLIDATED IN THE GENERAL SERVICES ADMINISTRATION BUDGET, BUT WHICH NOW MUST BE FUNDED BY EACH AGENCY PURSUANT TO PROVISIONS OF PUBLIC LAW 92-313; AND

3. $16.2 MILLION TO FINANCE THE COST OF NEW EMPLOYMENT AND STAFFING IN AIR TRAFFIC CONTROL, MAINTENANCE AND ENGINEERING, AND OTHER EXPENSES NECESSARY TO OPERATE AND MAINTAIN PREVIOUSLY AUTHORIZED AIR TRAFFIC CONTROL AND NAVIGATION FACILITIES TO BE COMMISSIONED IN FY 1975. AMONG THE LATTER ARE 26 AIRPORT TRAFFIC CONTROL TOWERS, 71 INSTRUMENT LANDING SYSTEMS, AND EIGHT AUTOMATED RADAR TERMINAL SYSTEMS.

THE HOUSE ALLOWANCE PROVIDES $1,363.0 MILLION, A REDUCTION OF $22.5 MILLION FROM THE REQUEST. THE REDUCTION INCLUDES $13.8 MILLION WHICH FINANCES INCREASED AND CONTINUING EMPLOYMENT OF AIR TRAFFIC CONTROLLERS, $1.2 MILLION FROM A REQUESTED $15.3 MILLION FOR THE AIR TRAFFIC SECOND CAREER TRAINING PROGRAM, AND $7.5 MILLION IN TRAVEL, DEPOT STOCK REPLENISHMENT, SPECIAL PURPOSE EQUIPMENT, GSA RENTS AND OTHER CONTRACTUAL SERVICES. WE ARE REQUESTING RESTORATION OF $15.0 MILLION. WE WOULD ACCEPT REDUCTIONS OF $7.5 MILLION FOR TRAVEL, GSA RENTS, STOCK REPLENISHMENT, SPECIAL EQUIPMENT AND OTHER CONTRACTUAL SERVICES BY SCALING DOWN OR STRETCHING OUT OUR NEEDS OVER A LONGER PERIOD OF TIME.

WITH REGARD TO THE $13.8 MILLION REDUCTION IN EMPLOYMENT, WE BELIEVE THE HOUSE COMMITTEE DID NOT FULLY REALIZE THE IMPACT ITS ACTIONS WOULD HAVE ON AIR TRAFFIC OPERATIONS. THE BASIS FOR THE REDUCTION SEEMS TO PRESUME THAT THE AIR TRAFFIC ACTIVITY LEVELS REFLECTED IN THE BUDGET REQUEST ARE OVER-STATED BECAUSE THE BUDGET DID NOT REFLECT IMPACT OF FUEL SHORTAGES ON AVIATION ACTIVITIES. AS I PREVIOUSLY NOTED, SOME CHANGES WERE APPARENT IN DECEMBER AND WE REDUCED OUR STAFFING

REQUIREMENTS BELOW THE LEVELS WHICH OUR SEPTEMBER PROJECTIONS OF AVIATION ACTIVITY WOULD HAVE SUPPORTED. SINCE THEN, THE FUEL CRISIS HAS SUBSIDED, THE EMBARGO LIFTED, AND MANY PREVIOUSLY CANCELLED AIRLINE FLIGHTS REINSTATED. GENERAL AVIATION ACTIVITY, WHICH NEVER DECLINED TO THE DEGREE ANTICIPATED, RESUMED ITS PREVIOUSLY PROJECTED GROWTH RATE. IN LIGHT OF THIS SITUATION AND RECOGNITION OF THE FACT THAT LEAD TIME TO TRAIN CONTROLLERS IS TWO-THREE YEARS, WE ARE CONVINCED THAT THE PROPOSED REDUCTION IN AVERAGE EMPLOYMENT MUST BE RESTORED.

WE ARE ALSO REQUESTING RESTORATION OF THE $1.2 MILLION REDUCTION IN THE AIR TRAFFIC SECOND CAREER TRAINING PROGRAM. WHILE WE APPRECIATE THE CONCERN OF THE HOUSE COMMITTEE ABOUT THE INCREASED NUMBER OF CONTROLLERS PARTICIPATING IN THE PROGRAM AND THE HIGH COST OF THEIR TRAINING, OUR BUDGET REQUEST REFLECTS A REALISTIC ESTIMATE OF TRAINING WHICH MUST BE PROVIDED BY THE AGENCY UNDER EXISTING LEGISLATION. WITHIN THE YEAR WHICH JUST BEGAN, WE CANNOT EFFECTIVELY SEEK CHANGES TO THIS LEGISLATION TO REDUCE PROGRAM COST DURING FY 1975.

FACILITIES, ENGINEERING AND DEVELOPMENT

THE FY 1975 ESTIMATE FOR THIS APPROPRIATION IS $13.0 MILLION, $1.5 MILLION MORE THAN FY 1974. OF THIS TOTAL, $11.2 MILLION PROVIDES FOR CONTINUED STUDY, DEVELOPMENT, AND EVALUATION LEADING TO NEW OR IMPROVED SAFETY AND ENVIRONMENTAL PROTECTION. THE REMAINING $1.8 MILLION PAYS FOR PROCUREMENT OF TRAINING EQUIPMENT, AIRCRAFT MODIFICATIONS, AND COMMUNICATIONS EQUIPMENT PRIMARILY SO THAT AIR CARRIER INSPECTORS CAN MAINTAIN PROFICIENCY AND KEEP ABREAST OF THE LATEST TECHNOLOGY.

THE HOUSE REDUCED THIS $13.0 MILLION REQUEST BY $1.0 MILLION: $355,000 FOR AIRCRAFT SAFETY RESEARCH, $500,000 FOR AVIATION MEDICAL RESEARCH, $66,000 FOR AVIATION NOISE POLLUTION RESEARCH, AND $79,000 FOR EQUIPMENT.

WE ARE ASKING THE SENATE TO RESTORE $500,000 ASSESSED AGAINST MEDICAL RESEARCH PROGRAMS IN ORDER TO AVOID LONG-TERM DAMAGE TO MEDICAL RESEARCH OF HUMAN FACTORS IN AVIATION SAFETY.

OPERATION AND MAINTENANCE, NATIONAL CAPITAL AIRPORTS

WE ASKED FOR $16.5 MILLION FOR OPERATION AND MAINTENANCE AT WASHINGTON NATIONAL AIRPORT AND DULLES INTERNATIONAL AIRPORT, AN INCREASE OF $1.8 MILLION OVER FY 1974. THIS INCREASE WOULD PAY FOR MANDATORY PAY ADJUSTMENTS, SUPPLIES AND MATERIALS, AND INCREASED EMPLOYMENT, AS WELL AS HIGHER AVERAGE GRADES FOR AIRPORT SECURITY PERSONNEL. COMBINED REVENUES AT THE TWO AIRPORTS ARE ESTIMATED AT $23.8 MILLION IN FY 1975, AND SHOULD EXCEED OUT-OF-POCKET COSTS BY $7.9 MILLION. WHEN INTEREST AND DEPRECIATION ARE TAKEN INTO ACCOUNT, TOTAL REVENUES WILL APPROXIMATE TOTAL COSTS. THE HOUSE REDUCED THIS APPROPRIATION REQUEST BY $500,000. ALTHOUGH THE BASIS FOR THIS REDUCTION WAS NOT STATED, WE WILL RESCHEDULE ACTIVITIES SO THAT OPERATIONS ARE CONDUCTED WITHIN THE LEVEL RECOMMENDED BY THE HOUSE.

CONSTRUCTION, NATIONAL CAPITAL AIRPORTS

THE FY 1975 BUDGET INCLUDES $7.2 MILLION FOR CONSTRUCTION AT THE TWO AIRPORTS, $4.2 MILLION MORE THAN 1974. AT WASHINGTON NATIONAL AIRPORT $2.9 MILLION IS REQUESTED FOR ROADWAY IMPROVEMENTS, DEVELOPMENT OF A MASTER PLAN, TERMINAL AREA IMPROVEMENTS, OVERLAY OF TAXIWAYS, AND MODIFICATIONS TO THE INDUSTRIAL WASTE TREATMENT AND STORM DRAINAGE SYSTEMS. AT DULLES INTERNATIONAL AIRPORT $4.3 MILLION WAS TO FINANCE ENLARGEMENT OF THE JET RAMP AND SUPPORT FACILITIES, SERVICE ROAD IMPROVEMENTS, UTILITIES FOR NORTH COMMERCIAL AREA AND OFFICE BUILDINGS, REPLACEMENT OF AIRFIELD PAVEMENT PANELS, AND STUDY AND DESIGN OF EXPANDED PUBLIC PARKING.

THE HOUSE DELETED $3.0 MILLION REQUESTED TO ENLARGE THE JET RAMP AT DULLES INTERNATIONAL AIRPORT. ALTHOUGH THE HOUSE COMMITTEE REPORT DOES NOT INDICATE A REASON FOR THE REDUCTION, WE CAN ONLY ASSUME THAT IT WAS DONE ON THE BASIS OF A CONTINUING REDUCTION IN WIDE-BODIED JET FLIGHTS ASSOCIATED WITH THE ENERGY SHORTAGES. WE URGENTLY REQUEST RESTORATION OF THIS REDUCTION SO THAT WE MAY PROCEED WITH THIS PROJECT TO ACCOMMODATE A MODERN FLEET OF JET AIRCRAFT. WE HAVE A SERIOUS PROBLEM TODAY IN ACCOMMODATING WIDE-BODIED AIRCRAFT WHICH WILL INTENSIFY AS THE NUMBER OF SUCH OPERATIONS INCREASE. CONGRESS HAD PREVIOUSLY ACKNOWLEDGED THE NEED FOR THIS PROJECT BY PROVIDING FUNDS FOR THIS PURPOSE IN FY 1973. HOWEVER, BECAUSE ARCHITECTURAL AND ENGINEERING DESIGN WORK WAS NOT YET COMPLETE, WITH THE APPROVAL OF CONGRESS, THESE FUNDS WERE TRANSFERRED TO MEET AGENCY SALARY INCREASES. FURTHER, WITH THE EASING OF THE FUEL SHORTAGE AND OTHER INDICATORS, THE NUMBER OF WIDE-BODIED AIRCRAFT FLIGHTS ARE EXPECTED TO MEET OR EXCEED EARLIER PREDICTIONS BY LATE 1975 OR EARLY 1976, WHEN THE EXPANDED RAMP WOULD BE IN SERVICE.

GRANTS-IN-AID FOR AIRPORTS (AIRPORT AND AIRWAY TRUST FUND)

FAA REQUESTED $13.0 MILLION IN NEW BUDGET AUTHORITY FOR THE AIRPORT PLANNING GRANT PROGRAM TO PROVIDE FUNDS TO PUBLIC AGENCIES FOR AIRPORT SYSTEMS AND MASTER PLANNING. AN UNOBLIGATED CARRYOVER OF $2.0 MILLION FROM FY 1974 WAS ANTICIPATED, AND WOULD HAVE PERMITTED OBLIGATION OF THE $15.0 MILLION CALLED FOR IN THE AIRPORT AND AIRWAY DEVELOPMENT ACT.

FOR THE AIRPORT DEVELOPMENT GRANT PROGRAM, THE BUDGET REQUESTS A CASH APPROPRIATION OF $280 MILLION TO LIQUIDATE OBLIGATIONS WHICH WILL BECOME DUE AND PAYABLE DURING FY 1975. OBLIGATIONS ARE PLANNED AT $310 MILLION, CONSISTENT WITH THE AMOUNT MENTIONED IN THE AIRPORT AND AIRWAY DEVELOPMENT ACT. THESE GRANTS ARE USED FOR LAND ACQUISITION,

RUNWAY AND TAXIWAY CONSTRUCTION, PURCHASE AND CERTIFICATION OF SECURITY EQUIPMENT, RUNWAY AND TAXIWAY LIGHT SYSTEMS, AND BUILDINGS TO HOUSE SAFETY EQUIPMENT.

THE HOUSE ACTION DELETED $13 MILLION IN NEW BUDGET AUTHORITY REQUESTED FOR AIRPORT PLANNING GRANTS BECAUSE UNOBLIGATED BALANCES TOTALLED $14.7 MILLION AT THE TIME OF THE HEARINGS. WE ARE ASKING REINSTATEMENT OF $5.5 MILLION. IN FY 1974 WE ESTABLISHED A CONCEPT OF FUNDING CONTINUOUS PLANNING FOR BOTH THE STATES AND LARGER METROPOLITAN/REGIONAL AREAS. ALTHOUGH THE AIRPORT PLANNING HAD LEVELED OUT AT APPROXIMATELY $9 MILLION PER YEAR, THIS ADDED DIMENSION IS EXPECTED TO INCREASE THE REQUIREMENT TO THE FULL $15 MILLION CALLED FOR BY THE AIRPORT AND AIRWAY DEVELOPMENT ACT OF 1970. CURRENT ESTIMATES INDICATE A CARRYOVER BALANCE OF SOME $9.5 MILLION FROM FY 1974 WHICH WILL BE AVAILABLE TO MEET FY 1975 PROGRAM NEEDS.

FACILITIES AND EQUIPMENT (AIRPORT AND AIRWAY TRUST FUND)

FOR THIS APPROPRIATION, WE ASKED NEW BUDGET AUTHORITY OF $250 MILLION. THIS WILL CARRY FORWARD THE ON-GOING PROGRAM TO INCREASE AIRWAY SYSTEM CAPACITY AND MAKE ITS OPERATION SAFER AND MORE EFFICIENT. OF THE TOTAL:

1. $55.4 MILLION WILL PROVIDE IMPROVEMENTS TO THE EN ROUTE TRAFFIC CONTROL SYSTEM; $23.7 MILLION TO IMPROVE THE LONG-RANGE RADAR SYSTEM, INCLUDING PROCUREMENT OF FOUR NEW RADARS; $15.3 MILLION TO CONTINUE AUTOMATION OF AIR TRAFFIC CONTROL CENTERS, INCLUDING PURCHASE OF THREE NEW AUTOMATED CENTER SYSTEMS FOR LOCATIONS OUTSIDE THE CONTINENTAL U.S.; AND $16.4 MILLION TO IMPROVE EN ROUTE COMMUNICATIONS AND CENTER BUILDINGS.

2. $99.7 MILLION IS FOR THE TERMINAL TRAFFIC CONTROL SYSTEM: $37.7 MILLION FOR IMPROVEMENTS TO TERMINAL AREA RADAR SYSTEMS, OF

WHICH $24.0 MILLION IS FOR REPLACEMENT OF THE INTERIM NEW YORK COMMON INSTRUMENT FLIGHT RULES ROOM; $25.8 MILLION FOR CONTINUATION OF THE AUTOMATION PROGRAMS AT MAJOR TERMINALS, INCLUDING PURCHASE OF 22 SYSTEMS FOR LESS BUSY LOCATIONS; AND $36.2 MILLION FOR RELOCATION AND MODERNIZATION OF AIR TRAFFIC CONTROL TOWERS AND OTHER TERMINAL FACILITIES.

3. $20.9 MILLION FOR FLIGHT SERVICE STATION FACILITIES TO IMPROVE AND MODERNIZE DOMESTIC AND INTERNATIONAL FLIGHT SERVICE STATIONS, INCLUDING THE ESTABLISHMENT OF 60 UNMANNED FLIGHT SERVICE STATIONS.

4. $38.2 MILLION FOR AIR NAVIGATION FACILITIES TO MODERNIZE AND IMPROVE INSTRUMENT LANDING SYSTEMS AND OTHER LANDING AIDS, INCLUDING ESTABLISHMENT OF NEW SYSTEMS AT 23 LOCATIONS.

5. $18.5 MILLION UNDER AIRCRAFT AND RELATED EQUIPMENT, MOSTLY FOR PURCHASE OF NEW AIRCRAFT FOR FLIGHT INSPECTION USE. INCLUDED AMONG THE NEW AIRCRAFT ARE THE LAST LIGHT, TWIN-JETS FOR THE PROGRAM INITIATED IN PRIOR YEARS TO REPLACE AGING DC-3S AND T-29S. TOTAL SAVINGS WILL AMOUNT TO SOME $7.7 MILLION ANNUALLY WHEN FULLY IMPLEMENTED.

6. $17.3 MILLION, THE BALANCE, PROVIDES SYSTEMS SUPPORT FOR AIR TRAFFIC CONTROL NAVIGATION FACILITIES, STANDBY ELECTRICAL POWER AT CRITICAL FACILITIES, REPLACEMENT OF MOBILE ENGINE GENERATORS, AND IMPROVEMENTS TO DEVELOPMENT, TEST AND EVALUATION FACILITIES.

THE HOUSE HAS REDUCED THE APPROPRIATION REQUEST BY $8.9 MILLION: $6.7 MILLION RELATES TO THE AIR TRAFFIC CONTROLLER TRAINING ON NEW AUTOMATED EQUIPMENT AND $2.2 MILLION FOR PROCUREMENT FOR A LIGHT JET FLIGHT INSPECTION SIMULATOR TO BE USED FOR TRAINING FLIGHT INSPECTION PILOTS AND TECHNICIANS. WE ARE REQUESTING RESTORATION OF THIS TOTAL REDUCTION.

ALTHOUGH WE NO LONGER ENVISION THE USE OF DEDICATED AIR TRAFFIC CONTROL TRAINING SIMULATORS IN FIELD FACILITIES, THE TERMINAL AND EN ROUTE SYSTEMS HAVE AN INHERENT CAPABILITY OF PROVIDING SIMULATOR TRAINING THROUGH ADDITION OF ISOLATED TRAINING POSITIONS. ACCORDINGLY, THE $6.7 MILLION IS NEEDED TO PURCHASE ADDITIONAL DISPLAY EQUIPMENT, DATA AND POWER CABLES, AIR CONDITIONING AND INSTALLATION COSTS TO EQUIP ALL OF OUR EN ROUTE CENTERS AND MAJOR TERMINALS.

WITH REGARD TO THE PROCUREMENT OF THE LIGHT-TWIN JET FLIGHT SIMULATOR, THE FAA HAS LONG-TERM REQUIREMENTS FOR A SIMULATOR WITH ALL THE TECHNICAL FEATURES NEEDED TO TRAIN FLIGHT INSPECTION PILOTS AND TECHNICIANS. FAILURE TO PROVIDE PROCUREMENT AUTHORIZATION WOULD REQUIRE ADDITIONAL FLIGHT INSPECTION AIRCRAFT OR TRAINING BY CONTRACT. THERE IS NO GUARANTEE THAT THIS HIGHLY SPECIALIZED TRAINING COULD BE PROVIDED BY A CONTRACTOR OR THAT HIS PRICE WOULD BE REASONABLE, SINCE THERE APPEARS TO BE ONLY ONE POTENTIAL SUPPLIER OF THIS TRAINING. ACCORDINGLY, RESTORATION OF THIS AMOUNT IS REQUESTED IN ORDER THAT THE AGENCY MAY LOOK AT ALL LEGITIMATE OPTIONS IN OBTAINING THIS TRAINING. ALTHOUGH THE FAA STUDIES HAVE INDICATED THAT $500,000 WOULD BE SAVED ANNUALLY BY USE OF AN AGENCY-OWNED SIMULATOR OVER CONTRACT-PROVIDED TRAINING, WE WOULD CONSIDER BOTH OPTIONS IN GOOD FAITH WITH ALL INTERESTED SUPPLIERS AND REPORT OUR DETERMINATIONS TO THE APPROPRIATE COMMITTEES OF CONGRESS BEFORE TAKING FINAL ACTION.

WE ARE REQUESTING DELETION OF THE RESTRICTIVE LANGUAGE ADDED TO THIS APPROPRIATION BY THE HOUSE WHICH PREVENTS CONSOLIDATION OF CERTAIN FLIGHT SERVICE STATIONS. THIS RESTRICTION WILL INHIBIT THE FAA FROM EXPANDING THE SERVICE CAPABILITIES IN AN EFFICIENT MANNER AND IMPROVING THE LEVEL OF SERVICE TO PILOTS THROUGHOUT THE NATION. I WOULD LIKE TO EMPHASIZE THAT UNDER THIS PLAN NO LOCALITIES WILL SUFFER LOSS OF ESSENTIAL SERVICES. WHAT WE ARE TALKING ABOUT HERE IS A PLAN UNDER

WHICH WE WOULD SHIFT AND POSSIBLY PROMOTE PEOPLE FROM LOCATIONS WITH AN AVERAGE OF ONE TELEPHONE REQUEST EVERY HOUR AND ONE-HALF, TO LOCATIONS WHERE THESE SPECIALISTS COULD ANSWER THE 90 TO 100 TELEPHONE CALLS PER DAY THAT PRESENTLY GO UNANSWERED. OUR PLANNED PROGRAM IS ORDERLY AND PROPERLY PACED WITH CONCURRENT ADVANCES IN TECHNOLOGY TO ASSURE THAT SAFETY OR QUALITY OF SERVICES WOULD NOT BE JEOPARDIZED.

RESEARCH, ENGINEERING AND DEVELOPMENT (AIRPORT AND AIRWAY TRUST FUND)

WE REQUESTED NEW OBLIGATIONAL AUTHORITY OF $70.0 MILLION IN THIS APPROPRIATION.

OF THIS TOTAL, $53.2 MILLION PROVIDES IMPROVEMENTS AND EXPANDS AUTOMATION OF THOSE SYSTEMS REQUIRED TO PERFORM MODERN AIR TRAFFIC CONTROL FUNCTIONS. OUR OBJECTIVES ARE TO MAKE AIR TRAVEL SAFER, INCREASE THE EFFICIENCY OF THE TRAFFIC CONTROL SYSTEM, REDUCE COSTS, AND MAINTAIN THE TECHNOLOGICAL MOMENTUM OF THE AGENCY'S ENGINEERING AND DEVELOPMENT PROGRAMS. FAA PLANS INTENSIFIED DEVELOPMENT IN ADVANCED AIRCRAFT RADAR BEACONS (DISCRETE ADDRESS), INTEGRATED GROUND-BASED COLLISION CONTROL SYSTEMS, DEVELOPMENT OF SYSTEMS FOR THE DETECTION AND AVOIDANCE OF AIRCRAFT WAKE VORTICES, ENHANCED EN ROUTE AND TERMINAL AUTOMATION SYSTEMS, EFFICIENT COMMUNICATION NETWORKS, AND THE EXPERIMENTAL COMMUNICATIONS/ SURVEILLANCE SATELLITE (AEROSAT).

IN NAVIGATION, WE PROPOSE TO ALLOCATE $14.0 MILLION FOR DEVELOPMENT OF LANDING AND NAVIGATION SYSTEMS, OF WHICH $11.0 MILLION WILL BE DEDICATED TO WORK ON LANDING SYSTEMS. PRIMARY ATTENTION IS ON THE JOINT DOT/NASA/DOD EFFORT ON A MICROWAVE LANDING SYSTEM (MLS) AS A UNIVERSAL REPLACEMENT FOR THE CURRENT INSTRUMENT LANDING SYSTEM. DURING THE CURRENT FISCAL YEAR, WE ARE COMPLETING TESTS AND EVALUATION OF FEASIBILITY MODELS. PHASE III OF THE PROGRAM, DEVELOPMENT AND EVALUATION OF PROTOTYPE SYSTEMS, BEGINS IN FY 1975. WE ANTICIPATE THAT ICAO WILL EVALUATE THIS SYSTEM IN FY 1976, AS A CANDIDATE FOR

REPLACING CONVENTIONAL LANDING SYSTEMS AS THE INTERNATIONAL STANDARD. THE OTHER $3.0 MILLION FOR NAVIGATION WILL BE APPLIED TO DEVELOP EQUIPMENT FOR EN ROUTE AREA NAVIGATION NETWORKS AND TO ASCERTAIN FEASIBILITY OF ADAPTING VERY LOW FREQUENCY NAVIGATION SYSTEMS TO OPERATIONAL REQUIREMENTS.

THE BALANCE OF THIS REQUEST ($2.8 MILLION) CONTRIBUTES TO A COORDINATED TRANSPORTATION/DEFENSE/COMMERCE WEATHER INFORMATION PROGRAM TAILORED FOR PILOTS AND CONTROLLERS, AND AEROMEDICAL RESEARCH ON IMPROVING EFFICIENCY, PERFORMANCE, AND WORK ENVIRONMENT OF AIR TRAFFIC CONTROLLERS.

THE HOUSE ALLOWANCE PROVIDES $55 MILLION, A REDUCTION OF $15 MILLION FROM OUR REQUEST. ALTHOUGH THE NATURE OF THIS REDUCTION WAS NOT SPECIFIC, THE HOUSE COMMITTEE DID REPORT THAT NO PART OF THIS REDUCTION WAS DIRECTED TOWARD FAA'S FLIGHT SERVICE STATION AUTOMATION PROGRAM. THE COMMITTEE REPORT ALSO NOTES THAT THE FULL AMOUNT REQUESTED FOR WAKE VORTEX WAS APPROVED. THE GENERAL THRUST OF THE COMMITTEE'S EXPLANATION APPEARS TO BE THAT FAA'S REPORT TO THE CONGRESS ON CURRENT R&D AND F&E PROGRAMS, AS RELATED TO AIRPORT CAPACITY, DID NOT CITE PROBLEMS WHICH REQUIRE A LARGE AMOUNT OF ENGINEERING AND DEVELOPMENT. WE BELIEVE THIS IS AN INCORRECT INTERPRETATION OF THE CONCLUSIONS AND RECOMMENDATIONS OF THAT REPORT. THE $70 MILLION REQUESTED FOR THIS APPROPRIATION IS SIGNIFICANTLY BELOW THE AVERAGE OF $100 MILLION AUTHORIZED FOR ENGINEERING AND DEVELOPMENT BETWEEN FY 1972 AND 1974, DESPITE THE FACT THAT MAJOR DEVELOPMENT FOR THE UPGRADED THIRD GENERATION AIR TRAFFIC CONTROL SYSTEM OF THE 1980S AND 1990S ARE NOW IN OR APPROACHING KEY AND CRITICAL FUNDING PHASES. WE HAVE MADE SIGNFICANT ECONOMIES IN THIS EFFORT. THE HOUSE REDUCTION AGAINST A FUNDING LEVEL ALREADY LOWERED BY $30 MILLION WOULD TOTALLY DISRUPT THE SCHEDULE FOR UPGRADING THE SYSTEM NECESSARY TO CONTROL THE AIR TRAFFIC OF THE 1980S AND 1990S, AND HALT OTHER EFFORTS VITAL TO CONTINUED IMPROVEMENT OF THE PRESENT SYSTEM.

AMONG THE SERIOUS EFFECTS OF THE REDUCTION WOULD BE A ONE-YEAR DELAY IN STARTING MAJOR CONTRACTOR DEVELOPMENT ON THE ADVANCE RADAR BEACON SYSTEM (DABS) AND THE CONCOMITANT SYSTEM FOR COLLISION AVOIDANCE, KNOWN AS INTERMITTENT POSITIVE CONTROL (IPC). THIS IMPORTANT WORK WILL ENHANCE SAFETY BY ELIMINATING INTERFERENCE BETWEEN AIRCRAFT REPLIES IN HIGH DENSITY AIRPORT TERMINALS AND REDUCING CONTROLLER AND PILOT WORKLOAD. IT PROMISES DRAMATIC IMPROVEMENT IN SAFE OPERATION OF AIRCRAFT BY MAKING POSSIBLE A NEW SEPARATION SERVICE IN MIXED AIRSPACE. THE HOUSE ALLOWANCE WOULD ALSO REQUIRE SIX MONTHS DELAY IN AWARDING CONTRACTS FOR THE FINAL DEVELOPMENT PHASE OF THE MLS THAT MIGHT COMPROMISE THE U.S. POSITION OF LEADERSHIP IN THE INTERNATIONAL COMPETITION TO SELECT A REPLACEMENT FOR CURRENT LANDING SYSTEMS.

AS A FURTHER NOTE, I WOULD POINT OUT THAT FAA HAS ALREADY ACCOMPLISHED MUCH TOWARD SATISFYING THE HOUSE COMMITTEE CONCERN THAT THE AIR TRAFFIC SYSTEM DEVELOPMENT RESPOND TO USER NEEDS, AND ITS RECOMMENDATIONS FOR CONSULTATION TO IDENTIFY AND AGREE UPON APPROPRIATE MEASURES AND ACTION PROGRAMS. CONSULTATION HAS GREATLY EXPANDED DURING THE LAST YEAR WITH REGARD TO ON-GOING DEVELOPMENT, AND USER RECOMMENDATIONS ARE BEING GIVEN FULL WEIGHT IN FAA DECISIONS. WE UNDERSTAND THERE IS SUBSTANTIAL USER SUPPORT FOR THE ENGINEERING AND DEVELOPMENT ACTIVITIES WHICH FORM THE BACKBONE OF THE AIRPORT CAPACITY STUDY.

WE URGENTLY REQUEST RESTORATION OF THE ENTIRE REDUCTION IN THE RESEARCH, ENGINEERING AND DEVELOPMENT APPROPRIATION TO AVOID POSTPONEMENT OF FAA EFFORT TO INCREASE SAFETY OF OPERATIONS THROUGHOUT THE SYSTEM, REDUCE AIR TRAFFIC DELAYS AND CONSTRAIN THE COSTS OF SYSTEM OPERATION. THIS FUNDING IS CONSISTENT WITH THE AIRPORT CAPACITY STUDY, WHICH CONTEMPLATED ALL THE ACTIONS PROPOSED BY THIS BUDGET IF BADLY NEEDED AIRPORT CAPACITY IS TO BE ACHIEVED.

AIRPORT AND AIRWAY TRUST FUND

FOR FY 1975, ESTIMATES REFLECT $1,220 MILLION AVAILABLE FOR TRUST FUND PROGRAMS. IT INCLUDES $269 MILLION NOT COMMITTED AT THE END OF FY 1974, PLUS NEW REVENUES FROM AVIATION USER FEES OF $951 MILLION. REQUESTED APPROPRIATIONS AND NEW GRANT COMMITMENTS UNDER THE TRUST FUND IN 1975 TOTALLED $643 MILLION FOR THE PREVIOUSLY DISCUSSED GRANTS-IN-AID FOR AIRPORTS, FACILITIES AND EQUIPMENT, AND RESEARCH, ENGINEERING AND DEVELOPMENT. THIS WOULD HAVE LEFT AN UNCOMMITTED BALANCE OF $577 MILLION IN THE TRUST FUND AT THE CLOSE OF THE YEAR. IN ADDITION, THERE WILL BE AN UNAPPROPRIATED BALANCE OF $678 MILLION, COMMITTED BY LAW TO LIQUIDATE AIRPORT DEVELOPMENT OBLIGATIONS AND COMMITMENTS. BUT, THE OTHER $577 MILLION WOULD BE SURPLUS.

THE ADMINISTRATION HAS SEPARATELY PROPOSED LEGISLATION TO APPLY CONTRIBUTIONS OF CIVIL USERS OF THE AIRWAY SYSTEM MORE IN LINE WITH THEIR SHARE OF COSTS. THIS INVOLVES ESSENTIALLY TWO STEPS: (1) FUND A SHARE OF SYSTEM OPERATIONS FROM USER FEES, AFTER RESERVING SUFFICIENT FUNDS TO FINANCE CAPITAL INVESTMENTS AUTHORIZED BY THE AIRPORT AND AIRWAY DEVELOPMENT ACT; (2) FUND FROM GENERAL REVENUES THAT SHARE OF BOTH CAPITAL AND OPERATING COSTS REPRESENTATIVE OF MILITARY AND CIVIL GOVERNMENT USE OF THE SYSTEM. FOR FY 1975, THE INCREASED CHARGE TO THE TRUST FUND WOULD BE $1,398.5 MILLION TO BE MET FROM THE $576.8 MILLION UNCOMMITTED BALANCE AND A FEDERAL PAYMENT OF SOME $821.7 MILLION. THE LATTER WILL COVER THE FEDERAL GOVERN-MENT'S CIVIL AND MILITARY USE OF THE AIRWAY SYSTEM, FULL COSTS OF FAA'S REGULATORY AND ADMINISTRATIVE FUNCTIONS, AND THE SHORTFALL IN USER TAX REVENUE WHEN COMPARED TO USER-GENERATED COSTS. ALTHOUGH WE ARE HAPPY TO DISCUSS THE ADMINISTRATION'S TRUST FUND PROPOSAL, IT WOULD, OF COURSE, REQUIRE CHANGE IN OUR SUBSTANTIVE LEGISLATION. IT IS NOT REFLECTED IN, OR NECESSARY TO, THE BUDGET REQUESTED HERE TODAY.

HIGHLIGHTED STATEMENT

Mr. BUTTERFIELD. All right. Thank you, Mr. Chairman I believe the recorder has the full statement, but I would like to take a moment to highlight it, as you say.

I am glad, of course, to have the opportunity to appear once again before this particular subcommittee. While you will not always share our conclusions, I think you, at least, give knowledgeable and thoughtful attention to FAA's proposals and appeals and most of your members have given that same thoughtful attention to aviation's problems and opportunities.

I should begin, I think, by assuring you that the 1975 budget estimate before you today reflects my best judgment as to the resources required to implement and sustain the FAA programs, all of which incidentally are geared either directly or indirectly to the enhancement of safety and efficiency in the national airspace system, as well as to the promotion of U.S. civil aviation and air commerce both at home and abroad.

Those, in my mind, are two of our most important missions. The direction of FAA today, more than it has ever been before, is toward the accomplishment of the FAA mission and not to the devotion of time and energies to other things.

Because aviation activity and the FAA's workload are so closely related, I believe it would be useful and appropriate for me to comment on this workload and this activity, as we see it, projected through 1975, particularly as it is or as it may be impacted by the energy situation. The annual traffic count and forecast reflected in the 1975 budget figures were issued last September, as the basis for this coming year's budget estimates. As the result of last winter's energy problems, we did recognize in October, November, and December of 1973, some early short-term changes in aeronautical activity. Consequently, we reduced staffing growth in the budget request to reflect this preliminary December 1973 assessment.

Although we normally schedule the exhaustive survey of aviation activity only once each year, this whole energy situation warranted, we felt, a special update of that assessment. In other words, we needed a more current assessment of the impact of aviation activity and thus on the FAA workload. Our analysis indicated that the reduction in aeronautical activity is expected to be short term and will not, in our judgment, significantly affect the long-term outlook in aviation.

Now, these latest forecasts support the adjusted staffing levels which are included in our budget request and they confirm our preliminary assessment.

The indications at this point are that the cost of fuel, rather than the availability of fuel, will become the dominant consideration in the impact on future aeronautical activities. Yet, even now fuel prices appear to be stablizing. The record for air operations continues to reflect the continued emphasis we are placing on safety programs. For air carriers, the total accidents decreased from 50 in 1972 to 41 in 1973. That is a low for the last 25-year period. That is a low for the last quarter century. With the significant increase in flight hours, these

figures resulted in an overall accident rate of 0.613 accidents per 100,000 aircraft hours flown. That is down from 0.793 from the year prior.

However, there was a slight increase in the fatal accident rate. It went from 0.127 in 1972 to 0.138 in 1973. But again, the total accident rate was down in the air carrier category.

In the general aviation category, the total accident decreased from 4,228 to 4,180 in 1973. That is the lowest, Mr. Chairman, in 17 years. Again, with the significant increase in hours flown by the general aviation participants, the total general aviation accident rate fell from 15.4 for 100,000 aircraft hours flown to 14.8 accident for 100,000 aircraft hours flown in 1973.

At the same time, the fatal accident rate dropped, too. It went from 2.52 in 1972 to 2.49 in 1973. So there is very definitely a good trend, a favorable trend in the accident-rate area.

SIGNIFICANT ACCOMPLISHMENTS

Some of our other significant accomplishments which have been achieved in large measure through the support and resources provided by this committee and the Congress in the whole, include the following. During 1973, we initiated a number of program activities to enhance safety of operation including: (1) strengthening of regulations for dealing with transportation of hazardous materials. I think we have done a good bit in that field, and we can hold our heads high. (2) we have introduced a new concept for operational training of pilots which places full responsibility for all phases of the required training on the flight instructor and otherwise upgrades pilot training and testing. (3) we have revised regulations to require that large and turbine-powered, multiengine, general aviation airplanes be maintained on what we are calling a continuous inspection program. That is in lieu of annual, 100-hour or progressive inspections. (4) we have developed in cooperation with the Department of Defense a new program to inspect surplus military aircraft for standard airworthiness prior to allowing the Department of Defense to sell those aircraft. (5) we have revised standards for FAA certification of ground schools, flying schools and pilot training courses. This is an amendment to our part 141 of the Federal Aviation Regulation.

In September of 1969, as I am sure you know, the FAA issued a notice of proposed rulemaking for control or segregation of all aircraft operating within airspace designated as Terminal Control Areas. Aircraft operating under this concept would enhance air safety because they would be under positive control. This program has been established at nine of the busiest air terminals, referred to as group I TCA's, or Terminal Control Areas. Other less busy terminals have now been designated as group II. At the group II TCA's, we have less stringent pilot and equipment requirements. Positive control procedures are being implemented at these locations during this year, 1974.

Not to belabor this, but it is really our business, and I would like to say in summary that with the implementation of TCA's; with the amendment of part 61 which puts greater emphasis on pilot training and instructor proficiency; with the amendment of part 141

pertaining to pilots training schools; with the new engine inspection procedures; with the new spirit of cooperation from the Department of Defense with regard to sale of surplus aircraft; with the continuation of all our accident prevention programs which are many and varied, incidentally; with the reorganization which has just transpired in the FAA headquarters, placing all responsibility and safety-related items under one man; with an increase of some 38 percent in our consultive planning effort over previous years and a number of other things—and I might add with a new attitude and new spirit within the FAA—I can say without any hesitation that aviation safety is going to be increasingly affected in a beneficial way.

AIRCRAFT HIJACKINGS

We have experienced the longest period—on a new subject—without a successful hijacking of a U.S. aircraft, in more than 6 years. That can be directly attributed to the strengthened civil aviation security measures required by Federal Air Regulations and negotiations of an agreement with Cuba. That was significant. Federal emphasis in 1975 will increase attention on the overseas aspects of antihijacking. We have recently proposed an additional regulatory action to guarantee comparable security for other nations' aircraft arriving in, departing from or operating within our borders. We also plan to make available our expertise to any nation which requests such technical assistance.

Senator BYRD. Mr. Butterfield, in connection with the use of X-ray devices as determinants for inspecting passengers with their belongings, has the court case brought by Mr. Nader against their use been settled yet?

Mr. BUTTERFIELD. It was in a hold status the last I knew. I would like to ask our chief counsel, Mr. Turner, to reply further to that.

Mr. TURNER. The matter in court was stayed. Judge Parker has stayed the injunction pending the administrative procedure going forward. We have prepared an environmental assessment. We have issued notice of proposed rulemaking and I think August 20 is the last day for comment. That will implement the matter and permit the proceedings to be finalized.

Senator BYRD. What was the rationale for Mr. Nader's case?

Mr. BUTTERFIELD. He felt the machines were not safe in the long-term for those who handle or work with them.

Senator BYRD. The radiation?

Mr. DOW. Essentially, he took the position that we had not promulgated the notice of proposed rulemaking and made the notice public. But, initially the machines had to comply with State regulations. Now, the Bureau of Radiological Health in the Department of Health, Education, and Welfare came out with its standards. We have applied the Bureau's standards to the machines. In fact, those machines that did not meet the Bureau's standards have been removed from service. So as chief counsel says, we have published a notice of proposed rulemaking on the use of the X-ray devices. I feel sure that will permit disposition of the case.

Senator BYRD. Thank you. Go ahead.

Mr. BUTTERFIELD. In cooperation with the Law Enforcement Assistance Administration, the FAA is expanding training of American and foreign personnel in passenger screening and airport security. We have instituted a 7-point fuel conservation plan within the FAA which, we feel, is saving up to 20,000 barrels or 840,000 gallons of jet fuel each day.

REDUCTION OF AIRCRAFT NOISE AND ENGINE EMISSIONS

I can report, too, several important actions to reduce aircraft noise. Our responsibility incidentally, to reduce aircraft noise, is one which we take seriously; and we are working more closely now with the EPA than we have ever before.

We have an advance notice of proposed rulemaking to introduce a two-segment ILS noise abatement procedure, published in March of this year. Public comments on this proposal are now under review within the agency. A notice of proposed rulemaking to retrofit older turbojet engines to meet FAR 36 noise levels was also published in March. Public comments on this proposal are under review. A rule prohibiting supersonic aircraft sonic booms while overflying the United States was published, I believe, in April of 1973. That was one of the first rules I signed after assuming this post.

We have similarly been energetic in reducing engine emissions with the following actions: A special FAR to retrofit smokeless combustors on the JT8D engines used by the airlines on B–727, B–737, and DC–9 aircraft. This special FAR would also ban fuel venting from turbine engines.

We have put out an advisory circular recommending shutdown of one or more three- or four-engine turbojets while taxiing into terminals after landing. The cumulative effect will be significant.

TERMINAL AUTOMATION

In the terminal automation program, 62 large, what we call ARTS III, systems are presently in use. Fifty-nine are controlling traffic in terminal facilities. Two are being used for research, engineering and development at our National Aviation Facilities Experimental Center at Atlantic City, N.J. One is being used for training at the FAA Academy in Oklahoma City. Two remaining systems are installed and expected to be in operation when associated facility modification projects are completed this year.

We have initiated a major updating effort to insure that the airworthiness regulations are consistent with the state of the art. It will provide for full and effective consultation with industry as well as with airworthiness authorities in foreign countries. We hope to promote international consideration in the field under U.S. leadership. I would like to interject that I consider this to be one of the most, if not the most significant announcement that we have made this year. We made the announcement on February 12. An 8-day airworthiness review conference will be held in December, proposed rules published in May 1975 and rules adopted in February 1976. This is a 2-year project but it will finally bring the airworthiness rules up to the state of the arts. It will be the first time in 14 or 15 years that the FAA has undertaken this kind of a comprehensive review program.

GRANTS-IN-AID FOR AIRPORTS

Under the grants-in-aid for airports program, our preliminary data shows that $300 million was obligated for development grants in fiscal year 1974. Of this $300 million, $259 million, representing 467 projects, was for improvements at air carrier and general aviation reliever airports, and $41 million representing 178 separate projects, covered improvements at airports used solely for general aviation.

PROGRAM IMPROVEMENTS

Changes in FAA programs which have been designed to improve its efficiency and effectiveness include these actions: establishment of a national flight inspection field office to centralize responsibilities for flight inspection of air navigational facilities; reassessment of Alaska and Pacific headquarters' function with an overall reduction in staffing; and establishment, in the Washington headquarters, of the Associate Administrators for Safety, Airport, and Air Traffic and Airways Facilities in order to centralize responsibility and emphasize the importance we place on these activities. In other words, the air traffic business is now represented by a single associate administrator. All this goes to emphasize the importance we place on these particular agency programs.

The consultative planning business I mentioned a moment ago, I said we had increased our efforts in this area by about 38 percent over all previous years. This consultative planning to exchange, advise, and counsel the aviation communities is significantly contributing to our plans for the future. In addition to the annual aviation review conference, which we do hold every year, I have initiated an annual series of sessions—one each year with each of the various user groups which we call, incidentally, listening sessions, and also quarterly consultative planning conferences directed at such major issues as national aviation goals and priorities. We call these miniconferences.

So, in addition to what we had before, we now have eight listening sessions and four miniconferences each year. I also plan to meet periodically with selected key aviation executives. In fact, I do this now. I have made it a practice of meeting with a cross section of the top leaders in the aviation communities once every 8 weeks, with the exception of one period which was during the fuel crisis and was omitted due to that fuel crisis.

Our annual aviation review conference was held in early June to provide the users and public an opportunity to discuss policy, plans and promises. I really don't think that another agency in the Government is as open to the public as we are.

To promote aeronautical exports, we recently presented representatives of U.S. industry with FAA's analysis of the extent to which air navigation plans have been implemented in the African-Indian Ocean regions and the Pacific-Southwest Asia regions. Of course, meeting these plans rests with the countries whose airspace they cover, but FAA has at least undertaken to point out what deficiencies exist and to help U.S. industry make an entry into this big overseas market.

As I think you know, our mutual efforts to initiate an international program for evaluating and demonstrating the effectiveness of satellites in oceanic air traffic control systems was climaxed on May 6. On

that date, you authorized us to proceed with the Aerosat program in concert with Canada and the ESRO countries or European Space Research Organization countries. Three days later on May 9, I was priviledged to sign the memorandum of understanding which initiates Aerosat. I did that on a visit to London at the American embassy there, and now the first meeting of Aerosat council is to be held in mid-August. We are looking forward to signatures by the Canadian and ESRO representatives.

FISCAL 1975 APPROPRIATION REQUEST

Now, if I may, the fiscal year 1975 request for appropriations. To provide for fiscal year 1975, FAA's budget request includes $1,755.2 million in budget authority and 56,178 full-time, permanent positions. This was $131.3 million and 476 positions over our fiscal year 1974 budget, when adjusted to include the supplemental appropriation requested for the most recent Federal pay raises. In addition, the request includes $280 million to liquidate obligations incurred under contract authority for airport development grants provided in the Airport and Airway Development Act. The House action on the DOT bill reduced our request by $63.9 million.

We appreciate the understanding and consideration of our safety program which is reflected in the House committee recommendations. The House cut includes $22.5 million in operations, $16 million for engineering and development and $13 million in airport planning grants. Also included in the reduction by the House is $8.9 million requested for air traffic control and jet training simulators as well as $3.5 million for operation and construction requirements at Washington National and Dulles International Airports. We shall adjust our programs to accept $16 million of the total $64 million reduction, but we ask your aid in restoring $47.9 million. This loss, we feel, of $47.9 million would compromise our performance to an unacceptable degree.

By appropriation, we are asking the Senate to restore $15 million for Operations, $15 million for Research, Engineering and Development and half-a-million for the small facilities, Engineering and Development account, $3 million for construction at Dulles International Airport, $5.5 million for Airport Planning Grants and $8.9 million for Facilities and Equipment.

We are also asking the Senate to delete the language which would prohibit use of Facilities and Equipment appropriations to decommission flight service stations and general provisions banning user fees.

In summary then, Mr. Chairman, I believe the FAA's budget request provides the funds needed to support planning and programing of activities throughout fiscal year 1975. Along with my colleagues, I am prepared now to answer any questions.

Senator BYRD. Thank you, Mr. Butterfield.

Mr. Mansfield, do you have any questions?

AIRPORTS SERVICE STAFFING REDUCTION

Senator MANSFIELD. Thank you, Mr. Chairman. Thank you, Mr. Butterfield.

The Federal Aviation Administration proposed fiscal year 1975 budget indicates a reduction in staffing authorization in the airport service program from 729 to 580 in direct program positions. This amounts to 20 percent reduction.

In view of the interest of Congress in this program over the years, since the program started in 1947, and technical help as well as grant aid to communities, an explanation of the staffing reduction is in order. This is particularly true when viewed in light of the manner in which this program has been conducted—that is free of scandal. The program has enjoyed a good relationship with airport owners and operators. The $2 billion obligated in this program thus far represents a very significant investment of funds in the nation's airport system.

The 20 percent staffing reduction does not appear to be appropriate when we consider the actions that have taken place with the enactment of the Airport and Airway Development Act of 1970:

1. The scope of the program increased from a high of $75 million to $280 million, and the proposed level for fiscal year 1975 is $310 million.

2. Airport certification was added as a new responsibility of the FAA.

3. The planning grants program was started.

4. The National Airport System plan became more comprehensive.

In addition to these increases in program responsibilities, two new laws were enacted by the Congress which resulted in other additional workload and responsibilities for the airports programs. These were, one, the Relocation Assistance Act and, two, the National Environmental Act.

With all of these additional functions and responsibilities to perform and with a 10-fold increase in the scope of the program, the airports staffing has only increased from 647 positions to 729 positions.

It is difficult to understand why staffing reduction in the airports program is being proposed. It becomes more difficult to understand when we consider the fact that there are no legislative proposals to amend the present legislation to permit transfers of responsibilities to State and local governments. We are aware that the administration is favoring revenue sharing and block grants, all of which would reduce the scope and the staffing requirements of the program. But it is very difficult to understand why a large staffiing reduction is proposed before Congress is given amending legislation to consider.

It must be clear to all concerned that no exchanges such as a delegation of functions of the airports program to State or local organizations can take place unless Congress approves such changes. Also, only a small number of the 50 States are in a position to consider taking on additional airport development responsibilities at this time.

Now, for some fundamental questions. What phases or functions of the airports program, if any, are not being performed solely because of lack of staffing? What are the consequences, if any, of the failure to perform these functions?

Mr. BUTTERFIELD. Senator Mansfield, I think the best way for me to answer that at the outset, is to say that those are good questions. And precisely the kinds of things which we are pondering at the

moment. We are and have been doing everything that we can to streamline the FAA to cut costs and feel an obligation to do precisely that.

So, we are looking at such things, with regard to airport staffing, as closing or consolidating selected airport district offices to reduce overhead and to concentrate available manpower in fewer locations. I am not saying we are prepared to close these offices, nor am I saying we have made up our minds with regard to any specific locations. But it is something we are looking at. We are looking to reduce the number of engineering personnel in the engineering branches in the regional airport divisions to reduce management overhead. It has been apparent in some cases that the performance of programs in the past have been geared to meet some sort of maximum or extra requirements, requirements over and above the minimum required by law.

Over the past 10 to 15 years, we seem to have taken on these things as sort of good guys. Things that we did not really have to do. So we are again looking, as I mentioned in my statement, at ways and means of doing precisely what our mission indicates we should be doing, and nothing extra.

We are looking, too, at the possibility of delegating some things to States. But a point you made in your questioning is well taken, that there are not many States, as a matter of fact, which are fully capable of taking on some of these responsibilities.

I think Mr. Vitale, who is our Acting Associate Administrator for Airports, might be able to add something to this.

Mr. VITALE. In the normal conduct of the program, we constantly seek ways to improve efficiency in the way that we do business. We have been studying these things in such a manner, that, for instance, in certain regional headquarters we found some overlap in the review of the engineering services being performed at the district level. This is one of the reasons we are studying the possibility of moving most, if not all, of the engineering functions out of the regional headquarters into the district offices so that we don't perform this in a duplicative manner.

The agency has a task force that is ongoing right now that is studying this program. The task force is made up of two regional directors with the help of a third and two divisional chiefs in the field plus the Acting Deputy Director of Airports Service. This group has been meeting for some weeks and looking at the program to see if there can be an increase in overall efficiency in whatever case is conducted. I think I have covered it pretty well.

Mr. BUTTERFIELD. I would say one more thing—that safety very definitely will not be compromised in the airport program while placing greater emphasis on safety in all of the other programs. So, we are not trying to gear down at the expense of safety.

Senator MANSFIELD. If the staffing is reduced to 580 positions, will the FAA be able to meet goals in obligating funds? Will there be a loss in quality and timeliness of program actions?

Mr. VITALE. Naturally it is always our goal to obligate the full amount authorized by Congress and we have every hope we will be able to do this. In terms of the history of the program, we have met our obligational goal, I think, in all of the years that the ADAP program has been in being. We have every expectation that we will be able to continue this.

Senator MANSFIELD. With a 20-percent cut in personnel?

Mr. VITALE. We think with the improvements in the efficiency we can bring about by eliminating unnecessary functions, that we can bring this about, sir.

Senator MANSFIELD. But you always spend all the money allocated.

Mr. VITALE. Yes, sir. There was one year we didn't quite make the obligations set up since the program was enacted. We have come, I think, really close some of the time, in the high nineties.

Senator MANSFIELD. Did you make it a point to spend every single dime appropriated?

Mr. VITALE. Well, sir, the way it normally works is we have a number of requests and applications on hand far exceeding the obligating authority. So, it is not a matter of trying to spend every dime as much as it is trying to meet requests.

FAA POSITION REQUEST TO OST

Senator MANSFIELD. Has FAA made budget requests to DOT and OST for more than 729 direct positions in the airports program in any of the years starting with the fiscal year 1971 budget?

Mr. POTOSKY. Yes, sir, we have. The only data I have with me is fiscal year 1975. At that time, we asked the OST for 829 positions.

Senator MANSFIELD. For just the one year?

Mr. POTOSKY. Yes, sir. We probably asked for increases in prior years also.

Senator MANSFIELD. At what OST/OMB levels were the requests changed?

Mr. POTOSKY. I think the OST reduced us by 100 and authorized the same level for 1975 as we have for fiscal year 1974, which was 729 positions.

Senator MANSFIELD. Are more reductions in airports programs staffing proposed or contemplated beyond the 20-percent reduction in the fiscal year 1975 budget?

Mr. POTOSKY. No, sir.

CLOSING/CONSOLIDATION OF AIRPORT FIELD OFFICES

Senator MANSFIELD. What offices is the FAA considering closing or consolidating?

Mr. BUTTERFIELD. None specifically, if you are speaking of locations, sir.

Senator MANSFIELD. Do you have any in mind? You have a team out looking the projects over. Where have you been looking?

Mr. BUTTERFIELD. We have been looking nationwide.

Senator MANSFIELD. Where specifically?

Mr. BUTTERFIELD. I would call on Mr. Vitale to answer that.

Mr. VITALE. Well, sir, the staff has been working in Washington headquarters and they have been looking at the entire system which is comprised of 11 regions in 23 district offices to see what improvements can be made.

Mr. BUTTERFIELD. Have you been looking at some more than others? I think this is what Senator Mansfield is asking.

Mr. VITALE. It has been pretty much across the board, sir. There were several regions that thought they could make this consolidation; for instance, in the southwest region it is proposed to consolidate one small district office in the region headquarters. Also, in the Great Lakes region, one has been recommended for consideration only. This is only at staff level and we have not come to any conclusion on anything at all. Two district offices that could be recombined on a third location. It is this kind of thing. There have been some other recommendations conforming to something that has been done in a number of other regions where they do not have district offices. Six of eleven of our regions have district offices. The Rocky Mountain region gave some consideration to consolidating their district offices in regional headquarters. If it did so, it would follow the pattern in the Northwest, in the central region, in New England and Alaska and Pacific. The region is a combination of district and regional office.

But none of these things are final or conclusive. It is strictly the staff work to be considered in the interest of streamlining efficiency.

Senator MANSFIELD. You have no specific names in mind?

Mr. VITALE. No, sir.

HELENA, MONT., AIRPORT DISTRICT OFFICE

Senator MANSFIELD. You do not have Helena, Mont., in mind?

Mr. VITALE. No, sir. Helena is one of the district offices in the Rocky Mountain region, again looked at at the task force level. But it was looked at to see if there could be an improvement if they were consolidating at the regional level headquarters. But as a specific location to be eliminated in that kind of a sense, no.

Mr. BUTTERFIELD. I can tell you we haven't focused on any changes in the State of Montana to a greater degree than any other area.

Senator MANSFIELD. That is a pretty general answer, Mr. Butterfield. Do you have any specific areas in effect under the gun right now, including Helena, the capital of the State?

Mr. BUTTERFIELD. I think my answer was specific. I said——

Senator MANSFIELD. You said in general.

Senator BYRD. It wasn't specific, Mr. Butterfield. Why don't you lay the cards on the table and tell the Senator if his State is involved and whether Helena, Mont., is going to be cut back. I want to know the same thing about West Virginia.

Mr. BUTTERFIELD. That is precisely what I am trying to do. That is why I answered for Mr. Vitale.

Senator BYRD. We didn't get a direct answer from Mr. Vitale. What we want is a direct answer.

Mr. BUTTERFIELD. I will give you my assurance. This is what I mean by specific, Senator Mansfield and Senator Byrd.

Senator CASE. I would have you include Senator Case and Senator Stevens.

Mr. BUTTERFIELD. What I mean by specific is that no action will be taken. I haven't followed this to the degree that I can tell you precisely what has been considered up to now. But I can tell you this, no action will be taken in your States until I meet personally with you, if you would like that. That is as well as I can lay it out for you, Mr. Chairman.

Senator BYRD. I don't want any action taken in my State period. But if anything is going to take place there, I do want you to meet with me.

Mr. BUTTERFIELD. If any is contemplated, I will do so.

Mr. Vitale, have any actions been contemplated in the State of Montana?

Mr. VITALE. Sir, the only thing that has been done in Montana or any of the other locations such as West Virginia, is the overall look that is being made at all 23 district offices in all 11 regional headquarters to see if they can make improvements. These have not been singled out individually. It is a total system or office structure that is being looked at to see only if improvements can be made. It has not gone any further. It is a staff-level task force effort.

Senator MANSFIELD. You say, Mr. Vitale, that Helena is not under the gun?

Mr. VITALE. No, sir, it is not.

Senator MANSFIELD. It is not.

Mr. Dow. I think the direct answer to this is that the task force at the working level is looking at the system nationwide to identify locations that in their judgment may be closed or consolidated. I think if I have heard right, that one may be Helena. But none of the task force deliberations have been submitted to Mr. Vitale or the Administrator's level for action as yet. When the task force, at the working level makes alternative recommendations, they may list names.

Mr. BUTTERFIELD. But this is a certainty. We have absolutely nothing to hide whatsoever.

NUMBER OF ADO'S CONSIDERED FOR CONSOLIDATION

Senator MANSFIELD. How many names have been listed at the working level?

Mr. BUTTERFIELD. I don't know the answer to that.

Mr. VITALE. I don't have a total figure, Senator. There are 23 district offices total in the system now. I know that all of them are being looked at to see what improvements can be made as well as the airport divisions in each of the 11 regional headquarters. It is not that kind of a thing.

Mr. BUTTERFIELD. Mr. Vitale said all the districts in existence have been reviewed from the standpoint of colocating into fewer locations but nothing has come up to my level and no firm recommendations have been made at all.

Senator MANSFIELD. You have no figures of 5, 7, 9, 11, or 13 marked for reduction?

Mr. BUTTERFIELD. Mr. Vitale?

Mr. VITALE. No, sir. I know the committee has been working and doing this for review. But there are, as I say, 23 of the district offices. There were several locations where we have regional headquarters where there is also a district office. That is being reviewed subsequent to the one I mentioned before where they looked at some of those also.

Senator MANSFIELD. So you would say that Helena is in pretty good shape at the moment or is not in pretty good shape?

Mr. BUTTERFIELD. I was going to assure you it is in pretty good shape, that it hasn't been looked at closer than any place else. If Mr.

Dow has seen it on his list, I suggest we make that list out and forward it to you, although you would have to understand that it is at the lower level.

Senator MANSFIELD. Who is Mr. Dow?

Mr. BUTTERFIELD. He is the Acting Deputy Administrator.

Senator MANSFIELD. Well, Mr. Butterfield, I appreciate your offer to meet with the Chairman personally and the ranking Member and the Senator from Montana personally, should it be affected. But it is requested that before FAA takes any final action towards its airports, the staffing reductions that would result in the delegation of functions in States or local communities, the express approval of this Appropriations Committee be obtained. Not as far as the individual members are concerned, but this committee, Mr. Chairman.

In addition, it is requested that the committee be advised before any final action is taken to close, relocate, or merge any airport field offices.

Mr. BUTTERFIELD. That is as it should be, and that is understood.

Senator MANSFIELD. Thank you very much, Mr. Butterfield. Thank you, Mr. Chairman.

Senator BYRD. Thank you, Mr. Butterfield.

Senator Case, do you have any questions?

Senator CASE. Yes, Mr. Chairman.

QUESTIONS SUBMITTED BY SENATORS

Senator BYRD. While you are preparing, I have some questions from Senator Milton Young, which deal with this same subject area. I will submit them for the record and if you will respond in kind. Senator Stevens has some questions on the same subject. I will present those to you, and if you will respond, please, for the record. Senator Stevens of Alaska will be back shortly, and he will present his questions himself.

[The questions and answers follow:]

Q. How much money and personnel did the FAA request of DOT for fiscal year 1975 for its Airport Services branch?

A. FAA requested 829 positions and $18,792,000 from OST for fiscal year 1975.

Q. How much money and personnel did the DOT request of OMB for fiscal year 1975 for the FAA's Airport Services branch?

A. DOT requested 729 positions and $17,697,000 from OMB for fiscal year 1975.

Q. In his budget the President requested a cut of approximately 15% in the amount available for the operation of the Airport Services branch. The House of Representatives appropriated the amount requested by the President. But the House also included in Report 93–1111, a stipulation that the "FAA not . . . proceed with the delegation of any of its present functions to state and local governments without prior explicit approval from the Committee." Do you believe Airport Services will be able to perform its duties at the reduced level of appropriations without delegating any of its authority?

What impact do you think the budget reduction will have on the operation of Airport Services?

A. The President's budget proposes a reduction in position authorizations which amounts to approximately 20% or about 11.4% in funds.

With respect to possible delegation to state or local governments of authority to accomplish Airports program functions the FAA is aware that legislative change would be necessary before any substantive change could be made. Although the FAA is studying several possibilities in keeping with the President's New Federalism concepts, none at this point are at a stage where such legislative change is about to be requested.

Therefore, the FAA Airports program during FY 1975 will have to be accomplished without delegating authority to state or local governments, irrespective of whether such proposals may be presented in the future.

The agency is still considering exactly what impact the budget reduction would have on Airports program operations. While it is not possible to answer precisely at this time, among prospects being considered are:

1. *Reduction in certain engineering activities.*—Reducing the number of inspections of construction under ADAP; holding FAA review of construction plans and specifications to the minimum; discontinuance of airport pavement evaluations; reducing the provision of technical advisory services—particularly where grants are not involved; applying stringent priorities to development or update of airport standards; elimination of regional review of district office engineering decisions;

2. *Limitation of the program to assure sponsors' compliance* with terms of agreements under which they accepted Federal assistance to a response to complaints basis, rather than annual investigations;

3. *Restriction of response to requirements of the Relocation Assistance Act* to consideration of sponsor's certification that he is fulfilling relocation assistance requirements;

4. *Limitation of collection of airport facility data* to using state data collection where such is accomplished as part of an airport planning grant or where the state is involved in a cooperative program with the FAA, or where neither of the foregoing exists, to obtain airport data on a centralized, mail program in which airport managements will complete and mail in data to FAA; and

5. *Administration of the Airport Development Aid Program.*—In the ADAP program the demand for assistance has been so great that there was a large carryover (258 projects for $138.0 million in allocations and 432 projects for $314 million in requests) from FY 1974 so that it appears that the expected FY 1975 levels can be reached. Our regional offices have estimated a demand for well over $600 million in ADAP funds during FY 1975.

We have considered the advisability of reducing efforts to promote grants which translate national airport system needs into active projects. Additionally, we have considered accepting the airport sponsor's certification that he is meeting all legal requirements for the Uniform Relocation and Real Property Acquisition Policy Act of 1970 rather than monitoring his actions.

To the extent that alternatives open to the FAA in other areas do not permit us to meet the program reduction otherwise, we have considered that there may be an impact on the ability of the agency to carry out the ADAP program at the full levels called for in the Airport/Airway Act.

All of the above described functions—as are other Airports program functions—are carried out in response to statutory requirements.

It should be kept in mind that the foregoing and other program simplification or manpower utilization items which may come up are strictly in the stage of staff consideration at this juncture, but we believe that this description indicates the type of belt-tightening which must be considered.

Q. In Fiscal Year 1974 Congress authorized 729 positions for airport services activities. This year we notice you are taking a reduction of 149 positions. I have a number of questions concerning this reduction.

1. Would you tell the Committee how you are able to make a reduction of this magnitude?

2. Will this reduction impact on your ability to obligate development and planning grants?

3. Will it delay your review of grant applications?

4. What other program responsibilities will be affected by this reduction? More specifically, will it affect airport safety?

5. The House Committee directed you not to proceed with the delegation of any of your present functions to state and local governments without previous approval from the Committees. Are you still able to make a position reduction of this magnitude in view of this restriction?

6. If you take the 149 position reductions, will it affect your Airport District Offices in localities such as my state and other localities throughout the 50 states?

Where will these reductions be made and what effect will they have on each Airport Diistrict Office?

7. Will you submit for the record the exact number of positions you requested for airports activities from the Office of the Secretary of Transportation and the Office of Management and Budget?

A. 1. The FAA will make a number of program changes, described in responses to other questions from members of the Committee, to simplify, defer, reorder or abolish workload.

2. Because of a large carryover from FY '74 of ADAP allocations and of unallocated but reviewed requests, it is possible that the agency may be able to meet its obligation targets. Certainly we will try very hard—particularly since the demand for assistance is very high—well over $600 million at latest estimate.

3. Again, because of the large carryover the agency will have a better chance than otherwise to review grant applications without serious delay. There may be delays in reviewing new applications for FY 1976, assuming that the grant programs continue beyond FY 1975.

4. The detailed answer to this question is the same as that provided in answer to Senator Adlai Stevenson.

With respect to effects upon airport safety, the FAA will continue to give highest priority to all aspects of safety and will do all it can not to permit any derogation of safety. Generally the deferment of an airport development, for instance, would have the effect of limiting usage of an airport, in part to assure safety in operations.

5. This restriction itself should have no effect on the manner in which the Airports program is accomplished during FY 1975 because any substantive delegation to state or local governments would require legislative change and it is unlikely that any change being considered will progress through the legislative process to become law during this fiscal year. In any event the FAA/DOT would have ample consultation with the Congress in such a process.

6. Except for limited staff consideration—along with many other possibilities for dealing with a position reduction—the FAA has not finalized plans to close any of the 23 Airports District Offices, except that the Fort Worth, Texas, ADO has been consolidated with the Southwest Regional Office Airports Division located in the same city.

Until decisions are made as to exactly which functions will be affected and how, it will not be possible to state exactly what the effect will be on a given Airports District Office. However, it is to be expected that position reductions will be required at each level of the Airports program organization—Washington, regional headquarters, and field offices.

7. We requested 829 positions from the Office of the Secretary of Transportation for fiscal year 1975. 729 positions were requested from the Office of Management and Budget.

COMMUNICATION AND ATTACHMENTS

Senator CASE. Thank you, Mr. Chairman.

Senator BYRD. By the way, when do you expect this list to surface, Mr. Administrator?

Mr. BUTTERFIELD. If the list exists, it will surface immediately, sir.

Senator BYRD. Fine. Let's see if we can find that list and see where we stand as soon as we can. You will let us know.

Mr. BUTTERFIELD. We will give you a status report within a week's time.

Senator BYRD. Senator Case.

Senator CASE. Mr. Chairman, first before I begin with my questions, may I ask that there be inserted in the record a letter from Senator Young to me of June 4 and attachments to it on the matter of the cuts to the airports division particularly with respect to the Municipal Airport Authority of Fargo.

Senator BYRD. If there is no objection, it will be included.

[The letter and attachments follow:]

LETTER FROM SENATOR MILTON R. YOUNG

U.S. SENATE,
COMMITTEE ON APPROPRIATIONS,
Washington, D.C., June 4, 1974.

Hon. CLIFFORD P. CASE,
Subcommittee on Transportation and Related Agencies, Appropriations Committee, U.S. Senate, Washington, D.C.

DEAR SENATOR CASE: Thank you for your letter of May 28.

With further reference to the proposed cuts in staffing for the Airports Division of FAA, I am enclosing a copy of the resolution I have just neceived from the Municipal Airport Authority of Fargo, North Dakota, also adamantly opposed to these cuts.

With warm personal regards,
Sincerely,

MILTON R. YOUNG.

MUNICIPAL AIRPORT AUTHORITY OF THE CITY OF FARGO

The Regular Meeting of the Municipal Airport Authority of the City of Fargo, North Dakota was held in Room 203 at Hector Airport at 4:00 p.m., Monday, May 13, 1974.

The members present or absent were as shown following:

Present: Springer, Schuster, Horvik, O'Day and Gallagher.

Absent: None.

Chairman Gallagher presiding.

* * * * * * *

RESOLUTION IN SUPPORT OF CONTINUING STAFFING OF FEDERAL AVIATION ADMINISTRATION'S AIRPORTS DISTRICT OFFICE IN BISMARK, NORTH DAKOTA

Mr. Schuster offered the following Resolution and moved its adoption:

Whereas, We have been advised of a possible cutback in funds required to properly man the Airports District Office serving North Dakota, and

Whereas, Any reduced staffing, or possible elimination of this office, would severely affect all air carrier and general aviation airports in North Dakota.

Now, Therefore, be it *Resolved*, That the Municipal Airport Authority of the City of Fargo, North Dakota vigorously opposes any cutback in aviation services under the Federal Aviation Administration system, and

Be it further *Resolved*, That the North Dakota Congressional delegation be advised of this action and request that they do everything in their power to protect the Airports in North Dakota that would seriously be affected if this funding cutback were allowed to be accomplished.

Be it further *Resolved*, That this Resolution be inscribed upon the permanent minutes of the Municipal Airport Authority of the City of Fargo, North Dakota and that a certified copy of said Resolution be forwarded to the members of the North Dakota Congressional delegation.

Seconded by Horvik.

On the question of the adoption of the Resolution members Schuster. Springer, Horvik, O'Day and Gallagher voted aye.

Absent and not voting: None.

The Resolution was declared duly passed and adopted.

* * * * * * *

CERTIFICATE OF SECRETARY MUNICIPAL AIRPORT AUTHORITY

STATE OF NORTH DAKOTA
County of Cass

I, Joseph T. Parmer, do hereby certify that I am the duly appointed, qualified, and acting Municipal Airport Authority Secretary of the City of Fargo, North Dakota, and

That the foregoing is a full, true and correct copy of a Resolution adopted by the Municipal Airport Authority of the City of Fargo, North Dakota, at the

Regular Meeting of the Municipal Airport Authority held on Monday, May 13, 1974, and

That such Resolution is now a part of the permanent records of the Municipal Airport Authority as such records are filed in the Office of the Airport Manager.

JOSEPH T. PARMER,
Secretary, Municipal Airport Authority.

LETTER FROM SENATOR CLIFFORD P. CASE

MAY 28, 1974.

Hon. MILTON R. YOUNG,
Dirksen Office Building,
Washington, D.C.

DEAR SENATOR YOUNG: Thank you for your recent letter concerning proposed cutbacks in personnel for the Airports Division of the Federal Aviation Administration. Your concern about the impact of such reductions on your state and the Rocky Mountain region is understandable.

I am confident the matter will be given careful consideration when the FAA appears before our Transportation Subcommittee in connection with its budget requests for fiscal year 1975. At this time, however, there is no indication when hearings may be held.

With best wishes,

Sincerely,

CLIFFORD P. CASE,
U.S. Senator.

LETTER FROM SENATOR MILTON R. YOUNG

United States Senate

COMMITTEE ON APPROPRIATIONS
WASHINGTON, D.C. 20510

May 22, 1974

Honorable Clifford Case
Transportation Subcommittee
Senate Appropriations Committee
Washington, D. C.

Dear Senator Case:

Enclosed is a copy of the letter I have just received from Mr. Harold G. Vavra, Director of the North Dakota Aeronautics Commission, concerning the cut for Fiscal Year 1975 in personnel for the Airports Division of the Federal Aviation Administration.

Senator Case, I would like to associate myself with Mr. Vavra's position. I think it is important that we maintain the present personnel level in the Airports Division of FAA. Should this reduction in personnel be approved, it could have an extremely adverse effect on programs of the Federal Aviation Administration throughout the nation. It would fall hardest on regions and states having smaller stations than it would on some of the larger offices, and this would have a particularly adverse effect not only on North Dakota but states in the Rocky Mountain Region.

You will note, according to Mr. Vavra, a 27% cutback is proposed in the Rocky Mountain Region of the FAA, as opposed to a 20% reduction in personnel on a national average. It doesn't seem reasonable to me to impose a greater cut in this region than is being proposed for other regions. I sincerely hope it will be possible to provide sufficient funds to maintain the present level of personnel and report language directing the Administrator of the FAA not to reduce personnel.

With warm personal regards,

Sincerely,

Milt Young

MILTON R. YOUNG

LETTER FROM HAROLD G. VAVRA

AERONAUTICS COMMISSION
BOX "U" • BISMARCK, N. DAK. 58501

May 20, 1974

Honorable Milton R. Young
United States Senate
New Senate Office Building
Washington, D.C.

Subject: Federal Aviation Administration
Cut-Back in 1975 Fiscal Year
Airport District Office at
Bismarck, North Dakota.

Dear Senator Young:

I have been advised by Administrator Alexander P. Butterfield's Office, Federal Aviation Administration, Washington, D.C., that the FAA 1975 Fiscal year budget, now before the Congress, calls for 20 percent reduction in staff personnel in the FAA Airports Division.

That this national cut-back in personnel is supported by the Administrator and the Office of Management and Budget. The FAA's budget has passed the U.S. House of Representatives with the 20% cut-back in personnel appropriations in the airports division unchanged.

The 20% reduction in airport personnel will seriously affect North Dakota's FAA District Airport Engineer's Office, presently located at the Bismarck Municipal Airport. It is staffed with seven persons, including a Chief, three engineers, a planner and two secretaries.

The Bismarck District Airport Office comes under the jurisdiction of the Rocky Mountain Region, Denver, of the Federal Aviation Administration.

Further alarming is the fact that the Rocky Mountain Region of the FAA has been assigned by Washington, D.C. headquarters of the FAA, as getting a 27% cut-back in personnel in the Airports Division, notwithstanding that the National reduction averages to 20%.

I have been advised that some of the FAA Regions in the Northeast and Southeast have been allocated a much lower reduction in personnel in the amounts of 12 to 15%, compared with 27% cut-back in the Rocky Mountain Region of the FAA.

Affect on North Dakota

At present, the FAA Rocky Mountain Region maintains a separate airport district office at Bismarck to cover all of North Dakota; one at Pierre, S.D. to cover all of South Dakota and one at Helena, Montana to cover all of Montana.

The FAA Rocky Mountain Region has threatened to eliminate the Bismarck District Airport Office as well as the one at Pierre, S.D. and Helena, Montana and manage all of Federal-aid for airports and related construction out of its Denver Regional Office for all three states.

Such a drastic move would be a disaster to North Dakota as well as South Dakota and Montana.

Under the present system, the FAA Bismarck District Airports Office has provided excellent coordination with the North Dakota Aeronautics Commission, as well as individual North Dakota cities, airport authorities and concerned airport managers. As a result of this excellent coordination, North Dakota has underway 21 General Aviation Airport construction projects and five airline airport projects for a total of about 25 active airport improvement and security projects, involving federal-aid airport funds managed by the FAA Bismarck District Airports Office.

We have only had the Bismarck Airport Office for 2½ years. Prior to that time, coordination of airport improvement projects was through the Minneapolis FAA Office under the old Kansas City Regional set up. This left considerable to be desired, because of communication problems. The N.D. Aeronautics Commission takes a dim view of having to coordinate all this work through the Denver Office of the Rocky Mountain Region. If this happens, it would not only be time consuming, costly, but inefficient.

Temporary Solution

After the Rocky Mountain Region of FAA received complaints from North Dakota and others, the Regional Chief of Airports at Denver indicated that to meet the Washington ordered cut-back, that the Bismarck Airports Office would be reduced from 7 persons to three on a temporary basis. The remaining three persons would probably include two engineers and one secretary in place of the seven person staff here at present. The Denver region emphasized that the retention of the Bismarck office with 3 persons was only a temporary solution and not intended as a permanent solution.

The North Dakota Aeronautics Commission would prefer to retain a fully staffed FAA District Airports Office at Bismarck, if this is possible. The only way this can be done is to restore the 20% personnel appropriation reduction in the FAA budget for airports, which is to be considered by the Senate appropriations committee soon.

On the other hand, if the appropriation cannot be fully restored, then I emphasize that the Appropriation's Committee should let the Administrator and his staff know when they appear before the Senate appropriations subcommittee, that North Dakota by all means wants to retain the Bismarck FAA District Airports Office even if it is reduced from a staff of 7 to a staff of 3 to 5.

I also emphasize that North Dakota takes a dim view of the FAA Administrator, Washington, giving the Rocky Mountain Region a bigger cut of 27% compared to the amount handed to other FAA Regions in the Northeast and Southeastern part of the United States. I don't think North Dakota should suffer more than the national average of 20% if a cut-back in staff and personnel cannot be avoided.

In conclusion, my primary concern is that North Dakota retains the Bismarck FAA District Airports Office, if personnel cut-backs cannot be avoided. I suggest that the Senate Appropriations Committee restore all or as much as possible of the 20% cut in personnel, since undoubtedly, the final appropriation will probably be a compromise between the House and Senate appropriations committees.

It is my understanding that the appropriations for FAA Airports personnel is taken from the "Airport-Airways Trust Funds", as a part of the administration costs of the Federal grants to airports from the trust

fund. The FAA Administrator , Washington, D.C. has stated recently that the "Airport-Airways Trust Fund" by July 1, 1975, will have an unexpended cash balance of over $500 million after deducting all allocations and grants.

Because this reduction is an "Administration" request, I have been advised that it will do no good to write to Administrator Butterfield regarding this matter. It appears that the only place this matter may be resolved favorably is in the Senate Appropriations Committee when the 1975 fiscal year budget of the FAA comes before it for consideration.

In conclusion, I will greatly appreciate your taking up this matter with Mr. Alexander P. Butterfield, Administrator, when he appears before the Senate Appropriations Subcommittee on the FAA budget for fiscal year 1975.

Sincerely yours,

Harold G. Vavra,
Director

COMMUNICATION

Senator BYRD. Also, if there is no objection, I will include a letter from Senator Young addressed to me on May 22, 1974, referring to the cut for fiscal year 1975 in personnel for the airports division of the FAA.

[The letter follows:]

United States Senate
COMMITTEE ON APPROPRIATIONS
WASHINGTON, D.C. 20510

May 22, 1974

Honorable Robert Byrd, Chairman
Transportation Subcommittee
Senate Appropriations Committee
Washington, D. C.

Dear Senator Byrd:

Enclosed is a copy of a letter I have just received from Mr. Harold G. Vavra, Director of the North Dakota Aeronautics Commission, concerning the cut for Fiscal Year 1975 in personnel for the Airports Division of the Federal Aviation Administration.

Senator Byrd, I would like to associate myself with Mr. Vavra's position. I think it is important that we maintain the present personnel level in the Airports Division of FAA. Should this reduction in personnel be approved, it could have an extremely adverse effect on programs of the Federal Aviation Administration throughout the nation. It would fall hardest on regions and states having smaller stations than it would on some of the larger offices, and this would have a particularly adverse effect not only on North Dakota but states in the Rocky Mountain Region.

You will note, according to Mr. Vavra, a 27% cutback is proposed in the Rocky Mountain Region of the FAA, as opposed to a 20% reduction in personnel on a national average. It doesn't seem reasonable to me to impose a greater cut in this region than is being proposed for other regions. I sincerely hope it will be possible to provide sufficient funds to maintain the present level of personnel and report language directing the Administrator of the FAA not to reduce personnel.

With warm personal regards,

Sincerely,

Milt Young

MILTON R. YOUNG

INSTRUMENT LANDING SYSTEM AT MORRISTOWN

Senator CASE. I wonder if you could bring us up to date on the progress of the instrument landing system at Morristown?

Mr. BUTTERFIELD. The instrument landing system at Morristown, specifically?

Senator CASE. In our report in 1974, the committee stated that installation of such a system at Morristown was intended and shouldn't be used as an argument to expand the airport against the wishes of the communities concerned. I just wondered if you had any comments about the general status of things and admonition?

Mr. BUTTERFIELD. I would like to call on Mr. Cochran, who is Director of our Airway Facilities Service.

Mr. COCHRAN. Yes, sir. We did discuss this question at last year's hearing. There has not been any FAA activity during the past year at Morristown Airport that goes against the stated wishes of the communities concerned. There have been no additional facilities added since the ILS glideslope was commissioned in March of 1973. We understand a judgment has been ruled in favor of the airport sponsor concerning a condemnation of a clear zone within which the ILS middle marker and approach light systems will fall. The limitation for appeal on the judgment is August 1. Assuming no appeal is filed by August 1, we expect to have access to land and proceed with the installation of the middle marker and approach light system.

FISCAL YEAR 1975 R.E. & D. APPROPRIATION REDUCTION

Senator CASE. I note that the National Aviation Facilities Experimental Center, NAFEC, at Atlantic City, is the $4 million budget cut for 1975. Can you tell us something about that?

Mr. BUTTERFIELD. General Lundquist can speak to that in detail.

Mr. LUNDQUIST. This is primarily in line with our overall reduction in the research, engineering and development area for fiscal year 1975. It carries over into our test evaluation simulation and experimental center in Atlantic City. To be more specific on the cut, there will be a reduction of 89 positions at NAFEC. This reduction will be handled by attrition and retirements. No "reduction-in-force" action will be required to accommodate the 89 positions As part of the budget cut, we also will spend some $2.2 million less on plant and facilities improvement. The 89 positions themselves represent a $3.1 million reduction for fiscal year 1975.

Senator CASE. What effect would there be on NAFEC with the $15 million that the House made?

Mr. LUNDQUIST. We would plan to continue the level of in-house people projected in the fiscal year 1975 budget request if the cut were sustained. Of the total of $55 million then allowed in R.E. & D., $27 million would go to paying our people at NAFEC, those of the Washington headquarters, and the people we use at the Transportation Systems Center at Cambridge, Mass. Since we don't plan any reduction in our in-house people, we would have to reduce the contractural efforts that support our major programs, and this is where the major impact of the cut will be felt primarily.

Senator CASE. You mean out of contractual work?

Mr. LUNDQUIST. That is correct. We would have to make major cutbacks in some of our key programs if the $15 million cut is sustained. For example we would defer initiation of phase 3 of the National Microwave Landing System program, until fiscal year 1976; we would defer the procurement of our Discrete Address Beacon System and intermittent position control equipment for 1 year; the remainder of the cut would be absorbed by curtailing or deferring a number of subprogram areas.

WAKE TURBULENCE

Senator CASE. What about the wake turbulence activity?

Mr. LUNDQUIST. The wake turbulence activity will not be reduced at all. We will continue that work. We have been directed, in fact, by the House to pursue that effort. So, we will continue.

Senator CASE. On that point, what is the distance now between planes?

Mr. LUNDQUIST. The normal longitudinal approach separation distance is 3 miles when there is no wide-body aircraft in the path. However, when you do have a wide-bodied aircraft, the separation is increased to 5 miles. We have conducted very successfully the evaluation of over 20,000 vortices over the past year, primarily at Kennedy Airport in New York, Stapleton Airport in Denver, and Heathrow Airport, London, England. We know more about the characteristics of this phenomenon than we knew a year ago. It has also helped us in the development of a vortex detection and avoidance system to assist the controller in applying separation minimum in the situation where there is a wide-body aircraft in the area.

Senator CASE. Is the NASA work on turbulence at Langley being coordinated with your own?

Mr. LUNDQUIST. Yes, very close. We in FAA working on developing a vortex avoidance system. NASA is trying to solve the problem at the source, the airplane itself. They are looking at various spoiler techniques, readjustments in the wing flap configuration and other aerodynamic means which would tend to reduce the intensity of the vortices or speed up their break down.

Senator CASE. Is that thing we are developing at Langley going to be required by you, do you think?

Mr. LUNDQUIST. At best, Senator, NASA's approach is a long-term solution. Even minor changes in the wing flap configuration of a Boeing 747 would require a recertification of that aircraft. The addition of spoilers and other aerodynamic devices that appreciably changed the configuration of an airplane's structure, would require even more detailed flight testing and a longer recertification process.

Senator CASE. Has anybody suggested more than 5 miles?

Mr. LUNDQUIST. Yes, sir. The British apply 6 miles.

Senator CASE. What have you thought about that?

Mr. LUNDQUIST. I think 5 miles is a nominally acceptable distance. In fact, in most cases where the 5-mile separation minimum is applied, the actual distance ends up being more than 5 miles.

Mr. BUTTERFIELD. You may want to ask Mr. Flener about that, but I think the figure 5 miles is safe.

Mr. FLENER. Our selection of 5 miles was done on a scientific basis. The British did theirs empirically. They had a large number of flight reports to consider. Although we don't think this is an adequate method. They did this over a period of time of about 9 months. A pilot would report an upset from a previous aircraft. They made a decision on 6 miles separation. We have discussed it with them and we agreed on their use of our test equipment and we currently have the equipment positioned at Heathrow. They are using the same equipment now that we were using at Denver and JFK. In the meantime, they are using 6 miles. We also conducted flight tests at Atlantic City and Edwards Air Force Base prior to the determination that 5 miles was a safe distance between aircraft.

SOURCE OF NAFEC FUNDING

Senator CASE. What is the source of NAFEC funding going to be in 1975? I thought it got its money from facilities?

Mr. LUNDQUIST. In our fiscal year 1975 request, there has been a major shift from the Facilities and Equipment appropriation to the R.E. & D. appropriation for funding NAFEC. Much of the previous year's work at NAFEC supported the installation and implementation of the NAS stage A automation program for the 20 en-route centers and the ARTS III terminal automation program. These programs have reached the final stages of implementation and as a result the NAFEC work effort has shifted more to R. & D. Almost everything we put in the field is first sent through the NAFEC test and evaluation cycle. That is where we debug the equipment, do the troubleshooting, and accomplish the system adaptation before we put it into operational use in the field.

NAFEC will continue to be the focal point for the testing and evaluation of new systems and the development and testing of software additions and improvements to existing elements of the national airspace and navigational system.

AIRCRAFT NOISE RETROFIT PROGRAM DELAY

Senator CASE. As to another matter, the House wants to delay the request of $800 million to retrofit airplanes with acoustical installations to reduce noise. Their reason being apparently there is a possibility another method called a refan may be developed. Isn't the noise production programs already behind schedule? Should you wait any longer?

Mr. BUTTERFIELD. We don't feel we should.

Senator CASE. I wonder if you could describe this refan system?

Mr. LUNDQUIST. That is a NASA program. Our work in engine noise reduction focused on the treatment of the engine nacelles with sound-absorbing materials. We developed modification kits for both the JT-3D engine used on the Boeing 707 and DC-8, and for the JT-8D engine, used on the Boeing 737, 727 and the Douglas DC-9. NASA is working on a refan modification to the JT-8D engine. It will cost substantially more than the nacelle sound absorption retrofit; however, it will provide appreciably greater noise reduction.

Mr. BUTTERFIELD. And since its 4½ years downstream, we feel NASA is more optimistic about that refan retrofit than we are. Our theory is that we have the SAM, sound-absorbing retrofit capability today. We feel we have an obligation to stay abreast of the state of the art. We have an obligation to promulgate a rule which would force the manufacturers to use that particular retrofit. We do have it and it is relatively inexpensive. When you compare it with the refan, the refan is 4½ to 5 times more expensive and is about 4 years down the stream.

Senator CASE. You have extended your time that you think it will be delayed?

Mr. BUTTERFIELD. Yes; we have.

Senator CASE. Than the 2 years mentioned in the House hearings?

Mr. BUTTERFIELD. Do I think that the sound-absorbing system——

Senator CASE. Refan, yes. In the House hearings, I read, Mr. Butterfield, on page 404 that, I would think it is safe to say refan retrofit is further down the road. I guess at least 1 year away. In fact, I would be more accurate to say it is at least 2 years down the road due to uncertainties to practicability, and that is in addition to its being more costly.

You now think it is 4 years?

Mr. BUTTERFIELD. Yes, I believe 4 years is a more accurate estimate.

Mr. SKULLY. The results from flight testing the refan aircraft will be available July of next year.

Mr. BUTTERFIELD. Is it closer, in your opinion, to 2, 2½ or 4?

Mr. SKULLY. The date we should have the noise information is July of 1975. But by the time you go through all the certification and develop confidence on an engine, it will be another year or two before you could start installing on an aircraft.

Senator CASE. How long about before you could get your program into effect?

Mr. SKULLY. We are doing it today, sir.

Mr. BUTTERFIELD. You mean with the refan or the sound-absorbing material?

Mr. SKULLY. The technology is at hand for retrofitting with sound absorbing material.

Senator CASE. I understand, but I am trying to get a figure so we know exactly what you think the difference in time between these two things is.

Mr. SKULLY. Our notice indicated in July of 1978 the whole program will be completed. The comments we received indicate we are somewhat in the minority in our assessment. I think it depends upon when we can finalize our rule, depends on how rapidly we can progress. We may be optimistic saying July 1978.

Senator Case. On your own program?

STATUS OF RETROFIT PROGRAM

Mr. BUTTERFIELD. There are about 1,800 airplanes that would require this particular system, this retrofit. We would require half of the fleet to have this retrofit by July 1 of 1976 and the balance by

July 1, 1978. We are now looking at the comments, and the big question is how this should be paid for. It will cost $600 to $800 million for the entire U.S. civil air transport fleet.

Senator CASE. As compared to how much for refan?

Mr. BUTTERFIELD. Our figures indicate about 4½ to 5 times that. I think NASA is pretty much in agreement.

Senator CASE. Then the same work would be about 2 years behind as far as actual implementation?

Mr. SKULLY. Yes, sir. If I could add that of the 1,800 aircraft that Mr. Butterfield referred to, 600 of them are 4-engine aircraft. In other words, the 707, DC–8, the only solution for those is the sound absorbing material.

Senator CASE. Your general estimate?

Mr. BUTTERFIELD. The refan retrofit program is not completed, it is only two-thirds to three-fourths of the way along. It is not a sure thing. Perhaps the chances of the refan not being acceptable are very small, but we know that the sound absorbing material system will work.

SOURCE OF RETROFIT PROGRAM FUNDING

Senator CASE. Who is going to pay for your program?

Mr. BUTTERFIELD. We do not know.

Senator CASE. Who do you recommend?

Mr. BUTTERFIELD. We could impose an additional surcharge or it could come out of the trust fund. There are a number of options. We are hoping that most of the people who commented during the period will address that subject and give us some feel for what the best solution will be.

Senator CASE. Who is going to pay for it? What is your prediction as to what kind of testimony you are going to get?

Mr. BUTTERFIELD. Well, I am not sure what the most popular alternative is at the present time. Mr. Bacon, could you comment on that?

Mr. BACON. There are perhaps five basic alternatives.

Mr. BUTTERFIELD. Let me say that Mr. Bacon is our Deputy Associate Administrator of Policy Development and Review. His office has been looking into the funding alternatives.

Mr. BACON. There is a wide body of industry which supports and suggests that we tap the airport and airways trust fund without making any adjustments to the present user taxes. That view is premised upon the fact that there is some surplus in the fund. There is another body of opinion that says the users of the system should specifically pay for the retrofit program through increases to the present tax structure. This could occur through the establishment of a new passenger enplanement tax, or alternatively, an increase to the present excise tax.

Senator CASE. You mean passengers and shippers?

Mr. BACON. Yes, sir.

Senator CASE. They are the ones that contribute to the trust fund anyway?

Mr. BACON. This is correct.

Senator CASE. So it is the same thing. The sacredness of the trust fund might be violated by going at it directly.

Mr. BACON. A third alternative calls for the assumption that reduction of aircraft noise is a national problem of such critical dimension, that the public interest dictates that the cost of its reduction should be directly paid for by the Government. If such course is followed in the case of a noise retrofit program, it would, of course, establish a very significant precedent. The other two alternatives being examined are basically combinations of the three I have mentioned. No judgments have been made. We are continuing to look at the problem and are seeking suggestions from all who are concerned with the problem, because we are acutely aware of the economic situation of the carriers at this time as well as that of the aircraft manufacturers.

Senator CASE. Does this apply to foreign planes?

Mr. BACON. Yes, sir. The way the retrofit rule is now proposed, it applies to foreign aircraft. This requirement has caused violent objection to come from the international carriers and from the international civil aviation organiation. They very much oppose the United States taking any unilateral action in international regulatory matters.

Senator CASE. But the alternative is really taking no action. Because there isn't any prospect of international action?

Mr. BACON. Perhaps Mr. Skully can speak to this more directly than I. International civil aviation is governed by a set of mutually developed agreements. Presently, those regulations impose a less stringent noise level than that level proposed for the domestic United States. Accordingly a compromise to our proposed retrofit rule may be necessary, which allows foreign aircraft entry to the United States when they comply with levels prescribed by ICAO. It is a less than satisfactory equivalent, yes, sir.

Senator CASE. Thank you very much. I know you want to make your case on this thing as good as possible, really. To that end, I call your attention to further comment by the House saying that you haven't produced evidence that the implementation of your rule on refit will afford a meaningful relief to the public. I would like to get your comment on that in as much detail as you want. If the chairman would rather not take any more time, including the matter whether you have checked the matter with the program of the Environmental Protection Agency and if so, what his comments on the matter are.

RESULTS OF DULLES NOISE REDUCTION DEMONSTRATION

Mr. BUTTERFIELD. We think the reduction in noise can be meaningful. We had a flight demonstration out at Dulles last year, and everyone who witnessed that demonstration agreed that the decibel level reduction was noticeable. On takeoff it was 10.

Senator CASE. The reduction was from what, Mr. Skully?

Mr. SKULLY. The DBA level on approach untreated was 92 and came down to about 80. Takeoff was 93 untreated and went down to 83.

Senator CASE. How far away were they from the flight pattern?

Mr. SKULLY. They were directly 1,100 feet above us.

Mr. BUTTERFIELD. We were about 2 miles off the end of the runway and 1,000 feet below the aircraft.

Senator CASE. Do you have any comments on this matter? My mind keeps coming back to the SST some while back. I think the argument

was made that after a certain point you couldn't hear the noise anyway, so it doesn't matter if it is very much worse than normal. Is this normal within the range of the normal sound?

Mr. SKULLY. Yes, sir. We are conducting laboratory studies in conjunction with Columbia University in New York. They have taken people from the approach area from Kennedy and tested them in this lab. They can place the person wherever you want him in the approach, 3 miles or 6 miles from the landing. What was recognized and what works toward being acceptable in their studies reflects the reduction of 6 DBA's as being very discernible on the part of the people tested.

Senator CASE. How about the Environmental Protection Agency?

Mr. SKULLY. They are in complete agreement with our group.

Senator CASE. If there is anything further you want to put on the record at this point, please do. Because we have to meet that House comment there and the House position.

QUESTIONS SUBMITTED BY SENATOR CASE

Mr. Chairman, I have a number of other questions, if I may, that I would like to leave for the record so we don't take the witness' time further.

I am much obliged to you.

[The questions and answers follow:]

Q. Have you made a study of the effect of the plan to reduce FAA airport service personnel by 149 positions? If so, what does it show? If you have made such a study, please provide it for the Committee's files.

A. We have made a preliminary review as part of an overall agency study to identify program areas where reductions could be effected with minimal impact on the ability of the agency to accomplish the airports program. A summary of these findings which are being used by a special task group which has been established to review the airports program mission, is enclosed for the Committee's files.

Q. If our Committee decides to restore the 149 positions, how much additional money should we put in the bill?

A. The FAA estimates that restoration of the 149 positions would require $1.5 million added to the appropriation bill.

Q. I note you have a task force at work exploring alternatives in this area. When will the task force report?

A. The task group, directed to be established by the Administrator last April, with a membership of two Regional Directors, the Acting Deputy Director of Airports Service, and two regional Airports Division Chiefs, are exploring alternatives in this area as part of a broader charter to consider the scope of the Airports program mission, and to help develop improved methodologies, procedures, and program coverages. To this end the task group has caused three working-level sub-groups to be created which will go deeply into procedural improvements, particularly, in major Airports functional areas—namely ADAP and PGP grant administration and development of the National Airport System Plan.

Near term recommendations are anticipated from the Task Group within the next few months.

Q. The National Transportation Safety Board says it has repeatedly recommended to FAA that it require use of ground proximity warning devices, which are used to advise a pilot when he is getting too low. The Board says that "since 1965 there were probably 12 major accidents that could have been averted if a ground proximity warning device had been used." On May 1, 1973, you issued a notice of rule making in this matter but I am not aware that you have actually issued a final rule. Where does the matter stand and why the delay?

A. On April 25, 1973, the FAA issued an Advance Notice of Proposed Rule Making. The comments received from the Advanced Notice of Proposed Rule Making were evaluated and evenly divided for and against requiring such a device. The comments against requiring the device were based on the premise that there was no device available which would effectively provide this terrain warning function, and that current instrumentation such as radio altimeters, altitude alerting systems, barometric altimeters, and so forth, provided adequate information as long as good operating procedures are compiled with and cockpit discipline is maintained. We have carefully followed developments in this area for the past four to five years, and the FAA has now purchased a terrain proximity warning device and is installing it in one of our turbojet airplanes to further evaluate the operational parameters of the system. In light of recent advances in the state-of-the-art and our evaluation of available hardware, we are actively drafting a Notice of Proposed Rule Making that proposes to require a terrain proximity warning device.

Q. The House Appropriations Committee has directed you to begin construction of an airport at Columbia-Waterloo to serve the St. Louis area. Why is this matter so controversial?

Do you agree with the House action?

Do you believe you have au'hority to issue such an order?

A. (1) The controversy surrounding the Columbia-Waterloo airport relates directly to the fact that this site is located in Illinois, whereas the present airport serving the metropoli'an St. Louis area is located in Missouri. Hence, Missouri interests are extremely reluctant to have such a valuable asset relocated to another state, particularly when the majority of passengers it serves are Missouri citizens.

(2) I do not agree with the House action on this matter. Although it is true that there have been a number of studies completed with respect to a new airport for St. Louis, there still remain important questions that must be answered before initiating development of the Columbia-Waterloo facility. The citizens of Missouri have legitimate concerns in maintaining the present airport in Missouri and there have been strong assertions that Lambert Field has expansion potential. As the Secretary has the responsibility to assure himself that the overall public interest is being served, the Department has approved a six-month master planning study for Lambert Field which will consider alternative development plans for this airport to meet future demand. He has also directed the Department to conduct a 90-day study to develop aviation forecasts for the St. Louis area. Such a study will result in forecasts which are comple'ely objective and will include consideration of the effects of the energy crisis. With the information from these two studies, together with previous data from earlier efforts, the department will be in a much better position to determine whether a new replacement airport is necessary at this time.

(3) Neither the Secretary nor I have authority to issue an order to begin construction of the Columbia-Waterloo airport. However, there is before the Department an application requesting Federal funds to begin acquisition of land for this airport. The application could be approved by the Department when it has been de'ermined that all statutory requirements have been met and that the project is in the pubilc interest. From a practical standpoint, such approval would, in effect, initiate the first phase of the development of the Columbia-Waterloo airport.

Q. I believe a recent newsstory indicates a falloff in delays at New York-New Jersey area jet ports. Please describe the present situation, including any effect on rules imposed to prevent delay.

A. Both the airlines and the FAA reported delays for the month of January through May indicate 'hat the total amount of delays at Kennedy, LaGuardia and Newark have fallen off by approximately 31%, 64% and 43% respectively, as compared to the same period last year. This situation occurred when the volume of traffic activity at these airports during peak hours was approximately the same. This reduc'ion in delays has not come about by any change in rules or regulations but by improved controller performance, airline gate-hold procedures and weather conditions.

Q. Are you deferring installation of any ILS systems because of work on microwave landing systems? If so, where?

A. No, sir. Approved ILS systems are not being deferred at this time.

Q. Why are you planning to cut 190 positions in your Flight Standards program and 77 positions from your air guard force? Will the cut in Flight Standards' positions affect NAFEC?

A. The planned reduction of 190 positions in the Flight Standards program is primarily a savings of 118 positions in the Flight Standards aircraft area. The largest reduction here, amounting to 113 positions, is due to savings resulting from the modernization of the flight inspection aircraft fleet. An additional 5 positions will be saved in the aircraft program as a result of the Pacific regional reorganization.

There is also planned a 72-position reduction in the Flight Servce regulatory program. This reduction will be principally in the air carrier area and is based on the fact that the environmental growth and workload on air carriers has flattened out, and in some cases, decreased as the carriers have started consolidating their fleets, some jumbo jets have been temporarily mothballed, route segments dropped, and crew-strength decreased as the result of fuel cut backs. This leads to some decrease in certification, inspection and surveillance workload at our air carrier field facilities.

The 77 position reduction in the Air Guard Program is based on the change in emphasis from a voluntary to a regulatory type of program. The FAA's anti-hijacking program began in late 1970 and we were staffed to schedule and coordinate a massive sky marshal program as well as promote security awareness by elements of the aviation industry. Today, we no longer have a massive sky marshal program nor are we faced with time-consuming efforts to promote aviation security on a voluntary basis. The FAA is responsible for assuring industry compliance with regulations governing both the security of our air carriers and airports. Although we plan to reduce our staff, we have carefully analyzed the workload involved and believe a higher degree of security can be accomplished with fewer people since the program is now being conducted in the way other aviation safety activities are managed.

The reduction in the Flight Standards positions will have no impact on NAFEC.

Q. I note that you are asking 200 extra positions for Flight Service Stations. In view of your plans to close 30 stations, why do you need the additional people?

A. The 200 positions are not related just to the projected workload growth in FY 1975. The system today is just not able to meet existing user demands. The manpower saved at the 30 remoted stations will be redistributed from relatively low activity stations to higher activity stations. This will help to correct some of the imbalance in personnel distribution we have been faced with in operating the current system. By a proper distribution of the work force we hope to be able to do business more effectively. The FY 1975 staffing level of 4,889 is based on our evaluation of system requirements during the immediate future and during the transition period from the present manual system, which is heavily overloaded, to a centralized, automated system.

Q. What effect is the energy crisis having on your plans?

A. The crisis has caused a short term slowdown to aviation growth from the growth rate predicted last year. In most respects the dampening effect has been slight and all measurements of activity at FAA facilities are continuing to show a positive rate of growth and that trend is expected to continue. Indications are present that by 1977, the rate of aviation growth will have recovered sufficiently to reach the rate of growth predicted for 1977 prior to the energy crisis.

As of June 1974, there has been no apparent leveling off of airport development and planning grant requests because of the energy shortage.

Current forecasts indicate that demands for air transportation will continue to increase and that the fuel situation will have minimal long term impact on the plan. A continuing requirement for improved and additional airports and air traffic control systems is anticipated.

Q. What effect is the energy crisis having on your plans? Has FAA reduced its own flying time to any degree in order to conserve fuel?

A. During FY 1974 the FAA aircraft fleet, including rental aircraft, consumed less aviation fuel than was estimated. These reductions exceeded the President's goal of 7% for all government agencies. Credit is given to flight crews who used more efficient operating procedures, and to better scheduling and curtailment of

some flights. Use of the following procedures contributed to these savings: One, increased use of simulators for flight training; two, reduced use of aircraft for checking air navigation facility adjustment; three, taxiing with the minimum number of engines running; four, obtaining ATC clearance and assurance of immediate takeoff before starting engines; five, cruising at optimum altitude and airspeed for best economy; and six, utilizing the most economical aircraft for the mission. The agency plans to continue these efforts throughout FY 1975.

Q. When will the U.S. SST program finally be fiscally terminated as ordered by Congress? What is the status of the SST development programs which were authorized by the $15,000,000 in fiscal year 1972?

A. Termination of the government's SST development program by the Congress in March 1971 ended the agency's SST development effort. Since that time the agency, as approved by the Congress, has been carrying out the termination process on the Boeing and General Electric SST contracts. A settlement was agreed to on November 21, 1973, between the government and the Boeing Company for the ariframe portion of the SST development program. In the engine area, the settlement of the prime contract with General Electric is in the process of negotiation and should be completed by mid-September 1974.

We are also in the process of completing certain key technology development efforts which were subsequently authorized by Congress. We have obligated the $15 million provided for this purpose and essenitally completed all but two efforts which will continue in FY–75. These are in the area of noise reduction, involving external and internal engine noise reduction, and fuel tank sealant tests of sealant durability and reliability. This sealant activity requires life testing of sealants at elevated temperatures in simulated flight cycles; therefore, testing will continue to the end of 1975 to achieve the total test hours required to establish durability and reliability of data.

Q. What would be the effect on worldwide fuel conservation efforts of having a fleet of SST's in operation?

A. The Concorde requires approximately 35 percent more fuel per *seat mile* than a B–707 and 90 percent more than a B–747. However, impact on total worldwide fuel conservation would be minimal. The SST fleet size projections constitute only a small number of the total free world air carrier jet fleet which at present is 4,465 units.

Q. I note the Secretary of Transportation indicates that rising fuel costs have "raised new questions" on the economics of SST technology. Will you elaborate on what he has in mind?

A. Historically, fuel represented approximately 10 percent of total operating cost for the air carriers. This percent has been increasing significantly due to rising fuel prices. As the SST does require more fuel per seat mile than conventional jets, increased fuel costs will have a greater effect on the operating cost of these aircraft. Whether this increase in cost will affect the economic viability of the SST has not been fully analyzed at this time.

Q. In the House hearings, Dr. Cannon referred to a report on the climatic effects of a fleet of SSTs. At the time of his comment the report was not yet ready. Is the report completed and, if so, what are the results?

A. While we have data from specific study elements, we do not yet have a report on an integrated analysis that would enable us to give any definitive overall findings to date. All of the factors contributing to estimates of overall effects will be correlated and described in the Climatic Impact Assessment Program (CIAP) report to be published in December 1974.

Q. What steps have been taken to prevent a repeat of the White House "buzzing" by a helicopter?

A. Since the incident, representatives of the FAA have had several meetings and discussions with U.S. Secret Service personnel in an effort to devise some means to detect such intrusions. At the request of the Secret Service we are now engaged in a comprehensive staff study to investigate all feasible means to improve the safeguarding of the White House from air intrusions.

In the interim, we have implemented procedures whereby Washington National Tower will report all unknown "targets" that penetrate within 7 nautical miles of Washington National Airport to the Secret Service. This airspace is part of the Washington Terminal Control Area. An aircraft must have an air traffic control authorization to operate within the Washington TCA.

In addition to the above, improved communications circuits have been installed, linking the Secret Service with the 3 major airports in the area. This

was done in reaction to the unrelated hijacking attempt at Baltimore-Washington International Airport shortly after the helicopter incident.

The study is expected to be completed by September.

Q. How many airport development projects presently are being held up because of environmental reasons? Please identify any of this category.

A. Most of the airport development projects having environmental impacts experience some routine delays for environmental processing. Major development projects currently being delayed beyond the routine processing time for environmental reasons include:

St. Louis, Mo.—new major airport.
Newburgh, N.Y.—Stewart Airport—runway extension.
Boston, Mass.—Logan—runway extension and new runway.
Palmdale, Calif.—new major airport
Los Angeles, Calif.—International—runway reconstruction.
Houston, Tex.—Intercontinental—runway extension.
Birmingham, Ala.—Municipal—runway extension.
Phoenix, Ariz.—Sky Harbor—runway extension.
Tierra Rejada, Calif.—new airport.
Wagoner, Okla.—Sequoyah State Park—runway extension.

Q. Why are so many air traffic controllers entering the so-called second career program? I believe you are projecting a student body of 500–700.

A. Under the provisions of Public Law 92–297, an air traffic controller with 5 years of service in a position covered by the law is entitled to up to 24 months of second career training if he is disqualified for medical reasons, inability to maintain technical proficiency, or the preservation of his physical or mental health. By the end of FY–75, an estimated 750 disqualified controllers will be enrolled in second career training. Based upon our experience to date, the vast majority (about 98%) of enrollees will enter due to medical disqualification for active control duties. Thus, the rate of entrance into the program is substantially a direct correlation of the ate of medical disqualification in the system. In view of the absolute entitlement provisions of the legislation, the agency has litt!e or no opportunity to control the number of enrollments. Consequently, most disqualified controllers avail themselves of the training entitlement even though they may have attained normal retirement age or are eligible for disability retirement.

Q. What authority does the Federal Aviation Administration have to investigate air crashes? Isn't this the jurisdiction of the National Transportation Safety Board?

A. Title 7, Section 701 of the Federal Aviation Act of 1958, as amended, requires the Administrator to participate in all civil aircraft accident investigations to determine whether any of his areas of responsibility such as airworthiness of aircraft, airman competency, functions or performance of Federal Aviation Administration facilities, and so forth, are involved.

While it is true that the Act specifically taxes the National Transportation Safety Board with the investigation of all civil aircraft accidents, Section 701 allows the Federal Aviation Administration to investigate these accidents at the request of the Board. The Board, has chosen to delegate the investigation of specific accidents to the Federal Aviation Administration, and these are identified in National Transportation Safety Board Operations Regulation 400.45, Title 14, Code of Federal Regulations.

Q. If your proposed legislation to use trust fund dollars for operations were approved, wouldn't this result in a net savings to the Federal Government?

A. If the Operations appropriation were financed from the Airport and Airway Trust Fund, our appropriations from the general funds of the Treasury, that is those provided by the general taxpayer, will be significantly less. Aviation users would pay their fair share of the airport and airway system costs thereby partially relieving general taxpayers of the burden of paying for services for the aviation community. There will also be a permanent Federal payment to the Trust Fund for all regulatory and certain administrative activities, military and civil government use of the system and any gaps which might develop between user fees and user share of system costs. This change in financing will provide a better method for financing the total operating and capital costs of the national airport and airway system and permit clear identification of general taxpayer and user costs and contributions.

However, this change in financing will not provide additional funding availability for the Federal Aviation Administration.

OPERATIONS REQUEST

Senator BYRD. The first item to be considered, as far as my questions are concerned, is the request of $1,385,500,000 for your operations. This estimate provides for the continuing requirements of the FAA primarily to cover the operation on a 24-hour basis of a natonal system of air traffic management in the United States and its possessions. This request would provide funding for 52,732 personnel, an increase of 691 over the 1974 level.

The House reduced this request by $22.5 million and 290 positions. Restoration of $15 million and all the positions are sought. On page 533 of the House hearing is provided a listing of the items included in your request of $48.9 million for "other services."

ACTUAL FISCAL YEAR 1972–74 "OTHER SERVICES" EXPENDITURES

I wish you would supply a breakdown of the actual expenditures for each of those items for fiscal year 1972, 1973, and 1974 to date. That would give us a better basis for determining whether to allow the full amount of that request.

Could you supply that sort of a breakdown in time for our markup?

Mr. BUTTERFIELD. Yes.

RATIONALE FOR EMPLOYMENT LAPSE

Senator BYRD. On page 534 of the House hearings, you provided for the record a breakdown by month of your projected end-of-month employment for fiscal year 1975. That breakdown showed that you project only 51,307 positions filled as of June 1975. Since that is the last day of fiscal 1975, why is it necessary for Congress to fund 52,732 positions when by your own projections you intend to fill only 51,307 of them?

Mr. POTOSKY. Mr. Chairman, we are not asking for funding to fill 52,730 positions. We are asking for funds for man-years. Those contained in the budget amount to 50,432. The difference between our projected year end employment for fiscal year 1975 and the positions we request is 1,425. This is normal turnover lapse. It amounts to 2.7 or a little under 3 percent.

We require this lapse for operating flexibility. Conducting activites through all of our regional offices, the centers at Atlantic City and Oklahoma City and the Washington headquarters, makes it almost impossible to have employment match authorized positions because of constant actions such as resignations, retirement, school dropouts, et cetera.

POSITION REDUCTION JUSTIFICATION

Senator BYRD. On page 24 of your justifications, you show a decrease of 564 positions under your "other cost adjustments" section. What makes this decrease possible?

Mr. POTOSKY. Mr. Chairman, the 564-position decrease is associated with the Alaska and Pacific headquarters reorganization, the position reduction in the Airport Service, the savings in positions that we made as a result of modernization of the aircraft fleet, 77 positions in our air guard program and other smaller adjustments. That provides us with the total 564.

AIR TRAFFIC AND AIRWAY FACILITIES POSITION INCREASE

Senator STEVENS. Where will the additional 1,255 people you are requesting on page 2 work in your organization? Can you give us some detail on that, but also just a generality?

Mr. POTOSKY. Practically all in air traffic and airway maintenance facilties. They are in the field operating offices.

Senator BYRD. Can you give us a breakdown for the record? On page 24, you have a figure $42.9 million for mandatory pay adjustments. Is that figure based on the allowance by the Congress of the full request for 52,732 positions? I understand your answer was 52,732 positions?

[The information follows:]

Breakdown of 1,255 positions in expanded programs

Operation of air traffic control system	716
Maintenance of traffic control system	535
Development direction	4
Total positions	1,255

Mr. POTOSKY. That is correct.

MANDATORY PAY ADJUSTMENTS

Senator BYRD. What did you base your mandatory pay adjustments on?

Mr. POTOSKY. For items such as $14 million to annualize fiscal year 1974 pay raise, approximately $4.2 million for the one extra work day in fiscal year 1975, about $17 million or a little less for payments of GSA rents and security guard services. We have a $2.5 million increase for mandatory BEC payments. There is an increase of $6.3 million for the air traffic second career program. These are mandatory-type adjustments.

Senator BYRD. But if the positions aren't allowed, will that figure be correspondingly reduced?

Mr. POTOSKY. The new positions are not affected by this adjustment. By in large, these mandatory adjustments are going for what we have onboard now.

NEED FOR ADDITIONAL AIR TRAFFIC CONTROLLERS

Senator BYRD. On page 36 of your justification, you state that you need 796 additional air traffic control specialists during fiscal year 1975. Did you take into consideration the effects of the fuel situation in projecting this need?

Mr. BUTTERFIELD. Yes, sir.

Senator BYRD. Why would you need that many new people?

Mr. BUTTERFIELD. Well, we have determined here in the spring, since our original assessment of the impact of the fuel situation, that aviation was going to continue to grow by leaps and bounds. In the calendar year 1973, studies indicate that things were going down at a fairly quick rate. Now it appears they are not. So, it is based on those air traffic and air activity projections.

I would introduce Mr. Belanger, who is director of our Air Traffic Service.

Mr. BELANGER. I think we have to keep in mind that what we are doing this year in 1975 reflects how well we will operate the air traffic system in 1978. This is the kind of leadtime we need to get people onboard and to train them. I think we also have to keep in mind where we were and where we are now. For example, at the end of fiscal year 1971, we had 26,000 people onboard. Three years later, we have about 26,500, an increase of only 500 in 3 years. During that same period of time, operations at towers increased 13 percent, centers increased 8 percent, and flight service stations 17 percent. In addition, we staffed 92 additional towers and 37 terminal radar systems requiring 829 positions. We came in with a tight budget to begin with. To get it cut down like this will have a severe impact on operations.

Mr. POTOSKY. I would like to point out that applying the air traffic workload formula to our projected workload, would have given us 775 positions more than the number reflected in the budget. The reduction of approximately 775 recognizes changes attributable to the energy crisis that existed at the time.

EQUIPMENT REQUIREMENTS

Senator BYRD What type of equipment is it that $5.185 million is being requested for?

Mr. BUTTERFIELD. That is the airway facilities program, Mr. Cochran?

Mr. COCHRAN. Yes, sir. These funds will be used for test equipment such as VOR modulation meters, precision monitor calibrators, and circuit breakers, testers, for off road-type vehicles and trucks. Not the kind of vehicles that are normally obtained through GSA. But such things as graders, forklifts, snowmobiles, portable air compressors, trenchers, and hoists, for operating and working equipment such as power tools, power mowers, emergency working lights, and various other powered tools. Also for household equipment in our Government-provided living quarters. We have to have refrigerators, washers, dryers, things of that nature and for communications equipment, to be used for maintenance communications on specified maintenance frequencies.

Senator BYRD. Could any of this equipment be leased for less money?

Mr. COCHRAN. No, sir, we do not believe it can be. This equipment is used on a continuous basis, and we have a continuing need for it at a number of widely dispersed locations. We feel this equipment is needed to be owned by the Government.

Senator BYRD. What do you do with the old equipment that is replaced by the new equipment? Do you sell it?

Mr. COCHRAN. It is sold in the normal way of disposing of equipment through surplus sales. In the case of vehicles, they are traded in on the newer vehicles.

ANTIHIJACKING PROGRAM REQUIREMENTS

Senator BYRD. How much is being requested for antihijacking programs for fiscal year 1975?

Mr. BUTTERFIELD. Mr. Lally?

Mr. LALLY. We are asking for $4.9 million and 250 positions to carry out the FAA antihijacking program in fiscal year 1975. This is a 77 position reduction from the 1974 appropriation for this activity. However, we believe a higher degree of security can be accomplished with fewer people, since the program is now being conducted in the way other aviation safety activities are managed under the FAA.

Senator BYRD. I think you are to be congratulated, Mr. Butterfield, on the excellent performance in this area. What do you want by way of improvements in the program? What can you tell us?

Mr. BUTTERFIELD. I thank you for that comment, and will pass it on to our air transportation security people, to all the people on my staff and to my immediate predecessor under whose stewardship these more stringent measures were implemented. Because that is, of course, the secret to our success. That and I suppose a bit of luck. We don't discount that. There is no relaxation in sight, I would say at the outset. I say that because there are still a number of hijackings on the international scene and we are still collecting a good many guns, knives, and weapons that can be used by a potential hijacker at the boarding gates.

So, we will continue to keep in force those measures which are now in force. As I said in the highlights of my statement, we will put greater emphasis on the foreign airlines than we have heretofore. There are no funds, as you know, for continuation of air guards. The justice personnel were phased out at the end of fiscal year 1973, and the treasury personnel were phased out at the end of fiscal year 1974.

I think the best way to answer is simply to say that we will continue to follow through with the regulations which have been implemented. We are giving technical assistance to any foreign country who asks. We have a number of audio-visual programs which are quite popular. We have sent them to some 48 countries and have programs, motion pictures and other things for domestic as well as foreign flight crews.

The comments are in now and are being reviewed on our most recent notice of proposed rulemaking which does affect the foreign airlines arriving and departing from this country. Our announcement was on rather short notice and I think many of the foreign representatives indicated that they were caught off guard. It was not the most popular thing we have ever done and normally we prefer to provide more notice to those affected. Yet we felt that the action had to be taken.

Of the 42 comments received, 14 of the foreign nations agreed wholly with our notice as written and 24, I believe opposed it. Four agreed in part.

Senator BYRD. For the record, would you supply a summary of the numbers of person arrested for attempted criminal actions over the past 3 years?

Mr. BUTTERFIELD. Yes.

Mr. DOW. We can give you an indication of the first 5 months of this year. There were approximately 1,300 arrested and in addition we picked up 920 guns and something like 15,900 explosives.

Senator BYRD. Thank you. Mr. Dow.

[The information follows:]

FAA ANTI-HIJACKING PROGRAM
NUMBER OF PERSONS ARRESTED AND WEAPONS DETECTED

CALENDAR YEAR	PERSONS ARRESTED	WEAPONS DETECTED			
		Guns	Knives	Explosives 2/	Total
1972	3,483	1,283	7,267	3,530	12,080
1973	3,156	2,898	23,290	28,741	54,929
1974 1/	1,293	920	11,184	15,896	28,000

1/ January - May 1974

2/ One functional explosive or incendiary device found in each year, and other explosives or incendiary mixtures which were not encountered in a functional device and other dangerous items such as mace, tear gas, butane, straight razors, saws, swords, flares, hatchets, meat cleavers, baseball bats, spear guns, arrows, bicycle chains, firecrackers, ammunition, machetes, ice picks, etc.

FACILITIES, ENGINEERING, AND DEVELOPMENT APPROPRIATION

The next item I want to discuss is that of facilities, engineering, and development. You are requesting $13 million for this item. This appropriation provides for the development of technical data and knowledge obtained through research programs, upon which safety regulations may be formulated. It also provides for training equipment which is required by air carrier inspectors to keep them up to date with latest technology in order that they may carry out their responsibility of assuring compliance with civil air regulation and certification programs. The House allowed $12 million, and restoration of one-half of the $1 million cut is sought.

Last year, we appropriated $11.5 million for this account. What is the present unobligated balance of that appropriation?

Mr. LUNDQUIST. As of June 30, the unobligated balance was $2.5 million.

AVIATION SAFETY RESEARCH RESULTS

Senator BYRD. Do you have the authority needed to regulate foreign SST aircraft coming into this country if you find it necessary?

Mr. BUTTERFIELD. Yes, sir, we do.

EFFECT OF THREE-YEAR FUNDING IN F. & E. APPROPRIATIONS

Senator BYRD. In the next item you are requesting $250 million, the same as last year, for facilities and equipment to be funded from the airport and airway trust fund. This request would carry forward in 1975 the programs initiated in prior years to increase the capacity of the airway system and make its operations safer and more efficient. The operating costs of facilities procured under this appropriation are financed under the operations appropriations. Restoration of the full $8.9 million cut is sought.

Last year, the Congress for the first time set a limit on the availability of funds under this appropriation. The $250 million appropriated for fiscal year 1974 will be available only through June 30, 1976. Has that action had an adverse effect on your program?

Mr. POTOSKY. Not as yet, sir. The law has been in effect for only 1 year.

Senator BYRD. The House has limited the availability to June 30, 1977. Will that cause you any problem?

Mr. POTOSKY. I think it will cause us some difficulty, because many of the projects are long term requiring building construction, equipment manufacture, installation, flight check, et cetera. Some projects would take a minimum of 3 or 4 years and possibly 5. Mr. Cochran may want to add to that.

Mr. COCHRAN. No, sir, I think that is pretty well stated.

F. & E. APPROPRIATION UNOBLIGATED BALANCE

Senator BYRD. What is your unobligated balance?

Mr. POTOSKY. The unobligated balance estimated for June 30 is approximately $325 million.

Senator BYRD. Why did these funds remain unobligated for so long.

Mr. COCHRAN. A major portion of the unobligated balance is reserved for regional construction and installation, contractor surveillance, flight inspection and other work of this type. This is work that has to await the delivery of materials and equipment procured by the Washington office. In addition, because of the highly technical nature and sensitivity of the equipment being procured, manufacturing problems often occur and the solution can take a number of months, resulting in a delay in the delivery of equipment, particularly on very complex systems such as the airport surveillance radar and the ARTS II automation equipment for low activity terminals.

Furthermore, it is not always possible to accomplish the project in a timely manner because of problems with environmental clearances. The sponsor sometimes has to get clear zones for the ILS and procure land for installation of the facilities. This is becoming increasingly difficult for some of the sponsors.

IMPOUNDMENT OF FUNDS

Senator BYRD. Has OMB impounded any funds for any of these programs?

Mr. POTOSKY. No, sir, the OMB has not impounded any of our funds.

F. & E. APPROPRIATIONS FUTURE LEVEL

Senator BYRD. On page 830 of this year's House hearing, you estimate the cost for fiscal years 1976 through 1980 to be $1.25 billion for facilities and equipment. Can we expect this level of funding to continue to be needed over the long haul or will there be a leveling off?

Mr. COCHRAN. Yes, sir, we expect this level of funding to continue for the foreseeable future. With our long-range forecast for continued growth in air traffic activities and a reasonable projection of these activities, several large multimillion dollar programs are on tap for the future. Such things as upgrading the third generation air traffic control system, implementation of microwave landing systems, and the discreet address beacon system to help in the acquisition process of the radar targets, completion of the flight service station automation system and other major programs of this nature. These indicate that there will be a need for a high level of funding for the F. & E. program.

Much of our old radar, communications and NAVAID equipment is tube type. We have a long-range program to replace this equipment

with modern solid-state equipment. We foresee a fairly sizable program in the fiscal years of 1976 through 1980 and beyond to upgrade some of the older equipment and bring it up to what we are now procuring and what is available.

Senator BYRD. How much was requested from DOT for this account for fiscal year 1975?

Mr. POTOSKY. $250 million, Mr. Chairman.

PRIORITY LIST OF FISCAL YEAR 1975 F. & E. PROJECTS

Senator BYRD. Provide for the record a listing of the projects planned for fiscal year 1975 in order of their priority, showing the amount requested for each project. Can you do that?

Mr. POTOSKY. We can do that.

[The information follows:]

FY 1975 F&E Projects by Priority

	Budget Item	Project	No.	Amount (000)
1.	1a(3)	Provide Improvements to Long Range Radar	134	$ 4,821.8
2.	2a(2)	Improve Terminal Radar Beacon Antenna Systems	42	6,120.0
3.	1b(1)	Provide Add'l Disc Capability	-	3,300.0
4.	6a(1)	Provide Flight Inspection Aircraft	4	9,872.0
5.	2b(1)	Provide ARTS II	22	10,460.0
6.	2b(2)	Provide Radar Tracking for ARTS III	6	4,980.0
7.	5b(3)	Acquire Land for Airway Facility Sites	86	2,001.5
8.	2a(1)	Replacement of Interim New York CIFRR	1	24,000.0
9.	3a(4)	Remote Flight Service Stations	30	1,644.0
10.	3a(1)	Establish Type I FSS	60	900.0
11.	3a(16)	Improvement of Aviation Weather and FSS Facilities and Equipments	-	330.0
12.	3a(3)	Modernize/Improve FSS	119	6,032.3
13.	3a(6)	Est/Replace Transcribed Weather Broadcast Eqpt	51	1,318.0
14.	3a(5)	Provide En Route Flight Advisory Service	14	1,393.0
15.	6a(2)	Provide Flight Inspection 4-Engine Jet Aircraft	2	5,600.0
16.	1a(1)	Provide Air Route Surveillance Radar	4	9,244.0
17.	1b(2)	Provide 9020E Off-Line Processing	5	1,683.5
18.	6b(1)	Provide Light Jet Simulator	-	2,200.0
19.	5c	Provide Various Improvements to Navigational Aids and Air Traffic Control Facilities	-	1,600.0
20.	2c(7)	Provide/Relocate Runway Visual Range, Wind and Weather Equipments	102	2,291.4
21.	1a(4)	Provide Direct Access Radar Channel	5	5,200.0
22.	1a(2)	Relocate Air Route Surveillance Radar (studies)	2	119.0
23.	4d(1)	Establish Visual Approach Slope Indicators	91	2,446.0
24.	1a(5)	Provide Radar/Beacon Reliability Improvements	-	4,340.0
25.	2c(2)	Relocate Airport Traffic Control Towers and Terminal Radar Approach Control Facilities	9	12,685.0
26.	1c(5)	Provide ARTCC Backup Emergency Communications	-	2,626.3
27.	4c(1)	Establish Cat. I Instrument Landing Systems/ Medium Intensity Approach Light Systems and Runway Alignment Indicator Lights	-	8,548.0
28.	2a(3)	Provide Various Terminal Radar Improvements	-	6,149.0
29.	2c(6)	Provide Various Terminal Facility Improvements	-	5,452.0
30.	3a(2)	Relocate Flight Service Stations	6	1,274.0
31.	2b(3)	Provide ARTS III with add'l memory capacity and continuous data recording	62	4,382.0
32.	5b(1)	Provide for Replacement of Obsolescent Engine Generator Plants	39	1,510.0
33.	4c(6)	Establish Localizer/Marker/Approach Lights	8	2,220.0
34.	7b(1)	Data Processing Program	1	2,000.0
35.	3a(14)	Expand Service B Data Interchange and add multiplexing	10	587.0
36.	3a(7)	Provide/Relocate Weather Bureau Airport Station Teletypewriters	-	300.0
37.	3a(10)	Provide Communications Tie-in for Automatic Meteorological Observing Station	-	495.0
38.	6a(4)	Replace Ultra-High Frequency Tactical Air Navigation Aid Simulators	-	480.0
39.	6a(3)	Provide CV-580 Interial Navigation System	-	320.0
40.	4d(5)	Establish Medium Intensity Approach Light Systems with Runway Alignment Indicator Lights	18	2,133.0
41.	4a(1)	Establish/Relocate VOR/VORTAC/TVOR Facilities	-	3,731.0
42.	2c(3)	Modernize Airport Traffic Control Towers and Terminal Radar Approach Control Facilities	40	4,956.6
43.	4d(2)	Establish Runway End Identification Lights	23	307.0
44.	2a(4)	Relocate Airport Surveillance Radar	3	1,432.0
45.	5a(1)	Construct and Furnish Living Quarters	4	525.9
46.	2b(4)	Provide Various Improvements for ARTS III fac	-	5,958.0
47.	1b(3)	Provide Automated Radar Center Systems	3	10,200.0
48.	7b(3)	Air Traffic Control Systems Laboratory	-	100.0

	Budget Item	Project	No.	Amount (000)
49.	3a(9)	Establish Single Frequency Outlet and Limited Remote Control Communications Outlet	89	2,171.6
50.	1c(1)	Convert Very High Frequency Air/Ground Comm's	-	2,740.0
51.	4c(2)	Relocate Cat I Instrument Landing System/ Approach Light Systems or Components	10	1,105.5
52.	5b(5)	Provide Air Navigation Facility/Air Traffic Control Systems Support	-	4,720.0
53.	5b(2)	Provide Standby Electrical Power for Critical Facilities	37	2,996.0
54.	1c(3)	Provide, Relocate, Separate Paired Channels and Improve Remote Center Air/Ground Channels	-	8,509.5
55.	4c(4)	Upgrade Instrument Landing System/Approach Light System Facilities to Meet Cat II Standards	7	2,980.0
56.	4d(3)	Establish Lead-in Lighting Systems	2	248.0
57.	3a(15)	Improve and Expand National Communications Center	1	663.0
58.	1b(4)	Automation Improvements	2	149.9
59.	4c(7)	Add Distance Measuring Equipment to ILS	5	346.0
60.	7b(2)	Engineering Services Program	1	100.0
61.	4b(1)	Establish Non-directional H Facilities	2	68.8
62.	4a(3)	Provide 50 kHz Spacing for Navigation Aids	-	1,000.0
63.	3a(12)	Provide Rotating Beam Ceilometer and Hygrothermometer	27	1,092.0
64.	3b(1)	Modernize and Improve International Flight Service Stations	3	643.0
65.	4d(4)	Modernize Lighting Systems	14	405.0
66.	4c(3)	Improve Cat I ILSs	-	5,967.9
67.	2c	Provide Mobile Facilities	3	1,220.0
68.	2c	Establish Airport Traffic Control Towers	3	1,336.0
69.	4a(2)	Improve/Convert VOR to VORTAC Facilities	80	3,512.8
70.	1c(2)	Improve ARTCC Facilities	-	2,351.0
71.	1c(4)	Provide Misc. En Route Air Traffic Control System Improvements	-	154.0
72.	4c(5)	Provide Cat IIIa All Weather Landing System	3	1,800.0
73.	3a(13)	Relocate Remote Control Equipment	5	625.0
74.	2c(4)	Establish or Relocate Remote Transmitter and/or Receiver Facilities	33	4,062.0
75.	5b(4)	Provide Miscellaneous Utility, Equipment, and Test Equipment Improvements	268	1,392.6
76.	4a(4)	Provide VORTAC Reliability Improvements	-	1,365.0
77.	3a(11)	Provide Additional Air/Ground Channels and Voice Recorders	48	430.0
78.	2c(5)	Establish Additional Positions	48	4,178.0
79.	3a(8)	Establish, Improve and Relocate UHF/VHF Directional Finding Equipment	27	989.1
80.	7a(1)	Improve Water and Sewage Systems	1	400.0
			TOTAL	$250,000.0

NEW YORK COMMON IFR ROOM

Senator BYRD. On page 250 of your justification, you ask for $24 million to replace the New York Common Instrument Flight Rules Room. You apparently have roceeded to use funds previously appropriated for studies of this problem from an architect and an engineer to design the replacement facility.

Have you completed these studies for which the Congress previously appropriated $700,000?

Mr. BELANGER. Those studies have been completed.

Senator BYRD. Is this budget request the first time the Congress has been informed of your decision to proceed with building a replacement facility?

Mr. BUTTERFIELD. Yes, I think so.

Mr. DOW. Well, our request for advanced engineering funds which was approved by the Congress did indicate that it was prefactory to implementation of this work.

Senator BYRD. What other alternatives were considered than building a completely new facility?

Mr. COCHRAN. One alternative was to upgrade the present interim facility that is now in hangar 11 at JFK Airport. This alternative was discarded because of the nature of the space, where the facility is located and the limitations of that space.

The second one was to locate this facility with the New York Air Route Traffic Control Center. This would have required considerable construction plus the fact that it would have combined two very, very critical facilities in one geographic location and would have negated a backup capability.

The third one was to integrate the common IFR room with the New York Air Route Traffic Control Center, and we did not accept this alternative for two reasons. First, the technical equipment involved in the air route traffic control center at New York would not be able to handle the additional work. Second, the facility would be very large and complex and make it difficult to manage. This is the reason we decided upon the alternative of putting it at a separate location.

Senator BYRD. Is the traffic increasing at Kennedy Airport rapidly enough to justify this new facility?

Mr. BELANGER. The traffic at Kennedy is relatively stable. It is also stable at La Guardia. The air traffic at Newark and the entire metropolitan area such as White Plains, Westchester, and Islip, the traffic at the satellite airports is growing very rapidly.

Senator STEVENS. Mr. Chairman, may I ask a question?

Senator BYRD. Yes.

Senator STEVENS. What is the initial and overall cost of that move?

Mr. COCHRAN. The estimate for doing this project at today's cost, as included in this budget, is $24 million.

Senator STEVENS. What is the amount?

Mr. COCHRAN. $24 million in this budget plus the $750,000 previously appropriated for a total estimated cost of $24,750,000 at current prices.

AIR TRAFFIC CONTROL TOWER RELOCATION

Senator BYRD. On page 265, it is stated that you need $14,335,000 to relocate 12 air traffic control towers and terminal radar approach control facilities. Could you provide something for the record on each of those locations and explain why it isn't better to expand or improve the existing facility?

Mr. BUTTERFIELD. Yes. We will supply that for the record.

[The information follows:]

The following is a brief summary for each of the Airport Traffic Control Towers (ATCT) or Terminal Radar Approach Control (TRACON) locations that are being relocated and an explanation why a relocation is necessary.

Pensacola, Florida, TRACON $2,400.0

The Instrument Flight Rule (IFR) Room is currently located at the Naval Air Station. The facility was commissioned in 1959 in the operations building which was constructed in the early 1950's. The facility operation has expanded and outgrown its present quarters. Since FAA controllers rotate between the TRACON at the Naval Air Station and the tower at Municipal Airport, the IFR Room will be colocated with the tower. The city has agreed to provide space at the civil airport. Radar information will be remoted from the present location to the new facility.

Savannah, Georgia, ATCT $1,071.0

Radar approach control is currently provided by Hunter Radar Approach Control (RAPCON) which will be decommissioned when a programmed Airport Surveillance Radar-8 (ASR) becomes operational at the Municipal Airport, where the ATCT is now located. The tower was first occupied in 1942 and is an open steel framework structure. It is not practical to modify it to accommodate the radar operation. A new structure to replace the obsolete tower cab and accommodate the programmed radar equipment is required.

Chicago (Meigs), Illinois, ATCT $550.0

The present tower is atop a city-operated airport fire house garage. It was built in 1952 and has since become overcrowded and inadequate. Air conditioning and heating in the cab are inadequate. The structure is not watertight and leaks badly during rains. Tower visibility is restricted due to poor cab glass design and interfering steel stanchion supports.

Fort Wayne, Indiana, ATCT/TRACON $1,800.0

The tower is located atop, and the TRACON within the terminal building which was constructed in 1953. Both are inadequate for today's operation. The TRACON requires room for expansion which is not available in the

terminal building. The tower cab would be oriented better operationally if on the opposite side of the airport. Heating and air conditioning are inadequate.

Westfield, Massachusetts, ATCT $550.0

The existing tower structure was constructed in the late 1930's. It was originally an open framework structure, but has since been enclosed. Since much of the structure is wooden, a fire hazard exists. There is a problem with keeping the enclosure sealed; it is subject to moisture and air leaks. The cab shape and window design contributes to poor visibility. The cab is small and operating equipment is obsolete.

Gulfport, Mississippi, ATCT $890.0

Gulfport has an ASR programmed for delivery in calendar year 1976. The present tower cab is less than 200 square feet and is not large enough to accommodate radar displays. The existing tower built in 1958 is owned by the Mississippi Air Guard. Heating and air conditioning are inadequate. Rather than modify the existing structure extensively to accommodate an IFR Room, a new tower with room for a Terminal Radar Approach Control Cab (TRACAB) operation is planned.

Niagara Falls, New York, ATCT* $550.0

This tower was taken over from the Air Force. It is situated on a former operations building constructed in the late 1930's. The cab space is small and equipment is obsolete and in need of upgrading. Investigation is underway to determine if an extensive modernization would be economically feasible.

Toledo, Ohio, TRACON $917.0

The terminal building, in which the TRACON is located, was constructed in the early 1940's. The TRACON operating space of 312 square feet is severely overcrowded. Training is restricted and there is no room for additional required positions of operation. The TRACON is located in the terminal

building. The sponsor will provide space for the relocated TRACON by terminal building expansion.

Philadelphia, Pennsylvania, TRACON $1,807.0

The Philadelphia TRACON is currently located in the airport terminal building constructed in the late 1940's. The TRACON equipment is too small and the operational space too crowded for efficient operation. Instrument operations at Philadelphia and satellite airports have increased tremendously in recent years, creating new equipment and personnel requirements. The physical space of the IFR facility cannot, however, be expanded in the terminal building. Administrative space for training, lunch/break areas, etc., is also totally inadequate. A new TRACON, in a building across the airport from the terminal, is planned. The TRACON project will be in conjunction with relocation of the existing ATCT, which is being funded by the sponsor in a joint construction effort.

Ponce, Puerto Rico, ATCT* $550.0

Tower cab size is only 84 square feet and very cramped. The age is uncertain since we assumed operation from the Puerto Rico Port Authority, but it probably dates back to early 1940's. The tower and its equipment are both obsolete; it is located on the terminal building and there is very limited support space available. The tower operation has increased considerably the last few years due to large number of commuter flights between Ponce and San Juan.

Charleston, South Carolina, ATCT/TRACON $2,700.0

The Charleston ATCT was built atop the airport terminal building in 1949. There is only 156 square feet of floor space in the cab as opposed to 300 square feet in our comparable modern cabs. This restricted space does not allow for position expansion and restricts on-the-job training. Equipment and facilities are obsolete and modernization is not practical. The TRACON operating quarters are also located in the terminal building. It was

estimated in 1960 in space which has since become outgrown. Further expansion in present quarters is not possible due to restricted space, nor practical when age of the terminal building (approximately 25 years) is considered.

College Station, Texas, ATCT* $550.0

This tower has been operated by the FAA since 1953; the structure was formerly used at Ellington Air Force Base and dates back to the late 1930's. The structure is obsolete and will soon be considered hazardous to personnel safety. Access to the tower cab is by an outside stairway. Cab size is extremely small and not compatible with today's standards.

*Project approved through Appropriation Subcommittees for reprogramming.

AIRCRAFT PROCUREMENT

Senator BYRD. On page 347, you asked for $9,872,000 for four light twin turbojets. This will give you your complete request for these type aircraft, which total 25, which will replace 47 DC–3's. Is that correct?

Mr. BUTTERFIELD. Yes.

Mr. RUDOLPH. Yes; that is correct.

Senator BYRD. Would you state your name?

Mr. RUDOLPH. Mr. Rudolph.

Senator BYRD. Would you please provide for the record a listing of the new aircraft purchased under this account and the cost by fiscal year?

Mr. RUDOLPH. Yes, sir.

[The information follows:]

Flight inspection fleet modernization purchases

Fiscal year:	
1973: 5 Sabreliners 40's	$5, 800, 000
1972: Flight inspection avionics for 21 aircraft (including 4 light twin jets in fiscal year 1975 budget request). Reprograming approved by subcommittee letter June 19, 1972	10, 400, 000
1974: 5 jet Commanders; 11 Sabreliners 75's; and 1 turbo prop	31, 380, 000
1975: 4 light twin jet aircraft	9, 872, 000
Total	57, 452, 000

FOUR-ENGINE JET AIRCRAFT REQUIREMENTS

Senator BYRD. What would be the effect of not funding these four aircraft?

Mr. RUDOLPH. The effect would be nonrecoverable lease costs in the first year of some $831,000. Since these airplanes were already approved by the committee several years ago, they are now on the basis of lease purchase. We would lose the nonrecoverable lease money.

Senator BYRD. You wouldn't have to reduce your flight inspection care?

Mr. RUDOLPH. No; we would not.

Senator BYRD. Explain the need for two four-engine jet aircraft.

Mr. RUDOLPH. Going back almost 15 years now, Mr. Chairman, we purchased two KC–135 aircraft. One of these was placed in the Pacific to do the flight inspection work throughout the Pacific area. That aircraft a year or so ago had to be replaced because it had come to its end of useful life. To repair it would have been in excess of $1 million. So we transferred a Lockheed Electra, a short-range airplane to the Pacific. It is not capable of doing the work economically. It presently has severe corrosion, and it is going to have to go into major overhaul very shortly. That is going to be an uneconomical venture, too. The second KC–135 based in Oklahoma City and used for the South Atlantic and North Atlantic flight inspection is coming to the end of its usable life and is going to cost in excess of $1 million to repair. These two airplanes would replace the Lockheed Electra and the remaining KC–135 aircraft.

CATEGORY 1.—ILS QUALIFIERS

Senator BYRD. You are requesting $8,548,000 to establish category 1 instrument landing systems and lighting systems at various locations. Do all these locations qualify currently under your criteria?

Mr. COCHRAN. Yes, sir. When this budget was put together, all of the locations did qualify under the present criteria, of either being served by aircraft turbojet on a sustained basis or has 700 annual instrument approaches. All of them still meet the criteria except for Natchez, Miss., which fell below the 700 annual instrument approaches recently. We will defer the installation of that facility and keep an eye on the count, and if it is restored we will install the facility. If it does not requalify in a reasonable time, we would consider substituting a location which does qualify.

Senator BYRD. What about the Grand Canyon, Ariz.?

Mr. COCHRAN. Yes, sir. Grand Canyon meets the establishment for the ILS because it is served by an air carrier turbojet on a sustained basis.

Senator BYRD. How many instrument approaches does it show?

Mr. COCHRAN. I would have to furnish that.

Senator BYRD. It showed only 46 instrument approaches for fiscal year 1973, according to the listing that you supplied for the record on the House side. How do you explain that?

Mr. FLENER. I think it qualifies under the criteria of the turbojet service. As Mr. Cochran said there is a requirement for 700 actual instrument approaches except at those locations. So we have turbojets, in this case Air West. That is one of the criteria for that particular airport, notwithstanding the number of instrument approaches. It is a safety matter.

Senator BYRD. So that location meets the qualifications?

Mr. FLENER. Yes, sir.

STATUS OF WRANGELL AIRPORT INSTALLATION

Senator STEVENS. Mr. Chairman, could I get a little provincial and ask about some matters up in Alaska? I was informed that the State had expected the Wrangell Airport installation by the spring of 1975. Now I understand from a letter by the FAA the equipment will not be commissioned until the end of calendar year 1975. Can you tell me what the current status is at this point for Wrangell?

Mr. COCHRAN. Yes, sir, I can. On the basis of being able to rearrange some equipment delivery, we expect to have an equipment delivery at Wrangell in March 1975, and the region with a reasonable break in the weather will have it in commission status by June of 1975.

STATUS OF PETERSBURG LOCALIZER

Senator STEVENS. What is the extent of the localizer for DME at Petersburg?

Mr. COCHRAN. This is one we still have under study, and we have been looking at it very carefully. We have a number of problems at Petersburg. The construction costs at Petersburg are unusually high

because of siting problems. Additionally, the kinds of minimums that we can anticipate for the facility have caused us to study this in great detail. Ceiling less than 2,160 feet is very improbable. Visibility will probably be 3 miles but not less than 2 miles. This is also dependent upon waivers to procedures.

The localizer signal would have to be directed at almost right angles to the runway because of the mountainous terrain on three sides of the airport. We are still actively pursuing the problem and we hope to have the answer in the near future.

Senator STEVENS. I appreciate that. They have a large fishing industry up there. They tell me they will not be able to deliver their fresh food if something isn't done. They are quite concerned about this. I would like you to tell me whether you would advise the State to relocate the airport. I know the terrain there. I am sure some of you do, too. But they have got to have an airport if they are going to get their shipments of fresh food out.

STATUS OF TOKYO ROUTE THROUGH SOVIET AIRSPACE

I have two other questions. Mr. Butterfield, what is the status of the attempt to get a more northerly approach toward Tokyo through Soviet airspace? I raised that question last year, and I am told by my friends who are pilots that is is going to affect a considerable saving of fuel if they can go over the Kamchatka Peninsula. I am told it is just 50 miles of Soviet airspace. Has there been any progress made in that at all?

Mr. BUTTERFIELD. Mr. Belanger?

Mr. BELANGER. We have been pursuing that project for the past year. We have discussed this at the ICAO meeting. We sent a team to Japan to discuss the technical aspects for negotiation up in Montreal with the Russians. Unfortunately, for reasons I cannot explain, the negotiations with the Russians took a rather sour turn. They didn't seem to be as receptive as they were in the meeting in Honolulu. We are still actively pursuing it.

Senator STEVENS. Do we have any reciprocity rights for airspace in connection with air flights?

Mr. BUTTERFIELD. No.

GENERAL AVIATION ADMINISTRATIVE USER CHARGE

Senator STEVENS. Then the last question. Is there anything in this bill which institutes your hope for additional user charges on general aviation?

Mr. BUTTERFIELD. No, there is not, sir. Are you talking about administrative user charges?

Senator STEVENS. Yes. There is a proposal, as I understand, that would propose greater charges on general aviation use than they paid in the past in effect to bring about a new cost-sharing concept. We discussed this with the Secretary. I just wonder if you have anything in this bill at all we don't know about that initiates any of that change?

Mr. POTOSKY. The budget, as presented to you, does not contemplate

the imposition of any new administrative user charges for such things as certification of airmen and aircraft.

Senator STEVENS. No, there wasn't?

Mr. POTOSKY. The House has put a restriction on any changes to user charges, and as the Secretary said, it would represent a burden. It is not the proposed administrative user charges that are of immediate concern to us. A hard legal interpretation of the language might not permit us to change fees for duplicating records, aircraft landing and parking at NCA, rents, utilities, and so forth. I think there ought to be clarification of the House language since I do not believe the language was intended to apply and did not apply in fiscal year 1974 to these type of charges.

Senator STEVENS. What is the plan? You did announce something of a plan toward shifting some of the cost to general aviation.

Mr. BACON. There are two areas of user charges and we should deal with them separately. First, Department and FAA have been and are continuing to examine the means of allocating the cost of the aviation system among its users. This study is normally referred to as the "User Cost Study" called for by the Airport and Airways Act of 1970. Part 1 of the Department's report on this study has been submitted to the Congress. However, the Secretary has not yet submitted part 2. It has been delayed to permit concurrent examination of the additional impacts upon aviation which are accruing from the energy crisis and the inflationary trends of our economy.

The second type of user charge, administrative user charges, are intended to recover actual FAA costs for those type of services which are rendered directly to individuals for their specific benefit. Recovery of those costs, of course, is required by earlier congressional legislation.

Mr. BUTTERFIELD. Presumably, it has been $30 million.

Senator STEVENS. I am sure we would like to help. If you can clarify this. Could you give us a little listing for the record of what you consider the administrative-type user charges that you are talking about, such as reproduction of documents, so we could see what general type of charge you want to increase administratively as opposed to the kind that we are, I think, all believing that Congress ought to have a good look at, and this is the imposition of new user charges.

Mr. BUTTERFIELD. Yes, in fact we have that. We have a breakdown of kinds of administrative services.

[The information follows:]

ADMINISTRATIVE SERVICE EXAMPLES

A literal interpretation of the language in Section 315 of H.R. 15405 might prohibit the agency from imposing fees for new services or increasing fees for normal, on-going activities, such as for aircraft landing and parking at Washington National and Dulles International Airports, concessionaire permits, rental of space, furnishing of utilities, furnishing of aircraft registration certificates, recordation of security conveyances, copying and certifying records, etc. Based on the testimony in the 1974 Senate hearings and the language in the House Report (93-285) and Senate Report (93-346) on the 1974 appropriation bill, FAA believes that the Congress intended this restriction to apply only to new administrative fees for certification of aircraft and airmen. Since the House language in Section 313 of H.R. 15405 is identical to that in the 1974 appropriation act, FAA assumes that it should be interpreted in the same manner as last

year, i.e., that the restriction pertains to new administrative fees for certification of aircraft and airmen and not to the normal, on-going activities of the agency, similar to those mentioned above.

INCREASING LICENSE FEES

Senator STEVENS. If it includes Xerox charges then you want to raise it from 10 to 15 cents, that is one thing. But if you are talking about increasing charges for Federal aviation and pilot licenses, I think we would want to take a good look and see if we want to discuss the matter with the House.

Mr. DOW. The other major areas are landing fees at Washington National and Dulles, for example.

Senator STEVENS. Thank you, Mr. Chairman.

RESEARCH, ENGINEERING, AND DEVELOPMENT APPROPRIATION

Senator BYRD. The next iem is research, engineering, and development, for which $70 million is requested. Funds for this account come from the airport and airway trust fund. This request includes authorization for 945 positions, which is an increase of 302 over the 1974 level. It provides for engineering and development programs to improve the national air traffic control system and to increase its capacity to meet air traffic demands of 1975 to 1985 time period.

These programs are conducted under the direction of the agency's personnel through contracts with private firms, universities, individuals and other Government agencies.

The House allowed $55 million and full restoration of the $15 million cut is sought.

In your annual overview report on your engineering and development programs, you state that the fiscal 1975 program was prepared before the impact of the energy crisis could be properly evaluated, but that as new traffic forecasts are developed, the engineering and development plans in that report will be evaluated and some changes can be expected.

Are you prepared to state those changes at this time?

Mr. LUNDQUIST. The energy crisis was one that shifted from shortages to one of high pricing. Our engineering and development program is a long-term program laid out to upgrade the total air traffic control system. It is not intended solely to increase the capacity of the system. It is also geared to improve the safety and efficiency of the system and also to establish the basis for future cost reductions in the operation of the system by making it less human intensive. The program is not affected by minor fluctuations in the air traffic projections. Certainly, the traffic changes resulting from the short-lived energy crisis have not warranted making any changes in our engineering and development program.

Senator BYRD. In the area of air traffic control, how does the U.S. system compare to other systems around the world? Would you say that we have the best program of air traffic control?

Mr. BUTTERFIELD. Yes, sir. I would say without question we do. I hesitate to pat us on the back without justification.

MICROWAVE LANDING SYSTEM

Senator BYRD. You request $10,955,000 for landing systems research. How much of that is for the development of the microwave landing system?

Mr. LUNDQUIST. $8.2 million is for the MLS.

Senator BYRD. When do you plan to have the MLS's in operation?

Mr. LUNDQUIST. We plan to start making our first operational installations of the national standard MLS system in fiscal year 1978. We have just recently completed the phase II feasibility demonstration program. In March 1975, we will select either the conventional scanning beam or Doppler scan technique for further development in the phase III, prototype development program.

Senator BYRD. How much would it cost the pilot to put this equipment in his plane?

Mr. LUNDQUIST. It depends on the level of service he wants and his type of aircraft. It would vary from $5,000 for a simple Gerard aviation type system to about $20,000 for a commercial airline aircraft.

Senator BYRD. How long do you plan to allow for the phasein of this new equipment to permit the people who purchase the existing instrument landing system in their aircraft to get full use out of it?

Mr. LUNDQUIST. We plan to allow 15 years from the start of implementation of the MLS to the complete phaseout of the landing system.

Senator BYRD. Will the MLS have any ability to reduce the noise from aircraft?

Mr. LUNDQUIST. Yes, sir, the more sophisticated versions of the system will permit curved approaches and steeper glide slopes to reduce noise impact on the ground.

GRANTS IN AID FOR AIRPORTS APPROPRIATION

Senator BYRD. Public Law 91–258, the Airport and Airway Development Act of 1970, provides for grants in aid for the development and improvement, as well as planning, of public airports. The act authorizes grants in the total amount of $325 million annually for fiscal years 1974 and 1975. Of that amount, not to exceed $15 million is to be used for planning grants and the remainder of the $310 million is for airport improvement projects.

The fiscal 1975 request is for an appropriation of $13 million for planning grants along with $280 million in liquidating cash. In addition, the FAA seeks the full obligation limitation of $310 million provided in general provision 302.

The House version of the bill provides all of the liquidating cash and the full obligation limit requested, but allows no funding for planning grants. FAA seeks restoration of $5.5 million for those grants. How is the planning grant program being administered?

Mr. VITALE. The planning grant program is administered by the FAA. It starts with the determination on the part of the sponsor on the need for a project. The field office reviews the application in an attempt to iron out any difficulties before the project is approved. The smaller projects are approved in the district offices, and that is, master plans. The system plans and larger master plans of $25,000 or over are approved at the Washington level.

PLANNING GRANT UNOBLIGATED BALANCE

Senator STEVENS. How much is unobligated for planning grants now?

Mr. BUTTERFIELD. I think at the time that the House considered this budget we had almost $5 million obligated and $14.7 million unobligated. Now, the balance is $9.5 million, and we are asking for $5.5 million restoration, which will bring us up to the $15 million.

Senator STEVENS. Do you think you can obligate that amount in the next fiscal year? Is that 1 year's money?

Mr. BUTTERFIELD. To answer that question, I would have to defer to Mr. Vitale.

Mr. VITALE. Yes, sir. We believe we can, with four-fifths of the States now embarking on the establishment of a basic airport system plan. We look to extensive funding of continuous planning at the State level during fiscal year 1975. That is where this will come into play. The concept of funding a continuous updating of the State airport plans was started in fiscal year 1974. We are also looking to the establishment of "continuous" planning programs for the larger metropolitan and regional areas. With this added dimension to systems planning and fund requests, we can estimate a demand of approximately $6 million for systems planning funds in fiscal year 1975 and each year thereafter. This combined with an expected master plan activity level of $9 million justifies a $15 million apportionment.

DEVELOPMENT GRANT UNOBLIGATED BALANCE

Senator STEVENS. Last year, the Senate raised your obligation limitation from $280 million to $310 million and compromised on $300 million. Then I am told you only obligated $280 million. Did OMB limit you last year?

Mr. BUTTERFIELD. No.

Senator STEVENS. What is the reason you requested for restoration and obligated $20 million less? You obligated the amount that the House allowed.

Mr. Dow. Right now the reports of the accounting system indicate that there is some $280 million obligated. I think the airport records will reconcile the accounting records to approximately $300 million.

ALASKAN PIPELINE ACTIVITY

Senator STEVENS. Is this the money you are taking out for the new planning of Alyeska?

Mr. Dow. Gulkana will get a grant out of this program.

Senator STEVENS. I hope you get an alternate jet route. There are no alternate jet routes between Valdez and Fairbanks except through Canada. I understand it is too short for any big jets.

Mr. Dow. Our understanding is that the State has said they will go to 6,000 feet runway while Alyeska wants to go to 7,000 feet, and right now the State is saying, Alyeska, you pay. We have approved development grant for the paving of what is in there now. That actually comes out of the $300 million obligated for airport development grants and not the $5.5 million for planning grants that we are talking about.

Planning grant funds are not limited to 1 year. However, there is a $15 million limitation for each year, but this $9.5 million that was not obligated will carry over to the next year. So it is multiyear money, except that you can't exceed $15 million in total in any one year. Senator Stevens let me say something about the pipeline. It looks like the beachhead in Normandy. Have you ever before delegated to a private contractor the rights to coordinate the activities of an airport? It is my understanding that the planes going into those some 12 strips, that Alyeska and the contractor, Bechtel, is not being coordinated directly through the air traffic controllers.

Mr. BUTTERFIELD. That I didn't know. We just had some people come back from there, and they have submitted recommendations on them.

Senator STEVENS. I would like an opportunity to go over that with you. I don't want to increase their administrative burden. At the same time, those people flying that route who aren't associated with that pipeline construction are being controlled. Alyeska is being controlled. To my understanding, that could lead to some interesting problems when you have a lot of new contractors. I hope we don't get too many. But we get some that don't know that terrain.

Mr. BUTTERFIELD. Perhaps Mr. Dow can answer, because he has been up there more recently than I. The subject is of concern to us, too. It isn't something we are dismissing. We are putting out a book on this concerning approaches and terrain, that sort of thing, which is one small step in the way of enhancing safety. I am very much concerned and we will stay close to it. This is the first I have heard of the problem.

Mr. Dow. I have spent about 10 days flying the pipeline. Alyeska requested a restricted area down the pipeline. Right now, the Alyeska strips are limited to traffic associated with pipeline construction. Of course, what they want to do is minimize tourists. One question was who retains control of the airport. There is talk of Alyeska turning the strips over to the State which would make these public airports. But actual separation in controlled airspace is still being done by the FAA. The question now is do we increase the configuration of the airspace.

Senator STEVENS. I know that Wiseman is just about 8 miles away from the new strip at Dietrick. Alyeska is controlling that they have a proprietary interest. I can understand why they would control access to their own airport, but I don't see how you can restrict traffic in the same area. If I understand what you are saying, you are saying you have total control over all traffic up there?

Mr. Dow. As long as they are IFR along the air route from Valdez.

NATIONAL CAPITAL AIRPORTS APPROPRIATION

Senator STEVENS. Turning now to items 24, 25 and 26. Your request is for $23,700,000 for the National Capitol Airports. Of this amount, $16.5 million would be for operation and maintenance and the remaining amount of $7.2 million for construction. The FAA is requesting that the two accounts shown as 25 and 26 on our charts for operations and construction, respectively, be consolidated into one account called simply National Capitol Airports. That appears as item 24 on the chart.

If this committee allows you to do that, in the future we would only have one account for National Capitol Airports, but there would be provided in the justifications a breakdown showing the amount requested for operations and for construction. Is that right?

Mr. Dow. Yes, sir, I understand the House kept the account separate, and we did not appeal it.

Senator Stevens. The House bill reduced O. & M. to $16 million and construction to $4.2 million. FAA asks that the full $3 million cut to the construction account be restored.

You did not appeal the amount for OMB?

Mr. Butterfield. That is correct, sir.

Senator Stevens. You still wish to consolidate the accounts?

Mr. Potosky. No, sir; we do not.

Senator Stevens. But is it still your desire in the future to consolidate?

Mr. Potosky. It would provide some reduction in administrative work. The OMB as well as the Treasury Department, and I think most Federal agencies prefer to have smaller accounts consolidated. There is an advantage to a consolidation. It still permits complete accounting and program disclosure. In effect we account by activity within the one account.

PROFIT AND LOSS AT DULLES AND NATIONAL AIRPORTS

Senator Stevens. But you are willing to let it go for this year. What is the estimated net loss to the Government for fiscal 1975 for these two airports?

Mr. Butterfield. Mr. Murphy?

Mr. Murphy. On operating and maintenance cost versus revenue, Senator, we will be in the black at both airports. But the application of depreciation and interest to the Dulles account will result in a net loss of $213,000.

Senator Stevens. What is the trend as far as Dulles goes? Do you anticipate greater use there in future years?

Mr. Murphy. Yes, sir. We anticipate an annual 8 to 10-percent increase in passenger service.

Senator Stevens. Is this the first year you have been in the black?

Mr. Murphy. No. On a revenue versus operations and maintenance basis we were also in the black last year.

NATIONAL CAPITOL AIRPORTS BICENTENNIAL IMPROVEMENTS

Senator Stevens. What are the Bicentennial improvements for which you ask $890,000?

Mr. Murphy. Basically, as you know, sir, the facilities at National are tired. We intend to renovate the external and internal facilities, replacing wind barriers, rejuvenating the wall panels in the main terminal lobby; better landscaping; new North terminal facing and, very importantly, a total redesigning of the airport.

Mr. Butterfield. I think I would put emphasis on the general exposure of National. It should be a model airport. It does have a great potential, and it should be realized.

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SECURITY OF AIRPORT PARKING LOTS

Senator STEVENS. Let me ask one side question. Two years ago, we asked you to solve the security of the parking lot at both National and Dulles. How has that worked out? Have we had continued destruction there or is that working out pretty well?

Mr. MURPHY. We have a contract with the Burns Detective Agency that applies security checks at the congressional lots at both the north and main terminals. Identity of the member is ascertained before admission is granted for entrance.

Senator STEVENS. But is the vandalism still occurring to the cars that are parked there for over a long period?

Mr. MURPHY. I think overall, for any public facility, the security is exceptionally high.

DULLES RAMP EXPANSION

Senator BYRD. Why do you need to enlarge the existing ramp facilities at Dulles for which you are requesting $3 million?

Mr. MURPHY. Sir, when Dulles airport was originally designed back in the 1950's, the designer envisioned a maximum wing span of 160 feet, which can accommodate the stretch DC–8 aircraft. But the 747 needs 196 feet. Right now it is most difficult to maneuver one 747 past another on the ramp. When a 747 taxis by a parked Boeing 747, we have to go into counterflow maneuvers, and on many occasions have to use airline employees to direct the plane, wing-walkers if you will. The design work for this ramp will be completed in March of 1975 and construction, since it has to be phased in such a manner as not to impede the operation will not be completed until 1977.

I suggest that by 1977, we will have a very severe operational problem on the ramp if the ramp is not expanded. I do have for your information a chart showing a 747 parked and a 747 taxiing by. As you can see, there is an actual overlap of the wings. You get around that by having the taxiing plane moving right on the edge of the pavement with a wing-walker giving only 12 feet clearance. With the growth that we want to see in the airport, we can't inhibit that growth with such an operational constraint. I think that the ramp expansion is vital.

Mr. BUTTERFIELD. I think there is some reason to believe that the House reduced this, assuming that airplane operations were beginning to taper off. Now, since there has been some deviation, they are putting them back on.

PARIS DC–10 CRASH

Senator BYRD. In March 1974, a U.S. manufactured DC–10 crashed near Paris. At that time, all the newspapers printed several articles indicating that the FAA should have made its recommendations for certain changes in the design of the cargo door of the DC–10's mandatory rather than allowing the manufacturer to voluntarily comply with the recommendations. Apparently the plane that crashed did not have the necessary changes made to its cargo door.

Has it now been finally determined that the cargo door caused that crash?

Mr. BUTTERFIELD. Officially speaking, we cannot make a determination until the French have completed their findings. They have not advised me of this finding. But speaking in the larger and real world, yes, we have reason to believe the door not only was the contributing cause but the primary cause. However, we do want to examine all the factors when the French findings are available.

Senator BYRD. What has been done to assure that no other DC–10's will have the same cargo door problem?

Mr. BUTTERFIELD. In a word, within a few hours after receiving notification of the possible failure of the cargo door on that particular turbine airline aircraft, I asked Mr. Bakke, who was then our Associate Administrator for Aviation Safety, to form an ad hoc task force to review the entire certification history of the DC–10 and our role in that. That study is completed and has been submitted to me. We issued within 48 hours after that an airworthiness directive which made certain that pertinent Service Bulletins were accomplished and which sufficed to correct the problem before the plane could again fly. Since then, we have amended that airworthiness directive and have added three other series of Douglas Service Bulletins. In May, we put out another final airworthiness directive. So the initial airworthiness directive made the airplane altogether safe.

I am satisfied it is safe. I have met a number of times with the McDonnell-Douglas technical experts. I have visited Lockheed and Boeing as well, and we had a 3-day conference on this whole business as to wide-bodied aircraft and pressure containers.

I think the manufacturers and airlines have cooperated to the fullest, and we are out of the woods. It is a shame it happened.

FUTURE AIRPORT DEVELOPMENT

Senator BYRD. How do you see the future as far as building major new airports is concerned? Have we reached the point where it is unlikely that such development will be feasible?

Mr. BUTTERFIELD. For regional, larger airports such as Dallas-Fort Worth Airport, I would say, to be completely candid, we have been pushing the creation and building of airports as well as improving the standing, existing airports until such time as the Secretary issued his transportation policy statement a few months ago. We are basically concerned now with Secretary Brinegar's comments, his theme being because of the unpopularity of airports and we absolutely must begin to rectify the ills of the airports around the country and do something about the congestion and do something about the landside problems and make airports more popular and then go on from there.

In other words, there is more to do than we have done, we can't sit back and feel we have improved and reduced congestion as much as we like. So, we are following through, and all of our key people have been explaining that to the aviation communities.

Senator BYRD. Under the heading—maintenance of traffic control system—on page 72, you show a need for an additional 504 personnel. How do you determine your maintenance personnel requirements? Who devised the formula?

Mr. BUTTERFIELD. Mr. Cochran?

Mr. COCHRAN. Our workload formula was used in developing our requirement for 479 of the 504 additional positions requested. We are requesting also 25 positions to expand our Equal Employment Opportunity program. The 25 positions requirement was not derived from the workload formula, since these positions will be used to recruit minority trainees who will then be trained to eventually take their place in the maintenance workforce.

The formula used in developing our position requirements is published as an official DOT–FAA document, Order 1380.9D, dated August 8, 1973. This formula was initially developed by FAA with the sanction of the then Bureau of the Budget, approved by our Director of Airway Facilities, the office of prime responsibility, and coordinated with our budget and management services offices.

The workload formula or staffing standard, represents man-hour or time requirements for maintaining the various types of facilities in the national airspace system. The man-hour requirements were established in a number of ways. In general, however, workload for existing facilities was measured by use of worktime reports over an extended period and covering the entire spectrum of facilities. The worktime reported was used as the basic workload formula with timely adjustments dictated by experience and engineering and management judgment. That is, when significant differences between workload formula and maintenance requirements were observed on specific facilities or systems, studies have been conducted to establish more valid workload standards.

For new and modified facility types entering the system, engineering estimates of maintenance requirements are employed as initial workload formula. As these facilities become established, the workload formula is adjusted in the same manner as for other existing facilities. Right now, we are engaged in a broad Agency effort, in coordination with the Department of Transportation, to revise or revalidate our workload formula in its entirety. We hope to have these revised data for use in developing our staffing requirements in fiscal year 1977.

Senator BYRD. There are some additional questions that I want to submit to you that you can answer for the record.

Mr. BUTTERFIELD. Yes, sir, we would be happy to.

[The questions and answers follow:]

Q. What methods and procedures do you use in determining the needs of the National Air System as far as new facilities and equipment are concerned?

A. For many new facilities and equipments the FAA has developed establishment criteria which are primarily based on air traffic demand since volume of traffic is a tangible and measurable indication of the need for air navigation facilities and air traffic control services. However, these criteria do not encompass all situations and requirements which arise. A true aeronautical requirement may exist for facilities, equipments, or services that cannot be meaured with reference to the volume of air traffic activity alone. Other factors are considered, such as adverse terrain features, frequent occurrence of severe weather phenomena, remote or isolated locations wherein air transportation may be the only or primary means of access and other local conditions that can adversely affect aircraft operations or the safety of the flying public. If the investment and circumstances dictate the need, a comprehensive study including a cost/benefit analysis is conducted to determine whether the facility or service justifies establishment.

Q. What is the status of SST research at this time? Have any conclusions been reached about their potential effect on the stratosphere?

A. The only FAA efforts associated with SST development are those efforts being completed under the terms of the termination of the SST contracts.

We are not aware of any SST research being conducted by any other Government Agency other than NASA.

In FY 1971, OST initiated a program to assess the potential environmental impact of large-scale flight operations in the stratosphere. This program is known as the Climatic Impact Assessment Program, or CIAP.

Under this program, the CIAP office has funded and directed a major program of data collection, test, and analysis. The present goal is to publish the results of these endeavors in a set of six monographs which, together with a DOT report of findings and conclusions, will be presented to Congress at the end of this year. The National Academy of Science and the National Academy of Engineering are reviewing this work and will formulate their independent findings and conclusions in a joint report at that time.

OST will continue the effort to publish the refined monographs through FY 1975 but will hand-off the on-going effort in data collection, regulatory action, and possible associated monitoring to FAA. We have requested $1.8 million for this effort in FY 1975, supplementing the $3.2 million requested by OST. The need for a magnitude of FAA effort in FY 1976 and beyond is not yet clear, and is now under study by the FAA. The uncertanty of this program in future years is especially due to the deferment of large-scale SST operations.

The results of testing to date indicate that emissions from "current technology" engines could conceivably result in a breakdown of some of the elements of the stratosphere. The concern is as to whether this would result in temperature variations on the earth.

NASA has a program for Supersonic Cruise aircraft research for which they have requested R&D funds in FY 1975. This program covers research in air dynamics propulsion structures and stability and control technology applicable to future supersonic aircraft both military and civil.

Q. The next item is Research, Engineering, and Development, for which $70,000,000 is requested. Funds for this account come from the Airport and Airway Trust Fund. This request includes authorization for 945 positions, which is an increase of 302 over the 1974 level.

This appropriation provides for engineering and development programs to improve the national air traffic control system and to increase its capacity to meet air traffic demands of the 1975–1985 time period.

These programs are conducted under the direction of the agency's personnel, through contracts with private firms, universities, individuals, and other government agencies.

The House allowed $55 million: full restoration of the $15 million cut is sought.

Why do you need such a large increase in personnel? Is this the result of combining two accounts? Explain that to the Committee.

A. The apparent increase in requested positions in FY 1975 is generated by adjustments within two appropriations through which distinctive types of engineering support are provided. In FY 1974 a significant portion of our automation program was funded in the Facilities and Equipment appropriation. In FY 1975 these programs have been reinstated into the Research, Engineering and Development appropriation request.

The increase in positions mentioned is a direct reflection of the shift between appropriations. The total positions required to support the engineering and development program actually have been reduced by 89 positions.

Q. On page 390, you asked for $9,168,000 for en route control research. Did the NAS Stage A program come under this heading? How much has it cost us to put that system into effect? How does this continued research tie into that system?

A. Our request for $9,168,000 for en route control in the R, E&D appropriation does not include any implementation aspects of the NAS Stage A program.

The estimated cost of the NAS Stage A system including fiscal year 1974 appropriated funds will be $618,600,000. This figure does not include the costs for a digital backup display system for which acquisition had been deferred.

The Stage A program will be completed by mid-1975 when the last of the twenty ARTCCs will begin operational use of the Radar Data Processing (RDP)

program. At the present time all twenty ARTCCs have implemented the Flight Data Processing program and by the end of FY 1974 nine will be utilizing RDP.

Major R, E&D efforts that tie into the system will include:

(1) Completion of a computer program architecture study to increase the processing capability of the enroute ATC computer system.

(2) Continuation of the development and testing of DABS interface, Intermittent Positive Control, and data link interfaces and applications.

(3) Development of an automated flight plan probe capability that will assist the controller in planning conflict-free flight paths and a "fail-soft" capability to enable continued en route system operations using only one of the ARTCC's computer elements.

Q. On March 8 of this year, I requested your staff to present a briefing to Subcommittee members as well as any other interested Senators regarding your plans to modernize your flight service stations. I understand that briefing was well attended and it was useful in providing a better explanation of this program than we had previously received. Can you or a member of your staff give us the highlights of that program now with particular emphasis on your plans to remote 30 stations during fiscal 1975?

A. There are two separate and distant elements regarding our flight service station (FSS) modernization concept.

One is the problem we face with effectively running the system today, and the other is the automation of the system, bringing it into the jet age. They are directly related in that we see no way of moving into an automated system without also moving forward in a consolidation program to more effiectively operate the system.

Ninety-five percent of all FSS functions are done in a remote mode. Only five percent of the flight plan filing and weather briefings are face-to-face with the pilot. Modern technology permits us to remote these functions to any location within the country. The functions we would be remoting to a consolidated station would include the air-to-ground communications; the transmitter and receiver would be left at the existing station. The direction finding equipment would also be remoted. The pilot weather briefing would be by toll-free service from the existing location to the consolidated location. The same would be true of filing flight plans and processing.

There has been concern about the possible loss of weather observations currently taken by FSS personnel at some locations. Many of the locations we are consolidating currently have an FAA tower and seven of them in this year's budget also have a National Weather Service reporting 24 hours a day. In addition to this, we will provide contract weather observations. Therefore, there will be no loss in weather observation service. It is our intent to improve the availability of weather information. Currently the weather is available at locations where there is a tower or FSS or a National Weather Service office. We have inaugurated the En Route Flight Advisory Program that provides a dedicated discrete frequency covering a large radius that allows for timely exchange of pilot reports to and from aircraft in flight. This program is meeting with a high level of success on the West Coast.

There is concern that the airport advisory service provided by some flight service stations would be lost. The flight service station operator cannot generally observe the airport itself and must rely on the fact that the pilot tells him he is in the pattern. This is not a mandatory program. At 10,000 airports without a flight service station or tower this function is provided by pilots talking to one another or to the local fixed base operator on a UNICOM frequency.

The demand for flight services has increased rather dramatically in the last decade, 190 percent, along with 42 percent more airports and 53 percent more general aviation aircraft.

To keep up with the demand we have done a large amount of consolidation during the past 10 to 20 years. We once had 489 stations. Today, there are a total of 320, of which 282 are in the conterminous United States. Our current program relates only to these 282. In spite of the consolidation and improved techniques, we still are not meeting the demands in the present system.

For example, during 1973 the lost calls at 13 of our major flight service stations were nearly one quarter of a million. A lost call is a situation where a pilot calls in for a weather briefing or to file a flight plan and we were unable to answer the phone.

Our principal problem is one of distribution—having the people distributed to where the workload is. As an example, at one facility where we have 880,000 flight services per year we have 26 people averaging 33,800 flight services per man. Another facility with lighter activity—20,000 flight services per year with minimum staffing for a 24-hour station of five people averaging only 4,000 flight services per man. Obviously the pilots and aviation community get excellent service in the latter situation where there are only two to three flight services per hour. Put another way, eight of the actual locations proposed for consolidation average 6,760 flight services per specialist per year at a cost of $5.10 to the public per service. Our busier facilities are averaging, and this is not the peak, 25,000 flight services per specialist per year at a cost of $1.80 per service to the taxpayer. Again, our problem is distribution.

Through consolidation there is no deterioration of safety. In fact, in many respects services are improved by the availability of more sophisticated equipment at larger flight service stations, such as weather radar.

All people at any flight service station will be placed and many will receive a promotion by virtue of moving to a higher activity facility. We will make every effort to ensure that relocated FSS personnel go to a station of their choice. Government regulations provide for the personnel to be reimbursed for their move, including cost of selling their home, personal transportation, household move, house-hunting trips and an allowance for incidental household goods related to a transfer.

A bona fide concern is the social impact on the community that the people will be leaving, of friends leaving friends. The potential economic impact should be slight as most of these stations consist of from 7 to 10 men.

We have under development an automation research project for flight service stations. Our target date for completion of the test program is roughly 1978; completion of the implementation phase somewhere between 1983 and 1985. This places us in quite a dilemma. If we continue to operate the present system at our current level of service through 1983, the existing cost will rise from $86 million a year to $250 million. Personnel rising from some 4,000 to 11,000. Immediately following this sharp rise, the proposed system will come into being costing about $69 million in current dollars and requiring only about 2,200 flight service specialists. That leaves us the choice of either not providing services and letting services deteriorate through 1983; or building up the workforce through 1983 and suddenly going from a workforce of 11,000 down to 2,000 people roughly overnight. Overall, this would be costly and totally unfair to the people operating the system.

We need an orderly evolution from the present system to the automation system. Just as we moved from 489 down to 320 total flight service stations in this timeframe we need to move from 282 in the domestic United States down to 138 in the next three to four years. Our plan would be to then hold at the 138 stations until the automation system is completely developed and proved out. At that point, we would then proceed with the automation program.

[The information follows:]

FSS CONSOLIDATIONS
FY-75

Location	Receiving Facility	T - Tower W - NWS	Proposed Wx Obs.	NWS Requirement	Facility Complement	Annual Flight Services	Flight Svcs. Per Specialist	Remarks
·ron, Colo.	Denver	No	Contract	Yes	6	34,786	5,798	
Alexandria, La.	Lake Charles	W - Part Time T - Mil	NWS/Contract	Yes	10	109,229	10,923	
Bristol, Tenn.	Knoxville	W T	NWS	Yes	5	55,088	11,017	FSS 06-22
Brunswick, Ga.	Savannah	T10-1800	Tower	Yes	11	142,312	12,937	Tower 16hr in FY-75
Bryce Canyon, Utah	Cedar City	No	Contract	Yes	5	30,357	6,071	FSS 06-22
Charlottesville, Va.	Richmond	T07-2300	Tower	Yes	8	94,263	11,782	
Dallas, Texas	Ft. Worth	T	Tower	Yes	35	502,738	14,363	
Elmira, New York	Utica	T	Tower	Yes	13	164,198	12,630	
Hill City, Kansas	Goodland North Platte	No	Contract	Yes	4	16,517	4,129	
Houlton, Maine	Bangor	No	Contract	Yes	7	59,087	8,441	DF remoted to Bangor
Key West, Fla.	Miami	W T06-2200	NWS	Yes	10	99,757	9,975	
Joplin, Mo.	Springfield	T08-1600	Tower	Yes	9	113,512	12,612	
Livingston, Mont.	Bozeman	No	Contract	No	6	31,515	5,252	Contract 16 hours
Lone Rock, Wisc.	La Crosse	No	No	No	5	43,743	8,748	
Marysville, Cal.	Sacramento Red Bluff	T09-1700	No	No	10	102,866	10,286	Beale AFB 24 hr obs
Myrtle Beach, S. C.	Florence	No	(Tower)	Yes	5	105,726	21,145	Tower due FY-75

Location	Receiving Facility	T - Tower W - NWS	Proposed Wx Obs.	NWS Requirement	Facility Complement	Annual Flight Services	Flight Svcs. Per Specialist	Remarks
Ottumwa, Iowa	Des Moines	No	Contract	Yes	7	95,034	13,433	
Paducah, Ky.	Bowling Green	T	Tower	Yes	8	103,615	12,951	
Pine Bluff, Ark.	Little Rock	T07-2000	Tower	No	21	269,015	12,810	Tower 16 hrs in FY75
Ponca City, Okla.	Tulsa	No	(Tower)/ Contract	Yes	13	101,911	7,839	Tower due FY75
Rawlins, Wyo.	Rock Springs	No	Contract	Yes	6	26,376	4,396	
Rochester, Minn.	La Crosse Minneapolis	W T	NWS	Yes	8	95,920	11,965	
Sault Ste. Marie, Mich.	Traverse City	W	NWS	Yes	6	25,780	4,296	
Sidney, Neb.	Scotts Bluff	No	Contract	Yes	5	33,756	6,751	
Terre Haute, Ind.	Indianapolis	T	Tower	Yes	11	162,357	14,759	
Toledo, Wash.	Seattle, Wash.	No	Contract	Yes	4	21,506	5,374	
Truth or Consequences, New Mexico	El Paso, Tex.	No	Contract	Yes	6	15,273	2,545	
Williamsport, Pa.	Wilkes Barre	W-09-1800 T	NWS/Tower	Yes	8	125,254	15,656	
Yuma, Arizona	Imperial, Cal.	W Part Time T-06-2300	NWS	Yes	8	95,043	11,130	Military Twr 24 hr. obs.
Zanesville, Ohio	Columbus	No	No	No	8	105,093	13,136	

Q. Page 42 of your justification sets forth your flight service station program. You show an increase of 200 positions and over $6 million for fiscal 1975. How many of the 4,689 positions you are currently authorized are filled?

(a) How do you determine the need for personnel in this area? Is there some formula?

(b) How many positions did you request from the DOT? OMB?

(c) Why is there a reluctance on their part to provide the personnel that would seem to be required according to the formula?

(d) What part of the flight service station workload is for military aviation? What part for General Aviation?

(e) Do you have a listing of the 30 stations which you intend to remote during FY–1975 for the record?

(f) Would it be your position that since general aviation accounts for 81 percent of the FSS workload that they should be required through user fees, to pay their share of the $90 million cost for this program?

A. As of June 30, 1974, 4,471 of the 4,689 authorized positions were filled.

(a) There is a staffing standard for flight service stations. Using this formula, the staffing requirement for flight service stations in FY 1975 would have been 6,234. However, we considered that it would be unwise to staff the FSS system to the full standard only to have to reduce staffing as the automated system was introduced. We determined that an increase of 600 specialists over the FY 1973 level, along with the efficiencies gained by consolidating low activity stations and by modernizing and improving the equipment at the remaining stations, would permit the system to accommodate the entire demand for services including forecasted increases. The FY 1974 budget provided for 200 new positions and the FY 1975 request includes the second increment.

(b) Our request to both DOT and OMB was for 4,889 positions.

(c) Neither DOT nor OMB reduced our request of 4,889 positions. We did not request all the personnel that would be justified by application of formula for the reasons enumerated in item (a) above.

(d) Not all of the FSS workload can be related directly to the activities for which we have statistics by user category. For example, the taking of weather observations and the distribution of weather data by teletype is part of the FSS workload formula, but cannot be related to aviation activity statistics. However, the distribution of the "flight services" (aircraft contacted, flight plans originated, and pilot briefings) is as follows:

General aviation, 81 percent.
Military, 10 percent.
Air carrier, 9 percent.

(e) The 30 stations planned for remoting in FY 1975 are listed below:

Yuma, Ariz.
Pine Bluff, Ark.
Marysville, Calif.
Akron, Colo.
Key West, Fla.
Brunswick, Ga.
Terra Haute, Ind.
Ottumwa, Iowa
Hill City, Kans.
Paducah, Ky.
Alexandria, La.
Houlton, Maine
Sault Ste. Marie, Mich.
Rochester, Minn.
Joplin, Mo.
Livingston, Mont.
Sidney, Nebr.
Truth or Consequences, N. Mex.
Elmira, N.Y.
Zanesville, Ohio
Ponca City, Okla.
Williamsport, Pa.
Myrtle Beach, S.C.
Bristol, Tenn.
Dallas, Tex.
Bryce Canyon, Utah
Charlottsville, Va.
Toledo, Wash.
Lone Rock, Wis.
Rawlins, Wyo.

(f) The share of general aviation would not be 81%. As explained above, this distribution dose not take into account the workload associated with certain weather services. A recent study indicated general aviation users accounted for only 29% of these other services. More important is the fact that the flight services afforded to air taxi operations make up a very substantial portion of the general aviation workload. These services are paid for by the taxes on air carrier passenger tickets and freight waybills.

Q. What were your major accomplishments in the R&D area during the past year?

A. *En route automation.*—Automatic flight plan processing is now operational in all 20 NAS Stage A ARTCC's and installation of radar data processing software initiated.

Automated radar terminal system (ARTS) III.—The basic ARTS III automation system at 61 high and medium density terminals will be completed when the Oakland TRACON (Terminal Radar Approach Control) installation becomes operational this fiscal year. Software development work for subsequent software packages is underway at NAFEC and an automatic conflict detection capability to aid the radar controller has been developed. The software package for arrival metering and spacing was also tested at NAFEC during FY 1974.

Air traffic control radar beacon system (ATCRBS).—A field retrofit package of a NAFEC dipole Feed (NADIF) Antenna improvement target detection allowing beacon interrogations to be transmitted via the primary radar antenna was designed and provided for implementation at selected en route sites. The significantly-improved radiation pattern permits better target detection in clutter environments and reduces target fading due to vertical lobing. Thirteen en route sites have been provided with this modification in FY 1974.

Microwave landing system development (MLS).—Phase II of the MLS program, demonstration tests of feasibility-type hardware by four contractors at NAFEC and at Wallops Island was essentially completed during FY 1974. This will lead to the development and evaluation of prototype systems (Phase III) in FY 1975.

Flight service station (FSS) automation.—A new agency plan was adopted in FY 1974 for introducing automation into the FSS function. Raleigh-Durham was selected as the site of a prototype FSS hub station for the purpose of testing and evaluating the planned introduction of automation. Pilot self-briefing experiments in support of the new automation plan were conducted at NAFEC utilizing printed outputs and cathode ray tube terminals for graphic and alpha-numeric weather displays.

Agreement reached to develop aeronautical satellite (AEROSAT) system.—A Memorandum of Understanding (MOU) was signed by the FAA Administrator on May 9, 1974. The European Space Research Organization (ESRO) representing the aeronautical authorities of ten European countries and Canada have initialed and will formally sign the MOU early in August 1974. This MOU will provide a joint two-satellite program for the Atlantic. This system of satellites will be in geostationary orbit and provide the voice and data communications and surveillance capability desired.

The ATS–F satellite was successfully launched late in May 1974 and some preliminary tests will be conducted late this summer.

Wake vortex avoidance system (WVAS).—In FY 1974, over 20,000 vortices were detected and tracked at John F. Kennedy and Denver Stapleton Airports by new acoustic sensors as the first step in characterizing vortex behavior and permitting the development of a vortex avoidance system. In addition, the functional design of a vortex warning system was initiated from which a demonstration system will be fabricated and tested at a operational airport in FY 1975.

Discrete address beacon system (DABS) design.—The concept and technical feasibility of DABS was demonstrated and verified in FY 1974 using the DABS Experimental Facility at Hanscom Field, Massachusetts.

Intermittent positive control (IPC).—A plan for experimenting with and developing IPC service was generated during FY 1974. This plan details a phased effort, with the Discrete Address Beacon System Experimental Facility used for the initial phase of testing and NAFEC for final testing in a multisite air traffic control environment. Phase I testing is scheduled for completion by April 1975 and Phase II by November 1976.

Synchro-DABS.—Fabrication of the necessary equipment has been completed by the Transportation Systems Center and the Navy Department facility at China Lake, California, to facilitate testing and evaluation at NAFEC of Synchro-DABS in early FY 1975. Synchro-DABS is a possible extension of the DABS/IPC system to provide equipped aircraft with an on-board capability for collision detection and warning at minimal added avionics cost.

Airport capacity study.—In response to a request from Congress, a study was completed in January 1974 of the near-term, immediate, and long-range results

which may be expected from research, engineering and development (R, E&D) and facilities and equipment (F&E) programs to increase the capacity and productivity at major terminals.

Q. In the area of flight standards, briefly explain the new operational training program for pilots which you recently initiated. This new program increases the flight instructors' responsibilities, does it not?

A. Yes. Part 61 revised introduces a new total operational training concept. The keystone of this concept is the instructor who assumes full responsibility for all phases of the required training. Under this new training concept, all of the various procedures and maneuvers previously listed under the areonautical skill requirements for various types of pilot certificates and ratings are eliminated. That listing has been replaced by pilot proficiency provisions which prescribe an outline of areas of pilot operations in which flight instruction is required to find that the pilot is able to perform the pilot operations competently in order to become eligible for the prescribed flight test. An additional responsibility placed on the flight instructor is the biennial flight review. The biennial flight review is a currency requirement that ensures that every pilot, who acts as pilot-in-command, would have a qualified individual comment on his competency at least once every two years. The flight instructor will bear the primary responsibility for giving the biennial flight review and commenting on any deficiencies detected. New responsibilities are placed on flight instructors by the instrument competency check required by the revised Part 61. A pilot not meeting the instrument recency of experience requirement may not exercise the privileges of his instrument rating until he does so. If he fails to meet this recency of instrument experience for a period of one year, he must pass an instrument competency check. It is expected that the greatest percentage of these checks will be given by flight instructors who are authorized by the revised Part 61.

Q. Briefly summarize your $2.1 million request for medical research.

A. This research program provides for studies related to the man in the National Aviation System. Substantial engineering and development investment is made in support of the hardware side of the system; e.g., aircraft, avionics, communications, etc. This activity provides modest but essential support to preserving the effectiveness and efficiency of the people involved in operating and using the system hardware. Examples of this work include the detection, prevention and rehabilitation of aviation safety related diseases; investigation of the personal effects of toxic substances, pesticides and drugs found or used in aviation; the effects of aircraft accident impacts on the body and the effect of smoke inhalation, oxygen deficiency, radiation and loss of cabin pressure and the potential for survival in these conditions. A large aircraft emergency evacuation facility is available to study evaluation techniques and devices for physically fit and disabled passengers.

Q. Would the $738,300 to study the effects of drug use be for pilots and airport personnel? Have you had any cases of pilots or air traffic controllers using drugs?

A. $203,100 of this would be used to study the effects of drug use by aviation personnel. There are really two facets to this problem: one being the use by airmen of prescribed and over-the-counter drugs in therapeutic dosages; and drug abuse (including alcohol) impact on aviation safety. Studies are planned to determine the duration of action on airman performance of several widely used antidepressants with the objective of providing recommended abstinence time before flying after their use. The subtle effects of exposure to pesticides are being studied. Studies are also planned to determine the combined effects of altitude/marihuana and alcohol/altitude for the purpose of educating the public on the specific dangers found in this environment.

There are no reliable data available on the extent of drug abuse among airmen, however, it is assumed that drug abuse does exist and part of the agency drug study is to determine if drugs are present in the blood and tissue of fatal accident victims. There are several cases in which pilots having a history of drug abuse have been certified after demonstrating successful rehabilitation. All others are denied. Use of drugs by controllers has not presented an operational problem. The reported suspected cases of drug involvement of all kinds is less than 1% of all controller and almost all involved off-duty use of marihuana. No safety problems have come to our attention due to drug use by airport personnel.

Q. In reducing your personnel requirements by 283 people in the flight standards area, are you cutting back on the program levels?

A. Yes. The 283 position reduction is as follows:

Flight standards program	190
Modernization of the aircraft fleet [1]	(118)
Flight standards regulatory program [2]	(72)
Centralized training	2
Direction, staff and supporting services [3]	91
Total	283

[1] Five position reduction due to Pacific Regional reorganization.

[2] The 72 position reduction in the Regulatory program is principally in the Air Carrier area and is based on the fact that the environmental growth and workload on air carriers has flattened out, and in some cases, decreased as the carriers have started consolidating their fleets, some jumbo jets have been temporarily moth-balled, route segments dropped, and crew-strength decreased as the result of fuel cut backs. This leads to some decrease in certification, inspection, and surveillance workload at our air carrier field facilities.

[3] Reduced requirements in Air Guard program account for 77 of the 91 reduction and a savings of 14 positions is due to Alaskan and Pacific Regional reorganization.

Q. On page 399, you are requesting $5,399,000 for your satellite program. How much of that is for AEROSAT? What is the status of the Memorandum of Understanding at this time? I understand you signed it soon after this Committee removed its objection earlier this year. Has the U.S. Co-owner been selected yet? Have all the countries involved signed the MOU?

A. Of the total, $3.029 million is for AEROSAT and $2.370 million for other satellite related program activities.

The Memorandum of Understanding has been signed by Mr. Butterfield for the United States. ESRO and Canada plan to sign the MOU on August 1, in Paris.

The U.S. Co-owner has not yet been selected. This will probably not occur until after the first meeting of the AEROSAT Council, now tentatively scheduled for September of this year.

Q. Would you supply for the record a summary of the improvements in air safety that can be directly attributed to your safety research.

A. Accomplishments in FY 1974:

1. Cabin material smoke tests were correlated with transport aircraft cabin conditions to support amendments to the Federal Air Regulations.

2. Modified (gelled) jet fuels, to reduce fire hazards associated with survivable crashes, were tested to expand the results of previous full-scale (deliberate) crashes.

3. Investigations of electromagnetic and X-ray absorption techniques for detecting weapons in carried luggage were completed.

4. Development of a comprehensive structural model for general aviation aircraft was initiated as a step toward improved crash-worthiness requirements.

5. Extensive flight and ground operational data on an airline-operated B–737 were recorded and analyzed to support and verify current certification and operational procedures requirements.

6. The feasibility of detecting turbine burner can burn-through flames was established.

7. FAA had a vigorous noise abatement program for many years. In November of 1969 the FAA established FAR Part 36 which specifies noise standards as a condition for aircraft certification. Under this regulation, acoustically advanced aircraft such as the DC–10, L–1011, B–747 and the Citation has been certificated. The new technology has benefited the public by lowering aircraft noise levels by as much as 10 to 15 decibels.

Also through the acoustic change provisions of that regulation, the public was assured that the growth of aircraft noise pollution was stopped since follow-on versions of already certificated aircraft were not allowed to increase their noise levels.

The status of the engine retrofit program is as follows:

The 727 (JT8D) project has been completed and a final report will be issued in the near future.

The DC–9 (JT8D) project will be terminated at the conclusion of the ground test phase. Test results do not clearly indicate that an economical jet exhaust suppressor has been developed; however, a DC–9 acoustically treated engine nacelle retrofit kit will be available later this year. This retrofit will bring the

aircraft into compliance with Part 36; whereas the exhaust suppressor, if feasible and practical, would have provided capability beyond the requirements of Part 36.

727 and 737 retrofit kits are currently available.

The 707 flight tests have been completed and it is expected that Boeing will shortly offer guarantees of compliance with Part 36.

A 707/DC–8 generalities study has indicated a design approach to be used on the DC–8. Design and tests are expected to be completed early in 1975.

This program will provide the FAA data base for its proposed NPRM which will require retrofitting the existing transport fleet with acoustically modified nacelles to meet Part 36 standards.

AIRCRAFT SAFETY R. & D. EFFORTS THAT HAVE RESULTED IN IMPLEMENTATION ACTIONS WITHIN THE AIRCRAFT/AVIATION INDUSTRY

1. As a result of R. & D. efforts in the experimentation and testing of the flammability of transport cabin interior materials, wide bodied jets are being retrofitted to these new materials, giving them a safety margin much improved over the margin when the airplane was type certificated. In addition, American Air Lines voluntarily introduced at considerable cost NOMEX carpets for their entire fleet of aircraft.

2. As the result of the grooved runway technology developed through Government R. & D., industry was encouraged in the development of improved anti-skid brake systems.

3. As the result of an operational flight data survey during which much data was collected, a structural "beef-up" of the Boeing 727 flap track was supported.

4. Because of considerable and continuing R. & D. efforts in the area of engine fires, new extinguishing agents have been developed and new methods of distribution of these agents have been implemented as equipment on the present day aircraft fleet.

5. As the result of FAA/NASA program on recording of height, velocity and loads on operational general aviation aircraft, a better design is now incorporated in general aviation airframe development.

6. As the result of research and development in the effects of lightning strikes on aircraft airframes, protection of fuel tank vents on transport aircraft have been afforded.

7. As the result of R. & D. efforts in the determination of the safety aspects of engine nacelle fire wall materials, the fire wall materials used in the DC–10 were subjected to tests resulting in changes in materials used in the DC–10 prior to its production.

8. As a result of our in-flight simulator investigations using a variable stability general aviation airplane, there has been provided the first comprehensive generalized research on general aviation aircraft flying and handling qualities. The results have been used by the general aviation aircraft industry in the design of new propeller and turbine powered aircraft operating at higher speeds and higher altitudes for which the use of advanced flight control systems are indicated.

9. As the result of another R. & D. effort using this kind of variable stability aircraft, information obtained on the effects of lateral direction dynamics and aileron control were gleaned, resulting in the use of such data in the design of new aircraft types to assure safer cross-wind operation.

10. As a result of the utilization of a moving base ground simulator co-related in-flight simulation tests of an advanced transport (Concorde) configuration data was obtained on minimum acceptable flight characteristics required for safe landing and the results enabled this country to provide rules and regulations covering the certification of the Concorde for operation into the U.S.

11. As a result of our efforts in the area of STOL transport flight characteristics criteria program, extensive data has been obtained which have been used by transport system designers in the area of new civil and military STOL aircraft.

12. The result of the FAA's R. & D. is published in each case for each project and effort in a technical report and is disseminated widely to the industry as a part of the total technical library. The work is usually coordinated closely with related industry and government research people to afford an exchange of technical expertise to afford direct applicability and to assure that no duplication will exist.

SIGNIFICANT ACCOMPLISHMENTS IN AEROMEDICAL RESEARCH CONCERNING AVIATION SAFETY (F, R. & D., FISCAL YEAR 1974)

Series of experiments were performed to investigate the toxcity of carbon monoxide, hydrogen cyanide, and the two combined at concentrations which can occur in post crash aircraft fires. Thousands of chemical measurements were required. As a result of this effort, a new method for measuring cyanide was developed, highly accurate and many times more sensitive than any previously in existence. Definite evidence of *additive toxicity of the two gases* was obtained for the first time. Numerous copies of the manuscript summary of these results have been requested by leading industrial and other laboratories engaged in fire research throughout the U.S. prior to its formal publication.

Experiments on the feasibility of using *passenger oxygen masks for inflight smoke protection* were conducted. From these experiments, it was concluded that the proposed use of the passenger mask in its present form would not be feasible. Considerable modifications would be required to protect passengers against smoke and toxic gases during a fire.

Chemical analyses were performed on speciments from *494 victims of 317 fatal aircraft accidents.* Investigations are now made on more than 50% of all fatal accidents in the U.S., up from 30% three years ago. These results are transmitted to NTSB for their assistance in determining probable accident causes. They are also used in educational campaigns among pilots. As one result of these efforts, the incidence of significant alcohol in pilot fatality is now approximately 7%, down from estimates as high as 30% some years ago.

An exhaustive survey of sizes, shapes, and dimensions of aircraft cargo compartments was made, that determined safe amounts and *proper placement of radioactive materials in order to eliminate exposure hazards to passengers.* These findings are now being made into a Handbook to be used in training FAA inspectors of hazardous material shipments.

Emergency evacuation of disabled passengers was practiced in cooperation with the Flight Standards Technical Division of the Aeronautical Center. The results of the tests indicate the number of handicapped persons that may be carried per flight without appreciably affecting total evacuation time. Based on this research, the Federal Aviation Regulation is being amended to allow the airlines to carry a specified number of handicapped passengers on a flight.

The Transportation System Center, Boston, is developing, procuring and testing a *computer system to scan and analyze the large number of airmen* electrocardiograms. In FY–74, the system has been built and is now ready for acceptance tests, after which it will be evaluated at TSC and then installed at the FAA Aeronautical Center in Oklahoma City. Used as a screening device, the system will apply uniform medical standards to all First Class applicants, and help increase the number of electrocardiograms processed.

A new and advanced technique for *analysis of the resting electrocardiogram* has indicated a capability for the detection of coronary heart disease comparable to exercise electrocardiogram tests.

Research has demonstrated that commonly-used sedative drugs (including alcohol) can produce *significant impairment of performance* when an operator is undergoing motion although no impairment may be evident at the same performance task in the absence of motion. These results suggest that the criterion for drug effects in transportation should be their influence on performance when the operator is moving rather than when he is still; hence, greater danger exists during flight, and it occurs at drug (and alcohol) levels below those which will show impairment when the operator is *not* undergoing motion.

A newly developed *five-point restraint system* that was proposed for use was evaluated. The results of crash tests indicated that the system does not provide a wide enough margin of safety as claimed by the company which developed the system.

Research studies with animals have demonstrated that exposure to insecticide used by cropduster pilots can result in dangerous performance impairment *at the same time as or even before* the first symptons of poisoning (such as hand tremor) are otherwise evident. Early warnings and careful monitoring of cropduster pilots are clearly indicated for safe flying performance.

In-flight studies have demonstrated that an aircraft instrument panel, which takes full advantage of the *pilot's visual capability in instrument approaches,* enhances flight safety by reducing the ambiguity and confusion inherent in conventional instrument displays.

JUSTIFICATION

Senator BYRD. The budget justifications for the Federal Aviation Administration will be inserted in the record at this time.

[The justification follows:]

Justification

FEDERAL AVIATION ADMINISTRATION

Appropriation: Operations — Budget Year 1975

Summary of Program Requirements by Activity

Activity	1974 Estimate Positions	1974 Estimate Amount	1975 Estimate Positions	1975 Estimate Amount	Difference Positions	Difference Amount
1. Operations						
Operation of Traffic Control System	28,859	$ 633,290,000	29,557	$ 687,664,000	+698	$ +54,374,000
Installation and Materiel Services	2,084	125,021,000	2,040	135,242,000	-44	+10,221,000
Maintenance of Traffic Control System	13,135	321,445,000	13,600	355,559,000	+465	+34,114,000
Administration of Flight Standards Program	6,230	159,719,000	5,947	160,404,000	-283	+685,000
Administration of Medical Programs	334	8,461,000	334	8,874,000	-	+413,000
Development Direction	423	10,682,000	432	12,140,000	+9	+1,458,000
Administration of Airports Program	976	23,960,000	822	25,617,000	-154	+1,657,000
Total	52,041	$1,282,578,000	52,732	$1,385,500,000	+691	$+102,922,000

Operation of Traffic Control System

	Requirements					
	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Operation of Air Route Traffic Control Centers	10,969	$237,130,200	10,675	$247,648,200	-294	$+ 10,518,000
Operation of Airport Traffic Control Towers	10,850	229,318,400	11,636	251,355,400	+786	+ 22,037,000
Operation of Flight Service Stations	4,689	83,645,000	4,889	89,806,000	+200	+ 6,161,000
System Supervision and Services	696	22,838,500	727	23,832,500	+ 31	+ 994,000
Planning, Direction, and Evaluation	236	6,011,900	236	6,317,900	-	+ 306,000
Centralized Training Program	347	23,053,000	345	31,146,000	- 2	+ 8,093,000
Direction, Staff and Supporting Services	1,072	31,293,000	1,049	37,558,000	- 23	+ 6,265,000
Total	28,859	$633,290,000	29,557	$687,664,000	+ 698	$+ 54,374,000

Installation and Materiel Services

Requirements

	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Materiel and Procurement	1,357	$ 49,302,000	1,329	$ 51,021,000	- 28	$+ 1,719,000
Leased Commercial Services	-	54,949,000	-	59,735,000	-	+ 4,786,000
Planning, Direction, and Evaluation	81	1,726,000	78	1,744,000	- 3	+ 18,000
Centralized Training Program	17	673,000	17	694,000	-	+ 21,000
Direction, Staff and Supporting Services	629	18,371,000	616	22,048,000	- 13	+ 3,677,000
Total	2,084	$125,021,000	2,040	$135,242,000	- 44	$+ 10,221,000

Maintenance of Traffic Control System

Requirements

	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Field Maintenance	10,565	$250,279,000	11,069	$277,390,000	+504	$+27,111,000
Engineering	928	21,933,000	930	23,116,000	+ 2	+ 1,183,000
Planning, Direction and Evaluation	393	8,346,000	372	8,707,000	- 21	+ 361,000
Centralized Training Program	402	16,145,000	400	16,650,000	- 2	+ 505,000
Direction, Staff and Supporting Services	847	24,742,000	829	29,696,000	- 18	+ 4,954,000
Total	13,135	$321,445,000	13,600	$355,559,000	+465	$+34,114,000

Administration of Flight Standards Program

Requirements

	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Engineering and Manufacturing	642	$ 15,224,100	641	$ 15,870,500	- 1	$+ 646,400
Operation and Maintenance	2,637	61,362,100	2,567	64,681,000	- 70	+ 3,318,900
Records Servicing and Analysis	91	1,086,700	91	1,128,700	-	+ 42,000
Flight Programs and Management of Aircraft	1,395	38,104,200	1,277	32,777,000	- 118	- 5,327,200
Planning, Direction, and Evaluation	146	3,611,900	145	3,756,800	- 1	+ 144,900
Centralized Training Program	320	12,776,000	318	13,870,000	- 2	+ 1,094,000
Direction, Staff and Supporting Services	999	27,554,000	908	28,320,000	- 91	+ 766,000
Total	6,230	$159,719,000	5,947	$160,404,000	- 283	$+ 685,000

Administration of Medical Programs

Requirements

	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Technical Medical Programs	278	$6,630,000	278	$6,875,000	-	$ + 245,000
Centralized Training Program	-	29,000	-	32,000	-	+ 3,000
Direction, Staff and Supporting Services	56	1,802,000	56	1,967,000	-	+ 165,000
Total	334	$8,461,000	334	$8,874,000	-	$+ 413,000
Development Direction						
Planning, Direction, and Evaluation	195	4,886,000	208	5,412,000	+ 13	+ 526,000
Centralized Training Program	2	82,000	2	94,000	-	+ 12,000
Direction, Staff and Supporting Services	226	5,714,000	222	6,634,000	- 4	+ 920,000
Total	423	$10,682,000	432	$12,140,000	+ 9	$+ 1,458,000

Administration of Airports Program

Requirements

	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
National Airport System Planning	126	$ 2,854,000	100	$ 2,890,000	-26	$ +36,000
Airport Planning Grant Program	43	957,000	34	969,000	-9	+12,000
Airports Standards, Formulation and Application	182	4,158,000	146	4,210,000	-36	+52,000
Airport Development Program	285	6,467,000	227	6,550,000	-58	+83,000
Airport Certification and Safety Program	44	957,000	34	969,000	-10	+12,000
Program Management and Evaluation	49	1,105,000	39	1,120,000	-10	+15,000
Centralized Training Program	12	597,000	12	669,000	-	+72,000
Direction, Staff and Supporting Services	235	6,865,000	230	8,240,000	-5	+1,375,000
Total	976	$23,960,000	822	$25,617,000	-154	$+1,657,000

FACILITIES, ENGINEERING AND DEVELOPMENT

Budget Authority	Budget Authority	Obligations
Engineering and Development	$11,241,000	$11,241,000
Facilities and Equipment	1,759,000	1,759,000
	$13,000,000	$13,000,000

General Justification

The FY 1975 budget authority being requested under Engineering and Development is $13.0 million. This provides $4.2 million for aircraft safety programs which includes $1.1 million for fire safety -- $1.9 million for transport safety -- $.8 million for general aviation flight safety -- $.4 million for aviation security. It provides $2.1 million for aviation medicine programs which includes $.8 million for aeromedical factors in systems and operations -- $.7 million for aircrew and passenger protection and $.6 million for aeromedical factors in flight management and public acceptance of aircraft operations. It provides $5.0 million for environment programs which includes $.9 million for aircraft pollution -- $1.3 million for aircraft noise -- $1.0 million for environment quality -- and $1.8 million for climatic impact.

The FY 1975 budget authority being requested under Facilities and Equipment is $1.8 million. This provides $.4 million for training equipment used by flight inspectors and $1.4 million for improved aircraft navigation and communication equipments.

Positions

Fiscal year 1974 Estimate	187
Fiscal year 1975 Estimate	187

There are three basic areas within the Engineering and Development activity under this appropriation which requires direct FAA manpower. They are: Program Supervision and Contract Management, Test and Evaluation and Aeromedical Research. The staffing specialities required include - engineers, technicians, pilots, aircraft mechanics, physicians, scientists, laboratory supervisors, veterinarians and other related personnel.

FACILITIES, ENGINEERING AND DEVELOPMENT

GENERAL STATEMENT

1. Engineering and Development

This activity includes engineering and development efforts which support regulatory activities of the Federal Aviation Administration in the fields of aircraft safety, environmental protection and aviation medicine. The aircraft safety programs include activities designed to demonstrate the technical, operational and economic feasibility of improving the operational performance of aircraft. This program also includes efforts to raise performance standards for pilots and other airmen and provides for the development of anti-hijacking measures, including automated techniques for the detection of bombs and weapons. The environmental protection program embraces activities aimed at demonstrating the technical, operational and economic feasibility of reducing the noise, sonic boom and pollution generated by aircraft during in-flight and ground (airport) operations, and study of engine exhausts in the stratosphere. The aviation medicine program is an applied research effort aimed at the identification and elimination of biomedical factors that cause aviation accidents and improvement in the performance, health and safety of pilots, ground personnel and passengers. The knowledge and data developed in all these programs enable the improvement of contemporary and future aircraft and insures the issuance of viable new standards, certification criteria, and regulations.

The total FY 1975 request provides $11,241,000 for continuing the aircraft safety, environmental protection and aviation medicine programs. It is heavily devoted (45%) to environmental protection, particularly reducing the engine noise generated by contemporary airliners (retrofit of engines with sound-absorbent materials) and the study of aircraft engine exhausts air pollution both on the ground and in the stratosphere. Thirty-six percent (36%) of this request incoudes funds for the development of new airworthiness and operational criteria not only for large contemporary aircraft and advanced jet transports but also for smaller general aviation aircraft. Associated with development of these criteria are programs aimed at improving the crash survivability of current and future aircraft. These include the development of techniques, devices and materials designed to prevent, or minimize, the spread of fire throughout aircraft. Funds are also requested in this program for continued development of automated anti-hijacking techniques and detection equipment.

2. Facilities and Equipment

This activity provides for training equipment, primarily for use of flight inspectors who must remain knowledgeable of the various aircraft in the performance of their duties. It also provides for procurement and modification of nonflight inspection aircraft. Improvement and replacement of navigation and communication equipment is required for standardization, upgrading, and safety. Other avionic changes such as channel splitting to alleviate frequency shortages, air traffic control transponders and encoding altimeters are necessary to meet navigational requirements in compliance with new technical standard orders.

The total estimate for FY 1975 is $1,759,000. Of this amount, $1,384,000 will be devoted to the replacement of obsolete equipment and improvements to nonflight inspection aircraft. The balance of $375,000 will provide funds required for flight training equipment.

FACILITIES, ENGINEERING AND DEVELOPMENT

Summary of Requirements by Activity

Activity	1975 Request
1. Engineering and Development (TSC - $225,000)	$11,241,000
a. Aircraft Safety	4,155,000
b. Environment	4,986,000
c. Aviation Medicine	2,100,000
2. Facilities and Equipment	1,759,000
a. Air Route Traffic Control Facilities	-
b. Airport Traffic Control Facilities	-
c. Flight Service Facilities	-
d. Air Navigation Facilities	-
e. Housing, Utilities and Miscellaneous Facilities	-
f. Aircraft and Related Equipment	1,759,000
g. Development, Test and Evaluation Facilities	-
TOTAL	$13,000,000

Amounts in parentheses are allocated to the Transportation Systems Center (TSC), Cambridge, Massachusetts - $225,000

NATIONAL CAPITAL AIRPORTS

OPERATION AND MAINTENANCE

Program Justification

Requirements

	1974 Appropriation		1975 Estimate		Difference	
	Pos.	Amount	Pos.	Amount	Pos.	Amount
Washington National Airport						
Operating Requirements	426	$ 6,814,000	423	$ 7,806,000	- 3	$+ 992,000
Capital Outlay	-	446,000	-	367,000	-	- 79,000
Total	426	$ 7,260,000	423	$ 8,173,000	- 3	$ 913,000
Dulles International Airport						
Operating Requirements	424	$ 6,976,000	421	$ 7,976,000	- 3	$+1,000,000
Capital Outlay	-	506,000	-	351,000	-	- 155,000
Total	424	$ 7,482,000	421	$ 8,327,000	- 3	$ 845,000
Total O&M	850 1/	$14,742,000	844	$16,500,000	- 6	$+1,758,000

1/ Includes 14 positions, which on a comparable basis, were included in Construction, National Capital Airports for FY 1974.

Washington National Airport

Operating Requirements

	1974 Appropriation	1975 Estimate	Difference
Permanent Positions	426 1/	423	-3
Personnel Compensation and Benefits	$4,640,000	$5,885,000	$+1,245,000
Other Costs	2,174,000	1,921,000	- 253,000
Total	$6,814,000	$7,806,000	$+ 992,000

1/ Includes 7 positions previously funded in the Construction account.

Requirements to operate the Washington National Airport will increase by $992,000 over the 1974 level for a total of $7,806,000 in fiscal year 1975.

Expanded Program $ 77,000

Three positions previously authorized in the construction program are being abolished. A net of four positions previously funded in the construction account identified with Washington National Airport, are being transferred to the O&M activity in FY 1975. These positions are being utilized for only a small portion of the time for construction funded projects. The majority of the work required is for O&M funded tasks. The transfer of these positions to the Washington National's O&M activity aligns personnel where the predominant part of the work is actually being performed.

Mandatory Pay Adjustments $150,000

Mandatory pay adjustments in fiscal year 1975 amount to $150,000. Included is $106,000 annualization of the October wage board and general schedule pay raises granted in FY 1974, also $14,000 for 115 new within-grade salary advancements due eligible employees in FY 1975 after adjusting for anticipated employee turnover; $14,000 for payment of 47 within-grade salary increases that become effective in fiscal year 1974; and $16,000 for one additional work day.

Other Cost Adjustments $765,000

Other cost increases totaling $765,000 are required for:

a. Forty-four additional man-years ($558,000), related to the security gate guard program prescribed by Federal Aviation Regulation 107.4, are required to provide full year employment and associated costs for 72 positions authorized in FY 1974.

b. Ten additional man-years ($126,000) are required to upgrade the maintenance of the airport. Several authorized maintenance technician positions have not been filled during FY 1974 which will be required during FY 1975.

c. Action is pending to upgrade the salary of all airport policemen. Publication and authorization of revised police pay scales are anticipated prior to FY 1975 ($216,000).

d. A decrease of $135,000 is programmed representing reductions which can be made in contractual services and facility projects at Washington National Airport.

Capital Outlay

	1974 Appropriation	1975 Estimate	Difference
Amount	$446,000	$367,000	$-79,000

Capital Outlays, other than Construction, at Washington National Airport in fiscal year 1975 are planned at a level of $367,000 or $79,000 less than the program authorized for fiscal year 1974. The requested amount is for capital improvement projects and replacement of equipment as follows:

Capital Improvement Projects.....$ 85,000

Included in this request is $45,000 to replace the original industrial waste pumping station with one having more capacity. Industrial waste generation has increased over the years to a point where excesses which can't be handled by the existing station are running over into the sewer system with drainage into the Potomac River. Also, included is $40,000 to remodel, expand, and rehabilitate the public rest rooms in the Main Terminal.

Capitalized Equipment.....$282,000

Airport Management - $500 - This amount provides for replacement of one electric typewriter.

Operations - $73,200 - This request provides $12,000 for replacement of four police cruisers, $40,000 for replacement of a structural pumper firefighting truck, $17,000 for normal replacement of radios, and $4,200 for first aid equipment.

Maintenance - $207,300 - Included in this request is $45,000 for a new twin engine dozer truck and $18,000 for replacement of one carryall truck, three 1/2-ton with utility body trucks, and one 1-ton pickup with 4-wheel drive. Off-road vehicles needing replacement are $80,000 for a snowblower, $30,000 for an airfield vacuum sweeper, $12,000 for a forklift, and $7,000 for a low bed trailer. Other miscellaneous items are $6,000 for a slope mower, $1,800 for a motorized mulcher shredder with truck loading chute, and $7,500 for one 28-foot dozer blade.

Consolidated Functions - $1,000 - This amount will provide for normal replacement of operations and engineering equipment and miscellaneous office furniture in the National Capital Airports Headquarters office.

Dulles International Airport

Operating Requirements

	1974 Appropriation	1975 Estimate	Difference
Permanent Positions	424 1/	421	-3
Personnel Compensation and Benefits	$5,137,000	$6,019,000	$+ 882,000
Other Costs	1,839,000	1,957,000	+ 118,000
Total	$6,976,000	$7,976,000	$+1,000,000

1/ Includes 7 positions previously funded in the construction account.

Requirements to operate the Dulles International Airport will increase by $1,000,000 over the 1974 level for a total of $7,976,000 in fiscal year 1975.

Expanded Program $ 90,000

Three positions previously authorized in the construction program are being abolished. A net of four positions in the construction account identified with Dulles International Airport, are being transferred to the O&M activitiy in FY 1975. These positions are being utilized for only a small portion of the time for construction funded projects. The majority of the work required is for O&M funded tasks. The transfer of these positions to the Dulles Airport's O&M activity aligns personnel where the predominant part of the work is actually being performed.

Mandatory Pay Adjustments $140,000

A $140,000 mandatory increase in personnel costs in fiscal year 1975 consists of $94,000 for annualization of the October wage board and general schedule pay raises granted in fiscal year 1974; $12,000 for 91 new within-grade salary advancements due eligible employees in 1975 after adjusting for anticipated employee turnover; $18,000 for payment of 59 within-grade salary increases that become effective in fiscal year 1974; and $16,000 for one additional work day.

Other Cost Adjustments $770,000

Other cost increases totaling $770,000 are required for:

a. Fifteen additional man-years ($190,000) related to the security gate guard program prescribed by Federal Aviation Regulation 107.4, are required to provide full year employment and associated costs for 38 positions authorized in FY 1974.

b. Twenty-one additional man-years ($265,000) are required to reestablish preventive maintenance procedures and meet the expanded demands for all services of a growing airport.

c. Action is pending to upgrade the salary of all airport policemen. Publication and authorization of revised police pay scales are anticipated prior to FY 1975 ($132,000).

d. An increase of $183,000 is needed to meet the rising costs of utilities, their consumption due to additional and expanded commercial facilities, and additional dollar costs of facility maintenance projects.

Capital Outlay

	1974 Appropriation	1975 Estimate	Difference
Amount	$506,000	$351,000	$-155,000

Capital outlays, other than Construction, at Dulles International Airport in fiscal year 1975 are planned at a level of $351,000 or $155,000 less than the program authorized for fiscal year 1974. The requested amount will provide for replacement of equipment as follows:

Capitalized Equipment.....$351,000

Airport Management - $2,625 - This amount provides for replacement of 5 electric typewriters.

Operations - $60,815 - This request provides $18,000 for replacement of 6 police cruisers, $20,500 for normal replacement of radio equipment, $15,000 for replacement of a light rescue vehicle, $2,750 for replacement of a sedan delivery truck, $3,000 for a 4 x 4 patrol vehicle, and $1,565 for first aid equipment.

Maintenance - $286,560 - Included in this request is $180,000 for replacement of four snowplow trucks, $20,000 for replacement of a wrecker, $6,000 for replacement of 2 panel trucks, $6,000 for replacement of 2 pickup trucks; $12,000 for replacement of a paint striper, $9,000 for replacement of a tandem roller, $13,500 for replacement of three utility tractors, $9,480 for replacement of eight mowers, $8,200 for replacement of janitorial equipment, $10,000 for metal cutting, breaking, and shearing equipment, $2,500 for replacement of test equipment, $8,000 for a scissor manlift, and $1,880 for replacement of other miscellaneous maintenance equipment.

Consolidated Functions - $1,000 - This amount will provide for normal replacement of operations and engineering equipment and miscellaneous office furniture in the National Capital Airports Headquarters office.

CONSTRUCTION

Program Justification

New Requirements:

Washington National Airport	
Landing and Operating Areas	
Overlay taxiways	$ 573,000
Other Construction	
Road improvements	$ 750,000
Master plan for Washington National Airport	250,000
Bicentennial improvements	890,000
Modification to industrial waste treatment plant	172,000
Storm drainage improvements	300,000
Subtotal Washington National Airport	$2,935,000
Dulles International Airport	
Landing and Operating Areas	
Enlarge jet ramp and support facilities	$3,000,000
Replace airfield pavement panels	100,000
Other Construction	
Design ramp from Sully Road	$ 25,000
Service road improvements	730,000
Utilities, north commercial area and office buildings	310,000
Plan and design public parking	100,000
Subtotal Dulles International Airport	$4,265,000
Total Construction	$7,200,000

Program Justification

Washington National Airport, $2,935,000

Overlay Taxiways.....$ 573,000

The asphaltic concrete covering the taxiways is cracking and oxidizing leaving the underlying pavement open to moisture penetration and potential failure.

There is an extensive taxiway system at Washington National which interconnects the runways and the apron areas fronting the terminal and hangar facilities. Nearly all of the taxiway system dates back to the original airport construction in 1941. Normal life span for asphaltic concrete is approximately 20 years. Due to age and oxidation the taxiway surfaces have become brittle and cracked, moisture is penetrating the underlying pavement. The surfaces have begun to ravel and are a problem to operational aircraft through ingestion of broken surface pieces by jet engines.

This project will overlay 8,000 feet of taxiways, 75 feet wide with asphaltic concrete. The taxiway system consists of approximately 12,000 linear feet. This project is for the second and final increment.

Road Improvements.....$ 750,000

The present road system was designed to accommodate 4 million passengers per year, which is now 11 million per year projected to be 16 million by 1980. About 60,000 vehicles now enter and leave the airport per day and it is expected to increase to 80,000 by 1980. There is frequent traffic congestion and delay during peak late afternoon travel periods, particularly in the terminal traffic circle area. This congestion together with the Metro system and newly planned terminal developments by the airlines necessitates a new road system.

Until the various future airline terminal improvements are finalized it is proposed to establish a one-way traffic pattern on the airport utilizing existing facilities to the extent possible to improve traffic flow and relieve congestion at least temporarily. A study delineating the routing and signing of a temporary one-way system was completed in September 1973. This project will provide immediate relief and will be compatible to a future long-term road improvement. This project consists of constructing several new road segments, the largest being a 700 foot by-pass road between Abingdon Drive and Smith Boulevard (opposite Hangar #6), widening of certain existing roads and re-signing.

Master Plan for Washington National Airport.....$ 250,000

There is no master plan for development of Washington National Airport. The Department of Transportation will publish in the near future a policy concerning the role of Washington National and Dulles International Airports. A master plan to establish future development of the airport in agreement with the Department's policy is required. Air Carrier and concessionaires future construction as well as the airport operator's own construction need a master plan for guidance. This project will provide a master plan study for National Airport to assure that future development is in agreement with the established airport policy.

Bicentennial Improvements.....$ 890,000

The Airport's physical appearance and directional (interior) signing system are unsatisfactory. The mass of visitors to the Nation's Bicentennial Celebration should be met with pleasant, attractive facilities and a signing system that is

coordinated and easily followed. The airport has never had a major project designed specifically to improve the appearance of facilities. The effects of many years of operations and development to enlarge capacities has let the aesthetic valves deteriorate.

This project covers a number of necessary improvement items at National which will also enhance the appearance of the terminal area for the 1976 Bicentennial. The terminal and associated facilities at National are for the most part quite old and can use a sprucing up in appearance.

This project will replace old and unattractive public convenience facilities, improve the appearance of walls and ceilings in the terminal buildings, improve the airport landscaping and install a new coordinated, easily understandable interior signing system.

Modification to Industrial Waste Treatment Plant.....$ 172,000

This project is for improvement to the Industrial Waste Treatment Plant. It is anticipated that within two years, current problems will cause severe disruption of the present plant requiring frequent shutdowns.

The design of the industrial waste plant was preceded by a detailed study of the industrial waste being generated at National. The plant design was then tailored to the specific needs indicated by that study. In the design of the plant, there was a recognition that, while the initial plant facilities would be appropriate to the particular wastes which then existed, these wastes would likely change as time went on and the plant was designed to give maximum flexibility to alterations and additions to cope with the changing character of the industrial wastes.

There has been a change in the amount and type of sludge in the industrial waste reaching the plant. This is causing occasional stoppage of the separater for removal of sludge and causing oil and lubricants to carry over into the subsequent plant procedures. Without the improvements requested herein, severe disruption of the disposal plant will occur within two-years at the present rate of increase.

This project consists of three improvements necessary to enable the plant to handle current industrial wastes and those forecast for the near future:

a. Rehabilitation of chemical feed.
b. Addition of odor control equipment.
c. Addition of comminution equipment.
d. Addition of solids handling and dewatering equipment.

Storm Drainage Improvements.....$ 300,000

The present storm drainage system has been overloaded many times, with resultant flooding of areas of the airport. Following a very severe flood in 1963, a detailed study of the airport drainage system was undertaken. The report which resulted from this study concluded that substantial improvements to the drainage system were required to prevent flooding during severe rain storms.

This project consists of implementing one of the principal recommendations contained in the study report, i.e., reconstruct and widen approximately 550 feet of concrete lined drainage ditch and installing approximately 525 feet of 60 inch pipe.

Dulles International Airport, $4,265,000

Enlarge Jet Ramp and Support Facilities $3,000,000

The existing ramp facilities were planned to accommodate a "design" aircraft, 180 feet long and 160 feet in wingspan. The Boeing 747, now operating at Dulles, has a wingspan of 196 feet. These larger aircraft now in service can not safely pass each other on the ramp. At the present time it is necessary to either park the B-747s at designated locations, or revise the circulation patterns to prevent the B-747s from taxiing past each other. These alternative solutions are feasible only as long as the number of B-747s in operation at Dulles are not increased. The situation would become critical and untenable when flight schedules, as planned, place more of these jumbo jets in operation. Widening of the jet service apron is required to maintain operational flexibility; without the extension, maneuverability of B-747 aircraft on the apron will continue to be restricted resulting in impairment of operational safety.

The design of enlarging the jet ramp is now in progress, and funds are available for construction of a portion of one side of the apron. This request is for the balance of construction funds required to complete the project.

This project will extend the North and South ramp edges approximately 70 feet and shift the adjacent parallel mobile lounge roadway accordingly. Also included in this project is the modification of fuel hydrants at ten ramp positions.

Replace Airfield Pavement Panels ..... $ 100,000

The airfield pavement at Dulles, which include the runways, taxiways, aircraft aprons, and mobile lounge aprons and roads, are paved with Portland Cement Concrete (PCC). Most of these areas also have asphaltic concrete shoulders. The airfield has about 1,500,000 square yards of PCC pavement, all of which was constructed in the period between 1959 and 1962.

Over the years, a small fraction of this pavement has experienced distress, ranging from minor to serious cracking with verticial displacement of portions of the slabs. Cracking in pavements such as that experienced at Dulles is primarily a result of subgrade settlement beneath the pavement slabs. A certain amount of this is inevitable in a project of Dulles' scope. While every effort was made to compact the soil materials placed in the pavement foundation areas, further consolidation of the earth embankments over a period of time will often occur, leading to limited cracking of the overlying pavements. Approximately 18,500 square yards need replacing.

This project consists of replacing 2,200 square yards of the damaged panels. Funds received in FY 1974 and other funds to be requested in FY 1976 will complete this three-year program to replace all damaged airfield pavement panels.

Design Ramp from Sully Road ..... $ 25,000

Highway access to Dulles Airport from the vicinity of Washington is provided by the Dulles Access Highway. Access to Dulles from the areas north, south and west of the airport is provided by Sully Road (Virginia Route 28) which runs in a north-south direction just inside Dulles' easterly boundry. That portion of Sully Road which is on airport property (approximately 5 1/2 miles) was constructed by the Federal Government as a part of the original airport development and was turned over to the State of Virginia for operation and maintenance.

Sully Road and the Dulles Access Highway meet in an interchange just within the airport's boundary, about one mile northeast of the Dulles Terminal area. All Sully Road traffic to or from the terminal area enters or leaves the Dulles Access Highway at this interchange point.

The planning for Dulles includes a full, eight ramp layout for the Access Highway-Sully Road interchange. However, only two tie-in ramps (diamond type) were constructed under initial development, one each in the north and south quadrants on the west side of Sully Road. This requires northbound Sully traffic bound for Dulles to turn across oncoming southbound traffic on Sully, and requires outbound Dulles traffic wishing to proceed northward on Sully to cross Sully's southbound lane. This arrangement was thought to be adequate for Dulles' initial years, with the other ramps to be added as warranted by increases in traffic.

Sully Road has, over the year, been extended northward to Virginia Route 7 and southward to Routes 29 and 211 at Centreville. It has become a heavily travelled segment of the Virginia primary highway system. Additionally, activity at Dulles has gradually increased over the years to the point where we now have substantial traffic entering the airport terminal area from Sully Road via the Dulles Access Highway.

The principal problem area, both from the standpoint of traffic safety and capacity, concerns the northbound Sully traffic which must turn left across southbound Sully traffic to enter the inbound Dulles ramp. This problem is particularly acute in the morning hours when many airport employees are entering the airport and during peak air travel periods, i.e., weekends and holidays. Presently, during morning periods, the average backup is 15 automobiles.

This project consists of developing the engineering and architectural design for one additional ramp of the ultimate interchange plan, a cloverleaf type ramp which will permit northbound Sully traffic to exit to its right and to enter the Access Highway leading into the airport's terminal area. Construction funds will be requested in a subsequent budget request.

Service Road Improvements.....$ 730,000

The service roads at Dulles are essential to the airport mission. They provide access to commercial business and airport services needed to keep the airport operating. The growth and activity at Dulles has progressed to a point where additions are necessary in certain areas:

a. Design and construction funds for the dualization of the East-West Service Road.
b. Construction funds only for an extension of the North Service Road (1,000 feet).
c. Construction funds only for a service road along the back side of the office building sites.

It has been determined to be economically beneficial to consolidate these associated service road additions into one project.

An analysis of each item is given below:

Dualization of the East-West Service Road

The East-West Service Road is a 6,500 foot long two lane service road which passes around the east, north and west limits of the terminal area, linking the east and west service areas. This project will complete a second roadway along the existing road which will accommodate the increased traffic level generated by the hotel, office buildings, rental car establishments and air cargo facilities developed in the airport commercial area. Included in this development is the construction of an over pass structure over the Dulles Access Highway.

During FY 1972, a portion of the East-West Service Road dualization was completed for TRANSPO 72, the International Exposition staged at Dulles in the Spring of 1972.

This project will provide for the completion of the dualization work originally proposed. Specifically, it will include a permanent pavement on the roadway constructed for TRANSPO 72 and will provide the grading, drainage and pavement work necessary to extend the second (dual) roadway from the air cargo area on the west to the General Aviation area on the east.

North Service Road

The North Service road runs in a north-south direction and passes just west of the terminal area lake. This road provides access to the commercial and hangar areas in the north end of the airport. In the initial airport development, the service road was developed to a point about 1,100 feet north of the lake. This provided access to a future hotel site, a future service station site, and several commercial lots to the north.

A hotel has been constructed and is now in operation. The commercial property has either been leased or is in the process of being leased to a point approximately 500 to 600 feet north of the initial road improvements. This project consists of extending the North Service Road by 1,000 feet which will provide permanent access to the properties presently being leased as well as to several additional properties which will then be available for development.

Service Road on Office Building Sites

The area immediately south of the north section of the East-West Service Road is reserved for the development of office buildings. In fact, all five office building sites have been either leased or optioned with two of the office buildings already in operation. To provide internal circulation on these properties, the Master Plan calls for a service road around the sites linking the parking area in the rear of the sites to the East-West Service Road. This item consists of building that portion of the road which will serve the sites to be initially developed.

Utilities, North Commercial Area and Office Buildings.....$ 310,000

The office building area at Dulles is located along the south side of the East-West Service Road, north of the terminal area. This area has been divided into five sites for office buildings, each of which has now either been leased or optioned (two office buildings are now open). The initial airport development carried all of the principal utilities (water, gas, sewage, power and communications) into the office building area but only the sanitary and water lines were developed to fully serve all five sites. This project consists of extending power and communications lines, which are now available to the existing office buildings, to the three undeveloped sites so that all five are fully serviced by these facilities.

The north commercial area at Dulles is an area which lies north of the terminal area lake. The initial airport development carried the principal utility services (gas, sewer, water, power and communications) into this area only far enough to accommodate the first stages of commercial development.

The entire frontage served by the present utilities has now been reserved. Each of the three car rental offices operating on the airport has leased and developed space in the area. The leased property in the north commercial area extends over 500 feet beyond the present utilities. The last two lots in this area have been developed and are being served with temporary utility hookups.

The design work for this project has been completed. This project consists of construction funds only for the following development:

a. Extension of utilities in the office buildings area to provide utility service to office building sites.
b. Extension of utilities along the North Service Road to provide utility service to additional portions of the north commercial area.

Plan and Design - Public Parking.....$ 100,000

Public parking facilities at Dulles consists of a ground-level parking lot immediately in front of the Main Terminal Building and short-term curbside parking along the terminal exit and entrance ramp. The public parking lot now contains 3,000 parking spaces.

The number of spaces required at an airport depends on various factors (air activity, airport location, type of ground transportation available, etc.) but the usual design parameter for spaces is the annual passenger count. Generally, the range is from 600 to 1,000 spaces per million annual passengers. Based on past experience at Dulles, a figure of 750 spaces/million annual passengers is appropriate. In calendar year 1972, when only 1,700 public spaces were available, repeated overflows estimated at upwards of 200 automobiles required the use of temporary unpaved lots; the calendar year 1972 passenger count was 2,500,000.

Future projected passenger counts show that 3.3 million passengers are expected by FY 1975 and 5.5 million passengers by FY 1980. With application of the 750 space/million annual passenger ratio to these forecasts, the 3,000 spaces that will be available this year will be adequate only through 1976 when a 4.1 million passenger count is reached. By 1980, an additional 1,111 spaces will be needed.

The ground-level space alloted on the original Master Plan for public parking in the terminal vicinity at Dulles has been used. Therefore, a study must be undertaken to determine how the public parking needs for FY 1977 and beyond are to be met. This project consists of a study and design effort to determine the merits of a structural parking deck over the existing parking lot and/or satellite parking areas.

FACILITIES AND EQUIPMENT (AIRPORT AND AIRWAY TRUST FUND)

PROGRAM AND PERFORMANCE

Under this appropriation, the Federal airway system is improved by the installation of new equipment and the construction and modernization of facilities to keep pace with aeronautical activity. The 1975 program provides for the continuation and enhancement of major efforts already underway to provide an automation capability in the air traffic control system as well as to assure and improve the performance levels of installed systems. Operating costs of facilities procured under this appropriation are financed under the Operations appropriation.

1. Air route traffic control centers - (a) Long range radar provides FAA air traffic controllers with information on aircraft positions, at distances up to 185 miles, (b) automation equipment covers computers and other devices which aid controllers in handling en route air traffic, (c) other center facilities cover the installation of equipment to provide communications and related services.

2. Airport traffic control towers - (a) Terminal area radar aids traffic control in the vicinity of airports by displaying aircraft positions at distances up to 60 miles, (b) terminal area automation covers computers and other devices which aid controllers in handling terminal air traffic, (c) other tower facilities cover the establishment, improvement and relocation of airport traffic control tower facilities.

3. Flight service stations - (a) Domestic flight service stations and associated facilities provide flight assistance service to pilots, (b) international flight service stations provide long-distance communications for transoceanic flights.

4. Air navigation facilities - (a) Very high frequency omni-directional radio ranges equipped with tactical air navigation capabilities (VORTAC) are standard short-range navigation aids used to define airways and air routes and to provide distance and direction information to pilots, (b) low- and medium-frequency facilities include radio beacons and ranges which provide pilots with direction and weather information, (c) instrument landing systems provide pilots with direction, distance, and glide slope information necessary for making safe approaches to runways under poor visibility conditions, (d) visual aids consist primarily of lighting aids which also assist the pilot in making final approaches to airport runways, particularly in areas where terrain or other environmental factors cause potential hazards to safe landings.

5. Housing, utilities, and miscellaneous facilities - This section includes general support facilities.

6. Aircraft and related equipment - This activity provides for facility flight inspection, aircraft, avionics, and related training equipment to inspect the accuracy and other characteristics of navigation and traffic control aids from the air.

7. Development, test, and evaluation facilities - This activity provides for the construction and improvement of plant and facilities at the National Aviation Facilities Experimental Center in Atlantic City, N. J. It also includes the procurement of capital items of equipment for use in the engineering and development program.

FEDERAL AVIATION ADMINISTRATION

Appropriation: Facilities and Equipment
(Airport and Airway Trust Fund) Budget Year: 1975

Summary of Appropriation Requirements

Appropriation 1974 $250,000,000

Net Difference - 1975 over 1974:

Activity	1974 Appropriation	1975 Estimate	Difference Increase (+) Decrease (-)
Long range radar...	$ 41,010,000	$ 23,734,800	$-17,275,200
Automation equipment.....	22,785,000	15,333,400	- 7,451,600
Other center facilities.....	18,614,000	16,380,800	- 2,233,200
Terminal area radar.....	15,032,000	37,701,000	+22,669,000
Terminal area automation.....	25,811,000	25,780,000	- 31,000
Other tower facilities.....	25,317,000	36,181,000	+10,864,000
Domestic flight service stations...	13,793,000	20,244,000	+ 6,451,000
International flight service stations...	377,000	643,000	+ 266,000
VORTAC.....	6,100,000	9,608,800	+ 3,508,800
Low and medium frequency facilities.	-	68,800	+ 68,800
Instrument landing systems.....	30,392,000	22,967,400	- 7,424,600
Visual aids.....	3,160,000	5,539,000	+ 2,379,000
Housing, utilities, and miscellaneous...	9,442,000	14,746,000	+ 5,304,000
Aircraft and related equipment.....	35,467,000	18,472,000	-16,995,000
Development, test and evaluation.....	2,700,000	2,600,000	- 100,000
Total.....	$250,000,000	$250,000,000	$ -0-

$ -0-

Total estimate of appropriation, 1975 $250,000,000

FACILITIES AND EQUIPMENT (AIRPORT AND AIRWAY TRUST FUND)

Summary of Requirements by Activity

Activity	1975 Request
1. Air route traffic control facilities	
a. Long range radar	$ 23,734,800
b. Automation equipment	15,333,400
c. Other center facilities	16,380,800
2. Airport traffic control facilities	
a. Terminal area radar	37,701,000
b. Terminal area automation	25,780,000
c. Other tower facilities	36,181,000
3. Flight service facilities	
a. Flight service stations	20,244,000
b. International flight service stations	643,000
4. Air navigation facilities	
a. VORTAC	9,608,800
b. Low and medium frequency facilities	68,800
c. Instrument landing systems	22,967,400
d. Visual aids	5,539,000
5. Housing, utilities and miscellaneous facilities	14,746,000
6. Aircraft and related equipment	18,472,000
7. Development, test and evaluation facilities	2,600,000
Total	$250,000,000

RESEARCH, ENGINEERING AND DEVELOPMENT (AIRPORT AND AIRWAY TRUST FUND)

PROGRAM AND PERFORMANCE

The FAA conducts engineering and development programs to improve the national air traffic control system and to enhance its operational safety, capacity and efficiency. The efforts are based on exploiting current technology and applying system engineering techniques to the development and integration of new equipment into the total system. The agency also administers aviation medical research aimed at strengthening the personal effectiveness of traffic controllers.

These programs are conducted, under the direction of the agency's technical personnel, through contracts with qualified private firms, universities, individuals, and other Government agencies.

1. Air traffic control - This provides for incremental system improvements and the major upgrading of those systems required to perform modern traffic control functions. These include the surveillance of aircraft by tracking radars and control center processing of flight information received from pilots, airline dispatchers, flight service stations, and the surveillance system through a national communications network. The high-speed, or real-time, computerized processing of this data for traffic controllers is the key to increasing system capacity. This traffic control program also provides for increasing the capacity of major airports to safely and efficiently handle larger, faster passenger aircraft. These increases in airport capacity will be achieved by the development of new, computerized airport traffic control systems which will enable more efficient metering and spacing of terminal traffic under all weather conditions.

2. Navigation - This provides for the development of ground-based systems which insure the precision navigation of aircraft. This capability ranks in importance with the radar surveillance of aircraft in the effort to increase system capacity. It requires the development of new omni-range stations and sophisticated landing systems capable of handling increased air traffic in adverse weather conditions.

3. Aviation weather - This provides for a program, coordinated with the Departments of Defense and Commerce, to modernize the acquisition, processing, dissemination and display of weather information tailored to the needs of aviation users.

4. Aviation medicine - This provides for conducting aeromedical research directed toward identifying and eliminating those physiological and psychological factors inimical to personnel engaged in operating the traffic control system.

	New Obligational Authority	Obligations
Air traffic control	$53,260,000	$53,260,000
Navigation	13,975,000	13,975,000
Aviation weather	1,765,000	1,765,000
Aviation medicine	1,000,000	1,000,000
Total 1974 Estimate	$70,000,000	$70,000,000

General Justification

The FY 1975 budget authority being requested is $70 million. This request reflects domestic and international requirements to make air travel safer, to increase the efficiency of the traffic control system and to maintain the technological momentum needed to meet these needs. Although these obligations are fundamental in any time frame, satisfying them will become an imperative at air traffic levels of the next decade. The following programs in this request are designed to meet these commitments.

$8.1 million for Phase II and Phase III development of a new all-weather microwave landing system -- $7.6 million for intensified development of advanced aircraft radar beacons (discrete address) and integrated, ground-based collision control systems -- $3.7 million for improving runways and the safety of airport ground operations -- $3.0 million for the development of advanced ground-based aids to navigation -- $2.8 million for detection and avoidance of wake vortices in airport areas -- $2.3 million for the evaluation and development of collision avoidance systems and pilot warning indicators -- $1.8 million for improving the acquisition, communication and display of weather data tailored to the needs of pilots and air traffic controllers.

$9.2 million for development of en route automation test beds and improving the reliability, maintainability and efficiency of NAS Stage A -- $6.4 million for development of terminal automation test beds; enhancement of the ARTS III system (metering, spacing, conflict resolution) and its adaptation to the needs of low-density terminal areas -- $6.5 million for increasing the efficiency of communications networks and developing an experimental communications satellite (AEROSAT) -- $3.4 million for automating a new nation-wide network of flight service stations -- $2.7 million for systems engineering and analysis -- $1.2 million for applying advanced computer technologies to traffic control systems -- $1.0 million for research programs designed to improve the personal efficiency and performance of air traffic controllers.

	Positions
Fiscal year 1973 Actual (Trust Fund)	493
Fiscal year 1974 Estimate (Trust Fund)	643
Fiscal year 1975 Estimate (Trust Fund)	945

This estimate reflects an increase of 302 positions associated with a realignment of functions which in FY 1974 were funded from the Facilities and Equipment appropriation; the latter has taken a more-than-compensating reduction.

The personnel financed under this appropriation are located at the National Aviation Facilities Experimental Center, Atlantic City, New Jersey, the Civil Aeromedical Institute, Oklahoma City, Oklahoma, and the Washington, D.C., offices of the FAA. These personnel fall under three general categories: Program Supervision and Contract Management, Test and Evaluation, and Aeromedical Research.

Program Supervision and Contract Management

These personnel are responsible for technical direction and program management. They are directly concerned with the complex program to develop and modernize complete systems (or components of systems) which are needed to improve and expand the current system as well as to develop future systems to increase the capacity of the nation's airport and airway systems. The primary function of these people is to serve as managers of a major technical effort falling within their area of technical expertise. Other areas of technical work requires the services of air traffic controllers, computer systems analysts, operations research analysts, meteorologists and mathematicians.

A prime task of these personnel is to manage and monitor one or more development contracts. In fiscal year 1975 contracts will be awarded which will total $45,643,000. These will range in dollar value from as small as $5,000 to many millions. The nature and complexity of these contracts, rather than their dollar value, will determine the number which can be supervised by one manager in a manner which protects the best interests of the Government. The contracts cover such subject areas as new all-weather, microwave landing systems, wake turbulence detection systems, pilot warning indicators/collision avoidance systems, development of low-cost distance measuring equipment for terminal areas, improvements in materials and techniques to insure greater survivability of airborne flight data recorders, etc.

Test and Evaluation

The National Aviation Facilities Experimental Center requires a staff of engineers, air traffic controllers, computer specialists, physicists, pilots, aircraft mechanics and various skilled technicians. These personnel are engaged in project activities in all phases of air navigation, air traffic control, airport design and development, systems evaluation, communications, weather, and aircraft safety. Flight support of projects is provided by airmen flying and maintaining aircraft ranging from a small single-engine aircraft to high-performance jet and turboprop aircraft. Some typical test and evaluation projects are; testing of new designs for aircraft antennae, testing of a radar performance monitor, development of techniques to increase the capacity of terminal areas, development of improved radar detection system for airport surface traffic, testing of azimuth pulse generators for use of position data with radar video digitizers, testing of a medium speed printer and testing of a data link air/ground digital communications processor.

Aeromedical Research

The aeromedical research efforts of the agency conducted at the Civil Aeromedical Institute are aimed at controlling the biomedical factors that are causes of or contribute to control errors and incidents in the National Aviation System. They are concerned with air traffic controllers and their work environment. These programs cover all the broader aspects of biomedical factors related to the airways system including bioengineering, psychology, physiology, pharmacology and biochemistry and general medicine to determine the adverse effects on performance of disease and psychosomatic deficiencies in air traffic controllers.

GRANTS-IN-AID FOR AIRPORTS (AIRPORT AND AIRWAY TRUST FUND)

Budget Activity	Budget Authority	Obligations	Outlays
Grants for planning	$13,000,000	$ 15,000,000	$ 10,000,000
Grants for construction	-0-	310,000,000	280,000,000
Total	$13,000,000	$325,000,000	$290,000,000

The total outlays include an estimated $280 million related to requirements associated with the issuance of development grant offers under the Airport and Airway Development Act of 1970, as amended, against prior year obligations and tentative allocations for projects estimated to be approved for fiscal year 1975. The remainder of $10 million is for payments under the Planning Grant Program.

GENERAL JUSTIFICATION

The Airport and Airway Development Act of 1970, (Public Law 91-258; 84 Stat. 219), as amended, authorized a program of grants of funds to planning agencies for

airport system planning and to public agencies for airport master planning. It also authorizes a program of grants of funds to public agency sponsors for airport development.

Airport Planning Grant Program

Section 13 of the Airport and Airway Development Act authorizes a total of $75 million for grants to planning agencies for airport system planning and to public agencies for airport master planning of which not more than $15 million may be obligated in any one fiscal year.

This program has significance because of the long range planning needed for airports and the need to correlate airport planning with comprehensive development plans considering environmental impact as well as relationships to other development. From the aeronautical-use standpoint, specific airport facilities should be in place by the time that the demand for the facilities comes into full being. This means that planning must begin early enough to permit required development to be initiated at the appropriate point in time. A corollary point is that planning must begin early enough to permit effective coordination of airport development with all other development. Since a new major airport may take ten years to plan and develop, it is obvious that the entire process must be one of forward planning and early action.

The planning grant program authorizes Federal grants of up to two-thirds of the cost incurred to promote effective planning for the development of individual airports and toward the development of an adequate National Airport System Plan. During Fiscal Year 1973 grant offers totaling $10.0 million were issued for 275 projects in 47 states. 251 of the grant offers issued were for preparation of master plans at individual airports, and 24 covered the preparation of state-wide or metropolitan/regional airport system plans.

During Fiscal Years 1974 and 1975, the agency expects that eligible sponsors and planning agencies will submit approximately 300 applications during each of these years for fund assistance and that a majority of these requests will result in grant awards.

In Fiscal Year 1975 the agency plans to obligate $15 million, the maximum allowed in any one fiscal year for the Planning Grant Program. To conduct this program in FY 1975, the agency is requesting a $13 million appropriation. The remainder required for the program funding in FY 1975 will be provided from unobligated funds carried over from prior program years.

Airport Development Aid Program

Section 14 of the Airport and Airway Development Act of 1970, as amended, authorizes the Secretary of Transportation to incur obligations of $1,460 million for airport development grants for Fiscal Year 1971 through 1975. Under this authorization, the Department of Transportation (FAA) provides grants to airport sponsors to assist them in developing new civil airports or in bringing existing airports to standards compatible with the present and future needs of civil aviation.

These airports form a part of the system of public airports which are designed to adequately meet the needs of civil aviation throughout the nation. Projects supported by these grants include certification and security equipment, construction of runways and taxiways, purchase of land, and provision of runway and taxiway lighting systems.

Timing of fund availability for airport development grants is of great importance. Sponsors generally need Federal assistance in order to undertake airport development needed for the national airport system. Raising the sponsor's share of project costs may be impossible without reasonable assurance that Federal

assistance will be provided, and even when there is such assurance it takes time for local action to take place, for instance, to pass a bond issue.

A summary of the activity in Airport Development Aid Program for FY 1973 and projections through FY 1975 are shown below:

Fiscal Year	Requests		Grants Issued	
	Number	Amount (Millions)	Number	Amount (Millions)
1973	692	$282.6	450	$206.6
1974 (Estimated)	630	380.0	600	300.0
1975 (Estimated)	660	400.0	650	310.0

In order to carry out the intent of Section 14 that sponsors be aided in long-term planning for airport development and to meet the bona fide requests for airport development grant assistance, it is requested that the full 1975 program for airport development grant obligations be authorized at $310,000,000 as provided in P. L. 91-258, as amended.

Liquidation of Contract Authority

The appropriation request under this heading includes funds to pay airport sponsors for expenditures incurred for airport development projects undertaken as a result of grant agreements which have been entered into under the contract authority provided by the Airport and Airway Development Act. To liquidate obligations incurred under this contract authority, an appropriation of $280 million is requested in Fiscal Year 1975.

Under the contract authority, total obligations at the end of Fiscal Year 1974 are estimated to be $957 million. The total cash appropriated through Fiscal Year 1974, for liquidation of obligations entered into under this authority ($452 million), and use of available cash carried over from the Federal Aid to Airports Program ($50 million) amounts to $502 million.

At the end of Fiscal Year 1974 unliquidated obligations are expected to amount to $455 million. In Fiscal Year 1975, the program provides for obligation of an additional $310 million for airport development grants. Based upon these program levels, it is estimated that a liquidating cash appropriation of $280 million is required to liquidate valid obligations under the grant agreements which will become due for payment during Fiscal Year 1975.

There follows a summary table which reflects the status of this program.

	Cumulative thru 1974	1975 Estimate	Total
Contract Authorization	$1,460	0	$1,460
Obligations	957	$310	1,267
Liquidating Cash Appropriation	502	280	782

SUBCOMMITTEE RECESS

Senator BYRD. Thank you. This subcommittee will stand in recess until 10 a.m., Wednesday in room S-146, where we will hear the Urban Mass Transportation Administration's requests.

[Whereupon at 4:35 p.m. Monday, July 22, the subcommittee was recessed, to reconvene at 10 a.m. Monday, July 24.]

DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1975

WEDNESDAY, JULY 24, 1974

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m. in room S–146, the Capitol, Hon. Robert C. Byrd (chairman) presiding.

Present: Senators Byrd, Case, and Mathias.

DEPARTMENT OF TRANSPORTATION

URBAN MASS TRANSPORTATION ADMINISTRATION

STATEMENT OF FRANK C. HERRINGER, ADMINISTRATOR, URBAN MASS TRANSPORTATION ADMINISTRATION

ACCOMPANIED BY:

WILLIAM H. BOSWELL, ASSOCIATE ADMINISTRATOR FOR ADMINISTRATION

ROBERT H. McMANUS, ASSOCIATE ADMINISTRATOR FOR TRANSIT PLANNING

JEROME C. PREMO, ASSOCIATE ADMINISTRATOR FOR CAPITAL ASSISTANCE

GEORGE J. PASTOR, ACTING ASSOCIATE ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT

T. E. HOADLEY, DIRECTOR OF FINANCIAL MANAGEMENT

RICHARD W. SLOCUM, DEPUTY DIRECTOR OF BUDGET, DEPARTMENT OF TRANSPORTATION

INTRODUCTION OF ASSOCIATES

Senator BYRD. The subcommittee will resume its hearings.

Next for the subcommittee's consideration are the budget requests for the Urban Mass Transportation Administration. These requests are shown as items 68 through 74 on pages 16 and 17 of the table. We have the Administrator of UMTA, Mr. Frank Herringer, with us today to testify in support of these requests.

Mr. Herringer, you may proceed to introduce your associates and give us the highlights of your statement at this time.

STATEMENT OF FRANK C. HERRINGER

Mr. HERRINGER. Thank you. It is a pleasure to appear before this committee again.

I have with me, at the witness table, several of my associates: from my left, Thomas Hoadley, who is Director of our Budget Office; William Boswell, Associate Administrator for Administration; on my immediate right is Mr. Premo who is Associate Administrator for Capital Assistance; at his right, Robert McManus, who is Associate Administrator for Transit Planning; and at his right, George Pastor, Acting Associate Administrator for Research and Development.

With the Chair's permission, I propose to confine my initial comments to the effects of the House action on our budget estimate, and with your permission, I will submit a more lengthy statement for the record.

Senator BYRD. Your more lengthy statement will be included in the record as though read.

REVIEW OF THE PAST YEAR

Mr. HERRINGER. Needless to say, it has been a busy year for me and for the Urban Mass Transportation Administration, and it has been an extremely significant year for all of urban transportation.

Before presenting our budget proposals for fiscal year 1975, I believe it would be worth while to spend a few moments reviewing some of the key developments of the past year.

RIDERSHIP UP

As many of you know, the calendar year 1973 marked the first year since World War II that transit ridership increased. There are, of course, many factors that contributed to the increase, including the energy crisis and the heightened concern with clean air.

However, I believe that this committee and the others in the Congress and the executive branch who have been concerned with mass transit for the past decade should also take some well-earned credit for this result. The UMTA program is having an effect on transit ridership, and that effect is positive. The 15,000 new buses, the 2,000 rail rapid cars, and the 1,000 commuter rail cars that were purchased in part with Federal funds, without doubt contributed to the increase in ridership.

FEDERAL-AID HIGHWAY ACT OF 1973

Another particularly significant event in 1973 was the passage of the Federal-Aid Highway Act. For the first time, under this bill, funds previously available only for highways were made available at local option for mass transit projects.

We are still in the early stages of evaluating and using the provisions of this bill, but I am convinced that it will become a major factor in our program over time. Several cities, including Boston and Philadelphia, have indicated their desire to spend hundreds of millions of dollars on mass transit, that previously were committed to interstate highway projects.

In addition, and probably more significant in the long run, New York and other cities have indicated that they intend to use their urban systems highway money partially for mass transit purposes. This additional funding is most welcome and needed.

ORGANIZATIONAL CHANGE

UMTA took several steps, during fiscal 1974, to respond to the changing environment in which we found ourselves. As a former management consultant, I took particular interest in analyzing the organizational structure of UMTA during my first 6 months as Administrator.

In 1973, UMTA had basically the same organizational structure as it had in 1968, when the Administration had only 50 employees and a budget of $175 million. I concluded that several changes were in order, and these changes in the organization were implemented during the past year.

We created a new Office of Transit Management to assist transit operators in organizing, controlling, and marketing their operations. We at the Federal level have contributed several billions of dollars to plan and construct local transit operations, and I feel that we have an obligation to help insure that these facilities are efficiently and adequately used. Our plans are that this new Office of Transit Management will concentrate on these needs and provide a continuing liaison with the transit industry.

For several reasons, I concluded that our Office of Program Operations should also be reorganized. Over time, this one office had developed direct control over 90 percent of UMTA projects. We now have an Office of Capital Assistance that concentrates on the capital grants, and an Office of Transit Planning that has assumed responsibility for the technical studies planning grants. As a part of its planning responsibilities, this office also encompasses demonstrations from Research and Development, and the service development demonstrations for the elderly and the handicapped that were formerly affiliated with our Office of Civil Rights.

As a side benefit of this reorganization, the Office of Civil Rights and the Office of Research and Development will be better able to concentrate on those functions for which they are principally responsible. I have also moved the Morgantown office, which formerly reported directly to the Administrator, to the Associate Administrator for Research and Development. In this manner, we hope to facilitate transfer of information gained from the Morgantown project to our other ongoing efforts in personal rapid transit.

No organization structure will function well without qualified people, and we have spent a great deal of time over the past year in attracting and adding to our already excellent staff. I have devoted considerable personal time to strengthening the senior staff, and many of the faces you see here today are new to UMTA. I am proud of my staff, and I feel that, while small in numbers, we have the capability to do high quality work.

PROGRAM REVIEW

In the past year, we have followed up on several areas in which you and your colleagues in the House expressed particular concern not only in the hearing rooms, but also through your decisions on the budget.

In particular, you expressed considerable concern regarding the course of the service development program. This concern was made very tangible by the fact that you reduced our budget request for $4.25 million to $2.25 million. It was suggested that the program was without coherence and direction.

My review of this office indicated that your perceptions had considerable validity. The purpose of the service development program is to contribute to the solution of the transportation problems of the transportation deprived, such as the elderly and handicapped. However, the program had evolved to a series of operating subsidies for unrelated projects.

When I realized this, I stopped approving new projects; and rather, we used the moneys appropriated to continue certain worthwhile, old projects to which we were committed, and to begin some serious research on what the transportation problems of the target groups really are.

Then, we will structure a program to conduct experiments to evaluate various alternative approaches to solving those problems. I am confident that next year will see the initiation of several demonstrations and experiments that are soundly conceived and that will lead, in the long term, to better mobility for the transportation deprived.

PERSONAL RAPID TRANSIT

Another area in which considerable concern was expressed was in UMTA's handling of the personal rapid transit program. It was suggested that we were, in fact, pursuing several parallel courses and that we did not know which PRT was preferable. In response, we have decided to consolidate our PRT program into one principal effort. That effort is the evaluation of what we call high-performance PRT—capable of carrying 14,000 passengers per lane per hour. If the results of our ongoing evaluation efforts confirm the desirability of this approach, we plan to proceed with prototype development this summer.

Other PRT projects also appear in the budget—the completion of the Morgantown effort and initial work on a more advanced PRT system. UMTA has already learned a great deal from the Morgantown project, and 1975 will see the end of this research activity, and hopefully, an operating PRT system in Morgantown, which will be the most advanced in the world.

UMTA is being urged by some to go beyond the high performance PRT and develop technology for PRT's with even greater capacity and capability. Before we embark on more advanced PRT development, however, we propose to analyze the market to determine whether development of such a system is necessary, and also we will investigate to determine if there are technical obstacles that would make such development unwise.

At this stage, this effort is minor, but it could lead in the longer term to further PRT work if the initial studies prove satisfactory. To make that judgment, both the committee and UMTA need the results of these preliminary studies.

While we are on the general topic of PRT, I recall that last year a question was raised as to whether UMTA was paying attention

to transportation research efforts in other countries. I personally went to Europe last summer and visited France, Germany, and England, and spent considerable time observing PRT developments in each of these countries as well as their general approach to urban transportation. This was time well spent and contributed considerably to my perspective on PRT and other developments.

In general, I believe our PRT program compares favorably with those in France and Germany, and we hope to share with them what we learn to avoid needless duplication.

BUDGET ESTIMATE

The year 1974 was eventful, and during it, I gained a greater appreciation of the challenge that we face in mass transportation. I believe that our 1975 budget submission reflects the importance of the task ahead of us.

For fiscal year 1975, we are estimating a substantial increase in the UMTA budget—overall, an increase from $985.5 million in fiscal 1974 to $1,343 million in fiscal year 1975. This program total is based on our appeal of the House action and is $8 million less than the amount in the President's budget.

CAPITAL ASSISTANCE

Taking the elements of the budget one by one, the largest increase proposed is in capital grants—$1,225 million estimated in fiscal year 1975, versus the 1974 level of $872 million. The increase from two-thirds to 80 percent in the Federal share of transit projects mandated by the 1973 Highway Act, and other factors such as the Clean Air Act and the energy crisis, have all contributed to a considerable increase in the demand for mass transit capital.

The increase proposed in the UMTA capital grant activity is significant. While it may be perceived to be modest if viewed against the backdrop of the apparent demand, it will provide for continuation of the current program. However, many cities are planning expensive new capital-intensive systems. I do not believe it is reasonable for the UMTA budget to be determined solely by the ability of cities to raise 20 percent of the share. We are attempting to develop rigorous criteria against which to measure the cost effectiveness of proposed new construction projects, but even with cost effective projects, questions remain about the equitable level and rate of Federal funding.

Whatever the level of funding is for the program, cities need long-term assurance of funding, because they have difficulty planning and guiding a major mass transit capital project on the basis of uncertain year-to-year Federal availability of funds. The administration's proposed unified transportation assistance program, H.R. 12589, addresses that problem, and I hope that we can also discuss it here.

In addition to the $1,225 million in capital facilities grants estimated under the UMTA program, the President's budget contemplated that $200 million in highway funds will be spent on mass transportation, as the result of local decisions. Based on our more recent experience with the Federal-Aid Highway Act, during 1974, I believe that these estimates are too conservative.

RESEARCH AND DEVELOPMENT

For our research and development function, we have revised the modest increase—from $66.2 million, which was the activity level for 1974, to $67.8 million, down from $75 million initially requested in fiscal year 1975.

The R. & D. proposal contemplates a shift in emphasis toward nonhardware research and development. New technology will help in developing mass transit ridership, but at least equally important to the consumer is the provision of adequate service, tailored to his particular needs. We hope that through an expanded demonstration program geared to specific objectives, we will be able to determine how transit operators can provide service more attractive to the consumer.

Our R. & D. budget provides for continuing our activity in bus and rail research, but it recognizes that we have made considerable progress in this area and that massive, additional expenditures may not be necessary.

As I mentioned earlier, we propose to continue funding for PRT at what we believe is an adequate rate, concentrating on the evaluation and possible prototype development of the high performance PRT.

As you recommended last year, the urban tracked air cushion vehicle development has been shifted to the Federal Railroad Administration.

I hope that, in addition to exploring the various individual projects, we will have an opportunity to discuss what the Federal role should be in research and development in mass transportation. The Urban Mass Transporation program has played an important part in stimulating research in the private sector, but as we begin to provide an expanded market for manufacturers through the capital grants activity, one wonders whether private industry should not be expected to take a greater initiative in funding transit research.

Perhaps UMTA's role should be concentrated on the high-cost, high-risk ventures which promise the most dramatic payoffs in terms of improved transit service, relying more on private industry to come up with product improvements for systems for which there is already a demonstrated market.

Your counterparts in the House made drastic reductions in our fiscal year 1975 R. & D. request—some 27,120,000 dollars' worth. After careful examination of the House action, I have determined that, while I can concur with some of the reductions, I must appeal, in the interest of continuity of R. & D. activities already begun, other reductions. I will deal with each subactivity we are appealing separately.

I. RAIL TRANSIT—REDUCED $250,000

The amount estimated for Rail Transit in fiscal year 1975 contained no allowance for flexibility or contingencies. Bids on facilities needed for conduct of R. & D. especially the permanent power station for the transit test track at Pueblo, have been considerably higher than original estimates. This has required substantial curtailment of planned R. & D. efforts, including elimination of virtually all new starts. A further reduction of $250,000 in fiscal year 1975 below what has been estimated will necessitate abandoning productive research on rail noise abatement. Since noise will remain a critical problem, eventually, this research will have to be resumed, no doubt at an increased cost. Con-

siderable time will have been lost in obtaining viable techniques for noise abatement.

Accordingly, restoration of the $250,000 is requested.

II. NEW SYSTEMS—REDUCED BY $19,780,000: HIGH PERFORMANCE

(*a*) High Performance PRT—reduced by $10,620,000: Over the last 6 years, it has been realized that high technology systems development activity can potentially provide superior means of daily transportation. The high performance PRT has been specified to provide the most advanced service characteristics that can be provided in a reasonable period of time. The specified capacity of 14,000 seats per hour will provide efficient use of capital expenditures. The system will have a significant capability to serve dispersed origins and destinations.

The high performance PRT effort being proposed is a test track installation. It will address and solve all engineering problems of functions, reliability and safety that must be addressed before any consideration can be given to urban installation. The test track would not be tied to any proposed specific system installation.

The primary problem impeding the introduction of PRT is that of reduction to practice. Attractive as the concept is, planners and city officials will not seriously consider such installations as long as test track systems providing a needed base of empirical information do not exist. At the present time, no system hardware exists that is capable of providing significant capacity and a capability for serving dispersed origins and destinations.

The UMTA experimentation addressing the development of a high performance PRT has been underway for more than 2 years. A number of extremely strong proposals from major industrial concerns are in hand and evaluation is proceeding.

The restoration of $10,620,000 is needed to allow UMTA to pursue the orderly development of personal rapid transit systems.

(*b*) Dual mode transit—reduced by $7,750,000: Dual mode transit can potentially provide service that more nearly matches the auto's capability for point-to-point travel. Further, dual mode transit may obtain a higher utilization of labor and vehicles over conventional bus transit because of the flexible routing and scheduling obtained by its central on-line computer dispatching system.

The House report references a Department of Transportation report covering dual mode energy consumption. These references are misleading, as the Department report apparently in question deals with a mini-car-type system that envisages distribution of hundreds of thousands of small personal vehicles in the Boston area. This concept is not connected with the UMTA dual mode program. Recent studies indicate that dual mode transit requires less than one-half the energy of private automobiles on a per passenger-mile basis.

A significant effort has been put into the UMTA development program which has proceeded for about 2 years. Three major private industrial organizations are in the process of completion of design studies for dual mode equipment. These organizations have contributed a sig-

nificant amount of cost sharing. Proposals for the feasibility phase are currently in evaluation.

Restoration of $4 million is requested to allow UMTA to continue to pursue investigation of this innovative approach to transit. It is our intention to evaluate dual mode through simulated service demonstrations of the concept, prior to embarking on any large-scale hardware development.

(*c*) Dial-A-Ride—reduced by $1,500,000: The Dial-A-Ride work that UMTA has accomplished to date addresses the needs of small communities—of about 40,000 population or less—that can be served by fleets of about 18 to 20 vehicles. This work needs to be expanded so that extended suburban regions can be served and much larger vehicle fleets can be controlled and coordinated.

This expanded work is needed to bring the increased patronage and improved productivity of Dial-A-Ride to large areas. UMTA is attempting to develop coordinated systems wherein large suburban communities, of county size, can be served by fleets of about 200 vehicles. Such transit systems, consisting of Dial-A-Ride modules comparable in size with Haddonfield, and interconnected by line-haul vehicles for long intermodal trips would be capable of providing comprehensive service over large suburban areas.

In fiscal year 1975, work towards this goal will build logically on the work accomplished to date and includes such important efforts as (1) automatic computer backup through a redundant computer—instead of manual backup as at Haddonfield—to assure reliable service, (2) control of many small Dial-A-Ride modules through a single computation facility with consequent cost savings, and (3) computerized point-to-point trip control, including coordination of transfers to minimize waiting time for passengers and to improve vehicle and drive productivities.

Other efforts that will require fiscal year 1975 funds are concerned with the orderly completion and documentation of the Haddonfield demonstration, which will be terminated in October 1974. Complete analyses and documentation of the Haddonfield project should be finished and published. Included are results of the final household survey and overall project summary and evaluation.

Additional efforts requiring fiscal year 1975 funding are completion of the computer program documentation for the existing system, work to make Dial-A-Ride computer programs available for computers of the user's choice, and continuing computer program maintenance to assure support for users of these programs.

Accordingly, restoration of the $1.5 million is requested.

That makes a total of $16,120,000, we are appealing of the $19,870,000 reduction for new systems.

III. SERVICE DEVELOPMENT

Service Development—reduced by $500,000: Pursuant to criticism by the House subcommittee last year in reviewing the fiscal year 1974 budget request, UMTA has gone through a rigorous reexamination of service development projects.

No major new projects were authorized in fiscal year 1974, rather, the resource was used to initiate major research, in collaboration with the Administration on Aging, and to continue the most promising existing projects.

As a result, the projects identified for fiscal year 1975 are those which will make the maximum addition to our knowledge base and amply justify the full level estimated.

The restoration of $500,000 is requested to allow this activity to achieve its full potential.

IV. TRANSIT SERVICE AND METHODS DEMONSTRATIONS

Transit Service and Methods Demonstration—reduced by $5 million: It is unfortunate that the House Appropriations Subcommittee has chosen to make a $5 million budget cut in one of the activities that impact on so many areas of national concern, some of which the committee itself has focused attention on; energy conservation, air quality, maximzing the use of existing transportation facilities, helping to provide a rationale for transit hardware research development efforts, developing standards for transit operations, and developing criteria to guide the allocation of capital grant resources.

The planned effort contains a mixture of demonstration projects conceived to improve the quantity and quality of transit service consistent with today's technology. These projects will demonstrate viable alternatives to major capital outlays in new facilities, reducing the consumption of energy and other natural resources in addition to shifting people from less efficient transportation modes. Because the projects have low capital requirements, utilizing existing rights-of-way, facilities, and equipment to the maximum extent possible, they are, by nature, immediate responses to the national concerns for energy conservation and clean air.

Another essential ingredient of the effort planned for 1975 that would be comprised by a budget reduction is the development of an empirical data base from which informed judgments can be made as to appropriate transit operating standards.

Demonstrating various transit service levels will help develop criteria to guide the planning of transit improvements that will raise the preference for transit among consumers in a cost-effective manner and assist the allocation of capital resources.

A restoration of $3 million is needed to allow UMTA to proceed with this essential effort.

DISPOSITION OF MORGANTOWN SYSTEM

Another matter of critical importance we are appealing is the directive that appears in the House report, which directs that, within 30 days of enactment of the 1975 appropriations bill, (1) UMTA and the University of West Virginia, UWVA, reach an agreement as to the acceptance by UWVA of the system, (2) the committee approve the agreement, and (3) if no agreement is reached, the amount appropriated is to be used to dismantle the system. This direction presents many programmatic problems and serves to place UMTA in an adverse position.

First, forcing an agreement within 30 days of enactment appears unreasonable. Negotiations must be conducted in an environment without the pressure of a deadline that would not allow the careful consideration of alternative ways to solve the Morgantown transportation problem. Results of negotiations under those circumstances will work against a completion of the R. & D. experiment and make more likely the dismantling of the system, which I do not believe anyone in the Congress, the administration, or the university really intends.

Second, completion of the R. & D. experiments at Morgantown is an essential step in the development of safe and reliable automatic transit vehicles. To date, we have spent $57.6 million on this project. Regardless of the ultimate disposition of the system itself, the additional $6,380,000 must be used in the completion of the project, or the $57.6 million spent to date will have had little tangible impact. Dismantling of the system, if it should be necessary, should not be contemplated prior to the conclusion of the experiment.

TECHNICAL STUDIES

Regarding technical studies, we propose to continue this effort at approximately the same level as it was in 1974—$37.7 million for 1975 versus $37.6 million for 1974. This will permit us to maintain the level of planning that we feel is essential to the development of adequate transportation systems. We intend to put particular emphasis of analysis of alternative transportation modes, and expect that more cost-effective transportation decisions will result. In addition, we expect that a portion of this resource will be used to fund management improvement studies, encouraged by our new transit management activity.

Here again, we must appeal, in this case, direction by the House which reduces the activity level by $1,080,000.

The reduction of the level for technical studies grants seems inconsistent when, at the same time, the House committee itself is emphasizing a need for more explicit criteria and more extensive analyses of alternatives, short-range responses to effectuate energy conservation and clean air objectives are needed and are being demanded—that is, uses of noncapital or low capital means to effect modal choice, greater attention is being demanded to planning and designing transit systems to meet the needs of the elderly and handicapped, and a flexibility objective is being emphasized. The Federal-Aid Highway Act of 1973, assumed tradeoffs among modes following examination of alternatives.

The problem facing UMTA is that all of the above programmatic directions call for a level of detail in the planning process considerably more difficult and expensive to achieve than work done heretofore. When the current guidelines for administering the capital grant program were being negotiated in 1971–1972—guidelines which embraced and foreshadowed the very directions now reemphasized—local planners were alarmed at the sophistication and expense of the planning activity suggested and wanted assurance, at least, that the financial resources required would be forthcoming. They were, in fact, so assured, this being considered the minimal and good faith response at that time in those highly volatile negotiations.

It is essential, therefore, that the technical studies activity be conducted at the $37.7 million level. This amount reflects only a $100,000 increase over fiscal year 1974 in the face of expanding needs and more expensive studies.

LIQUIDATING CASH

As you know, the capital assistance and technical studies activities are financed through an authority to obligate in advance of appropriations. We concur with the House reduction of $90 million and are requesting an appropriation of $400 million to liquidate obligations which will mature in fiscal year 1975.

ADMINISTRATIVE EXPENSES

Finally, we are requesting an allowance of $9.3 million—consisting of $7 million appropriated and $2.3 million in other available authorities, to provide the resources to effectively administer our program. The request involves the addition of 40 positions to UMTA, which, I believe, is appropriate in view of the consierable increase in our activity over the past year. Most of these position additions would be in our Washington office. However, over the next year, we will be carefully analyzing our need for a strengthened field organization.

The House report disallowed 10 positions and $300,000 in the program level, and, again, I must appeal. The principal justification for this request is to allow UMTA to increase its in-house capability of administering all phases of the program and to have less dependence on outside commercial support. A stronger UMTA staff of highly qualified personnel, skilled in urban mass transportation requirements, will permit greater in-house expertise in the direction, progress, documentation and evaluation of the program.

In order to achieve the above goal, we are requesting a restoration of the 10 positions and $300,000 disallowed. A breakdown of the request follows:

Personnel breakdown:	
Fiscal year 1974 allowance	361
House allowance	+30
Restoration requested	+10
Fiscal year 1974 UMTA request	401

The restoration of the "no-year phrase" is requested to keep the account in conformance with the language of section 4(*c*) of the Urban Mass Transportation Act of 1964, as amended. The provisions of section 4(*c*) indicate that all Federal resources utilized in the urban mass transportation program must be accounted for within stipulated amounts. Thus accounting becomes more effective when technicalities of recording such lapsing appropriated amounts with an offset increase in contract authority are avoided.

TRAVEL RESTRICTION

Further, of the $497,000 estimated for fiscal year 1975 travel for UMTA, $50,000 was disallowed by the House. We are requesting that this $50,000 be restored so that the current effort of increasing the efficiency and management of monitoring, coordinating, evaluating, inspecting, and auditing projects will not be impaired.

There are two further matters of appeal.

ELIMINATION OF SECTION 315

1. In floor action on H.R. 15405, Congressman Biaggi offered an amendment regarding mass transportation needs of the elderly and handicapped. The provision was passed and included as section 315 of the general provisions. In floor debate, it was stated that existing provisions of law governing mass transit programs already included such legislation and this language was merely confirming in nature. Because of the existence of the earlier substantive authority, inclusion of the provision in the appropriation bill may lead to subsequent unnecessary confusion.

Furthermore, it is the Department's intention to carry out its mass transportation program in accordance with the provisions contained in the earlier statutes. For the reasons outlined above, we recommend elimination from the bill of section 315 of the general provisions.

MODIFICATION OF LANGUAGE

2. Second, delete "commitments for urban mass transportation fund aggregating more than $1,321,750,000 in fiscal year 1975" on page 24, lines 3 and 4 of H.R. 15405, and insert "commitments for the Urban Mass Transportation Act of 1964, as amended, aggregating more than $1,343 million in fiscal year 1975."

The change in language will permit utilization of the urban mass transportation fund for implementing the flexible funding transit provisions of the Federal-Aid Highway Act of 1973 while maintaining the congressional constraint on the program level under the Urban Mass Transportation Act of 1964, as amended.

The increase in the program level is derived as follows:

House allowance	$1,321,750
Proposed changes:	
Research, development and demonstration, and university research and training	+19,870
Technical studies	+1,080
Administrative expenses	+300
Program level	1,343,000

The UMTA program in 1975 finds itself at a crossroads. The apparent dollar demands on the program are increasing rapidly, several new legislative proposals, including one proposed by the administration, are under discussion, and many important questions need to be answered both in the capital grants area and in the research area concerning just what the long term Federal role should be. The answers to these questions can only be arrived at through open and active consultation between the executive and legislative branches, and I hope that our dialog today will contribute toward those answers. I am, of course, looking forward to continuing to work with you on these matters, which are of consuming concern to us both.

PREPARED STATEMENT

This completes my overview of the program, and I will now be pleased to do my best to answer any questions the committee has about our 1975 budget proposal and appeals.

[The statement follows:]

Introduction

It is a pleasure to again appear before this Committee.

With the Chair's permission, I propose to confine my initial comment to the effects of the House action on our budget estimate for fiscal year 1975, and I will submit a more lengthy statement for the record. My comments today will be geared to restorations and changes we would like to have made by the Senate.

Background

Needless to say, the past year has been a busy one, and it has been an important one for urban mass transportation. Our 1975 budget estimate reflects the impact of the events which have occurred since I last appeared before you gentlemen. Resources which are planned for use in aiding and improving urban mass transportation are the greatest in the history of this Federal program.

Under the Urban Mass Transportation Act of 1964, as amended, we plan a program of $1.343 billion. An additional $200 million for transit projects is anticipated under the authorities contained in the Federal-Aid Highway Act of 1973. Thus, we propose making a total investment of $1.543 billion in urban mass transportation for fiscal year 1975.

To achieve our objectives for FY 1975, we appeal to this Committee for selected restorations of reductions and expressions on the part of the Senate which counter actions taken by the House of Representatives. Our request to the Senate involves both dollars and issues (including technical changes in the language of the proposed act) which are critical to the effective conduct of the UMTA program.

Appeal Summarized

It is requested that appropriations of $19.87 million be restored of the $30.17 million cut by the House in the Research, Development and Demonstrations and University Research and Training appropriations.

Regarding language changes, we are requesting (1) that the "no-year" provision be restored to the Administrative Expenses appropriation, (2) that there be a change in the text of Section 306 of the House Act, and (3) deletion of Section 315 of the House Act.

Further, it is requested that the Senate adopt positions which (1) counter the House requirement to negotiate a disposition of the Morgantown PRT system prior to the completion of the research project, and (2) will allow UMTA an increase of 40 positions.

Administrative Expenses (Item 68)

The House of Representatives reduced the appropriation for Administrative Expenses from $9.3 million to $7.0 million. This reduction anticipates that UMTA can use available resources to finance a part of this activity in 1975--we agree with that assertion. However, the report of the House (No. 93-1111) indicates position resources were reduced, in total, from the 401 requested to 391. Such a reduction will create problems in the conduct of our program. Position resources, both those currently available and the 40 additional requested, are the minimum number required to sustain the ongoing program and to engage in the new business planned for the budget year. Therefore, we request that the 10 positions cut by the House be restored together with a $300 thousand program level increase which is associated with those positions.

Concerning the "no-year" provision, the House stated that this language was denied. We again request that the words "to remain available until expended" be restored to this appropriation item.

The House report indicates that UMTA reduce the planned expenses for travel and transportation of persons by $50 thousand. Our estimated expenses of $497 thousand are based on a need to travel in order to effectively continue the conduct of the program. While there is an apparent merit in the desire to reduce energy consumption, it is our belief that greater long run energy savings accrue through the proper conduct of the urban mass transportation program. Thus, we request that the Senate express a posture which allows UMTA to use the planned $497 thousand for travel.

Research, Development and Demonstrations and University Research and Training (Items 69-72)

We are requesting that the Senate restore a part of the $27.9 million cut by the House in this appropriation item. While the restoration is for the Research, Development and Demonstrations limitation only, the restoration will make the total appropriation $71 million.

Research, Development and Demonstrations (Item 70)

It is requested that the Senate restore $19.87 million to this limitation--making the amount $67.75 million. With your permission, I shall itemize the subactivities involved and suggest that we discuss the detailed rationale used in requesting the restoration after these introductory remarks. The restored amounts are planned for use in the following.

-- Rail Transit - $250 thousand to conduct research on noise abatement.

-- New Systems

- $10.6 million for the High Performance PRT which is the next logical step in this transit concept.
- $4 million for Dual Mode, an amount which is less than the original $7.75 million, to conduct investigations which should provide information on the long term worth of this approach to providing transit service.
- $1.5 million for Dial-A-Ride to allow for the completion of the Haddonfield project and permit the exploration of a Dial-A-Ride service which has a greater service area and number of vehicles than is possible under existing technology.

-- Service Development - $500 thousand to permit the conduct of experiments targeted towards transit service innovations designed for the aged and the handicapped.

-- Transit Service and Methods - $3 million, of the $5 million cut, to engage in demonstration projects employing today's technology and methods which should improve the capacity of transit services and enhance the general quality of both the service and its impact on our environment.

General Provisions (Item 74)

It is requested that the dollar amount in Section 306 of the House Act be increased to $1.343 billion, consistent with the restorations requested.

Further, the text of Section 306 should be modified to substitute "commitments for the Urban Mass Transportation Act of 1964, as amended" for the words "commitments for the Urban Mass Transportation Fund." This change will simplify implementing the flexibility of funding transit projects under the Federal-Aid Highway Act of 1973, while maintaining the Congressional constraint over the program based on the Urban Mass Transportation Act of 1964.

The House added a new provision, Section 315, providing for transportation needs of the elderly and handicapped, and it is requested that the Senate delete this language as being redundant since it is essentially the same as an existing substantive provision--Section 16 of the Urban Mass Transportation Act of 1964, as amended.

Technical Studies

It is requested that the Senate express a recommendation that the Technical Studies activity level be $37.7 million, an amount which is $1.08 million above the House recommendation. This activity is based on Section 9 of the 1964 Act, and is the authorization to provide assistance for the planning efforts of the political subdivisions. UMTA has become insistent that applicants for capital assistance explore and describe alternatives considered prior to a grant approval. Local planners have demonstrated that Federal resources are required to conduct the alternative examinations. Thus, we ask the Senate to support our budget estimate.

Morgantown Project

We ask that the Senate disagree with the direction of the House of Representatives with respect to the Morgantown project. The House directs that either the University of West Virginia accept the PRT system, or the system be dismantled. It is our request that UMTA be allowed to complete the research project--scheduled to end in April 1975--before any decisions are made as to the disposition of the system.

I thank you for your attention, and will answer any questions you might have on our budget or the appeal.

MORGANTOWN SYSTEM PUBLICITY

Senator BYRD. Over the past several months, the Morgantown, W. Va., personal rapid transit (PRT) demonstration project of the Urban Mass Transportation Administration has received a lot of attention. There have been articles in most of the major newspapers and several magazines. I am sure you are aware of some of these articles, are you not?

Mr. HERRINGER. Yes, sir.

COST $64 MILLION

Senator BYRD. Now, I would like to start by asking you to give us your judgment as to what caused the current situation there, where the University of West Virginia insists that you double the size of the system or they will demand that you tear down the existing system which cost some $64 million to construct.

Mr. HERRINGER. It will, at the end of this year.

CURRENT PROBLEMS

Senator BYRD. Now, what caused this situation to develop?

Mr. HERRINGER. The Morgantown project has several years of history behind it. It is really difficult to precisely identify the causes of the current situation.

Let me say that, I do not regard the current situation with as much alarm as it has been treated by the press, nor do I think that President Harlow, of West Virginia University, does. One of the reasons you could point to as a cause is, the confusion of the objectives of the research project at Morgantown with the objectives of providing an adequate and reasonable transportation system for the university in the city of Morgantown.

The current discussions and efforts that we are going through are aimed at sorting out those two aspects. There are two very separate considerations. The Federal Government has certain research objectives that we would like to see satisfied. Morgantown is interested in being left with a transportation system that would serve the needs of the university and the town, and that they would be able to afford and operate.

I think, if we can clarify the difference between those two objectives, we could go a long way toward calming down some of the rhetoric that appeared in the press recently.

Senator BYRD. That does not answer my question.

Mr. HERRINGER. Your question was directed at the causes of the current situation.

DETAIL DISCUSSION OF MORGANTOWN SYSTEM

Senator BYRD. Get into some detail so we will know what you have reference to. In other words, what are the research objectives? How much was anticipated in the beginning that this project would cost? What promises were made, if any? What commitments were made by UMTA? Lay it all out in detail.

COST SUMMARY

Mr. HERRINGER. We can certainly provide a detailed cost history for the record, but I can summarize.

The original estimate, which is widely quoted, was $13.5 million. That was very quickly revised to—in the neighborhood of $16 million, and, then, there was subsequent revisions upward until the point where our current estimate of cost of completion is $63½ million, I believe it is.

CAUSE OF COST INCREASE

Senator BYRD. Two things, what caused the skyrocketing increase in the estimates, and, No. 2, what is meant by completion of the present system?

Mr. HERRINGER. The increase in the estimates—one reason is, that the system as currently constructed does not resemble the system that was estimated to cost $13.5 million.

Senator BYRD. Why?

Mr. HERRINGER. From our point of view and from the contractor's point of view, the original estimate was not for an adequate system, and it would not have worked as recommended and projected at that time.

Senator BYRD. Why did you start it then, if it would not work?

Mr. HERRINGER. We did not start the $13.5 million project. The $13.5 million project was a proposal that came into the Urban Mass Transportation Administration back in 1970 or 1971. That was subsequently revised, and the higher estimates are based on the revised project. What was actually built was the revised project.

Senator BYRD. You say the higher estimates were based on the revised projects. Which of the higher estimates was based on that?

Mr. HERRINGER. I would have to refer to the detail submission on the Morgantown costs.

Senator BYRD. In other words, why did you go from $18 to $63 million.

Mr. HERRINGER. The 18 to 63—we can provide details. As we have in the past, we can provide a detailed description of the individual escalation in the cost, but I can give a general indication. There were changes in the design that were not anticipated when the rough designs were made back in 1970 and 1971. This happens with every major research project.

There were escalations in the cost, particularly in the construction side of the project—construction of the guideway—that were not anticipated. It was both a question of engineering problems that were not anticipated and inflationary pressures that were not anticipated.

ENGINEERING PROBLEMS

Senator BYRD. I understand the inflationary pressures, but the changes in the engineering problems that were not anticipated, how do you explain that?

Mr. HERRINGER. The system is designed to be an automated transportation system, with unmanned vehicles that carry between 12 and 20 passengers, that are controlled by computer and travel between three stations in Morgantown, and about 2½ miles of guideway.

Senator CASE. Straight, single lines?

Mr. HERRINGER. A double line in a loop. It has off-stations so vehicles do not have to stop. A vehicle does not have to wait for the vehicle in front of it.

The Chairman asked what I mean by completion of the research project.

Senator CASE. This was to have been a rail?

Mr. HERRINGER. No, it is a concrete guideway, rubber tired vehicles on concrete guideway.

Senator CASE. But, running on its own right-of-way?

Mr. HERRINGER. That is right, separate right-of-way, most of which is elevated.

Senator CASE. Diesel?

Mr. HERRINGER. It is electric power.

Senator CASE. The power would come from an overhead——

Mr. HERRINGER. It is a third-rail type of power.

Senator CASE. You do not have rails?

Mr. HERRINGER. Concrete, almost like highway.

Senator CASE. Rubber tires?

Mr. HERRINGER. Rubber tires.

Getting to the Chairman's question of completion, which will occur a year from last April—we will have 45 vehicles, 3.2 miles of guideway and three stations and associated support facilities, including guideway heating—very elaborate guideway heating system.

ASSURANCE ON TOTAL COST

Senator BYRD. Eighteen to sixty-three point five—what assurance do we have that, that is the final figure?

Mr. HERRINGER. Mr. Chairman, I have been Administrator of UMTA about 18 months now. When I first came to UMTA, I was preparing almost immediately for the appropriations hearings, and as I read over past hearings I recognized this escalation in cost was a matter of concern both to Congress and to the administration. I sat down with our people, the contractors, and people in Morgantown and attempted to arrive at an estimate of cost of completion of this phase.

The estimate that we arrived at was $19.5 million at that time. Our contractor agreed to complete this phase I(b) system for that $19.5 million. We now have a fixed price contract with Boeing, a ceiling price, and that represents money that was spent last year and this year, and the money that we are asking for this year, $6.38 million, is within that. That would complete this phase of the project and is within that $19 million estimate I gave last year.

So, the short answer to your question is, we have a fixed price contract with the Boeing Co.

DESCRIPTION OF MORGANTOWN PHASE 1

Senator BYRD. What constitutes phase 1, the completion of the three stations, 3.2 miles and 45 vehicles that—completes phase 1?

Mr. HERRINGER. That is correct.

Senator BYRD. At a cost of how much?

Mr. HERRINGER. $63 million, plus.

Senator BYRD. Who is paying the difference between $19.5 million and the $63.5 million?

Mr. HERRINGER. That represents past expenditures. In other words, through last year, we had spent $57 million, and, then, last year's appropriation, plus this year's appropriation equals the 19, but the whole amount will be $64 million.

Senator BYRD. So, you spent to date, how much?

Mr. HERRINGER. To date, we have spent $57 million, and we are asking for six more.

Senator BYRD. $57 million to date?

Mr. HERRINGER. That is right.

Senator BYRD. And you are asking for six more?

Mr. HERRINGER. That is correct.

Senator BYRD. You have a contract with Boeing—an agreement with Boeing that the cost will not be above that?

Mr. HERRINGER. That is correct.

Senator BYRD. Has Boeing constructed this throughout, from the beginning?

Mr. HERRINGER. No. Boeing has been involved from the beginning, but initially, they were a subcontractor to the Jet Propulsion Laboratories, JPL. And JPL bowed out of the project in—I guess, it was April of 1971, and Boeing, who was then a subcontractor, became the prime contractor.

COST INCREASED THREE AND ONE-HALF TIMES

Senator BYRD. How in the world could this increase three and one-half times from an $18 million estimate? Leaving aside the inflationary increases, what happened on the engineering side that caused such a miscalculation?

Mr. HERRINGER. There were many problem areas with the vehicle, and I can list some of them. However, the important thing to recognize, Mr. Chairman, is that this is a research project, and it was entered into as a research project with the understanding there were a lot of unknowns. It is impossible on a research project to design the final product when you are starting from scratch, when you are virtually breaking new ground.

There were problems with the vehicle propulsion systems and problems with the steering. The brakes did not work as we expected them to. The command and control system had problems, and the additional guideway heating was necessary.

As you are aware, one of the reasons Morgantown was selected was that it had a wide variety of climatological conditions. Initially, it was not anticipated just how wide that variety was, and it turned out more guideway heating was necessary, which was very expensive.

Senator CASE. This means, in effect, the roadway was heated so snow would melt?

Mr. HERRINGER. That is correct. There are a series of pipes through the concrete and warm liquid is pumped through the pipes.

Senator CASE. It is heated by some kind of——

Mr. HERRINGER. It is heated by boilers. It is a chemical though.

Mr. PASTOR. It is a chemical.

Senator CASE. Are there any other roadways that have been treated in this fashion?

Mr. HERRINGER. I am not aware of any.

Mr. PASTOR. Some commercial driveways are.

Senator CASE. It is a very interesting point.

FIFTY PERCENT OF ANTICIPATION

Senator BYRD. I see how one cannot anticipate all the problems, but this is not the norm. If you start out with a research project that ends up—and this has not ended up yet—it ends up there are three stations—and that is what percentage of the total project that people in West Virginia want?

Mr. HERRINGER. They want six stations—about 50 percent—a longer run, serving an additional part of the campus.

Senator BYRD. The thing escalates 3½ times. Somebody down there, in my judgment, ought to be replaced, if this is the way—all of our research has problems, but I should not think they all end up costing three and one-half times what the original estimate was.

Mr. HERRINGER. I would certainly hope not, or else, I would be replaced very quickly. As you say, there are many factors, inflation, excess constructions costs, unanticipated design changes, and I would say some misjudgments as well. I would be less than candid if I did not say that was one of the causes.

CEILING PRICE CONTRACT

It is a very difficult project. That was one of the reasons I was insistent on a ceiling price from the contractor. Now, at the time we asked him for a ceiling last year, they were in a better position to give a ceiling price than they would have been 3 or 4 years ago, because there was a lot less unknown.

But, even when we established a ceiling price, the contractor indicated to us a while back, about 6 months ago, that they would be unable to complete for the ceiling price, that costs were going to run in excess of the ceiling price. And they asked for relief, and we did not give it to them, but even a year ago, the estimates were in the neighborhood of 20 percent on up.

Senator BYRD. How much of the $57 million paid out thus far has gone to Boeing?

Mr. HERRINGER. We can provide that for the record.

Senator BYRD. What is your guess.

Mr. HERRINGER. My guess is directly that Boeing has actually kept about maybe $1 million in fees, somewhere around that.

[The information follows:]

PAYMENTS TO THE BOEING COMPANY

As of June 20, 1974, payments to the Boeing Company were as follows:

Cost	$48, 908, 851. 52
Fee	2, 140, 253. 00
Total	51, 049, 104. 52

CONTRACTUAL RELATIONSHIPS

Senator BYRD. Has Boeing been the main contractor throughout?

Mr. HERRINGER. No, Jet Propulsion Laboratory was in the beginning, and Boeing was a subcontractor. Then, Boeing became the prime contractor. Much of the money, about $26 or $30 million out of the total will go for construction of the guideway, and the stations and the like, and that goes to a subcontractor. I believe that goes to F. R. Harris, Frederick Harris. Boeing as system manager gets a fee on that amount as well, and they also are the producers of the vehicles.

ELEVATED GUIDEWAY

Senator CASE. Is this the undersurface, or elevated?

Mr. HERRINGER. Much of the guideway is elevated.

Senator CASE. Of course, I suppose wherever streets cross this road, that has to be taken care of.

Mr. HERRINGER. That is elevated. It runs at grade along one of the major highways in Morgantown.

Senator CASE. Are the stations elevated?

Mr. HERRINGER. Stations, yes. They are elevated. I think all three stations are elevated.

PROVISION FOR ELEVATORS

Senator CASE. Do you have escalators?

Mr. HERRINGER. No. They are just regular stairs. There are provisions for elevators but they are not installed.

Senator CASE. I was wondering about handicapped people. If you are going to spend all that money, why not really take care of them? Every time I have to climb sometimes 50 or 60 or 70 steps, I think when I get old I am going to have a terrible time. How can people do it every day, two and three times a day?

Mr. HERRINGER. I am sure that is one of the questions that must be addressed when the decision is made as to whether this will actually go into revenue service and be taken over by the university.

Senator CASE. It is going to be run by the university?

Mr. HERRINGER. That is our hope and that is the university's hope as well.

Senator CASE. Who owns it?

Mr. HERRINGER. The university will.

Senator CASE. Are they going to buy it?

Mr. HERRINGER. No. We are going to transfer title from the Federal Government to the university.

Senator CASE. And then if the thing breaks down the university will be stuck with the right-of-way.

Mr. HERRINGER. The university has donated most of the right-of-way. It is on university property.

Senator CASE. I am not joking at all. I think anything like this is great. But, it does seem to cost a lot of money, doesn't it, Senator?

Senator BYRD. Tremendous.

Mr. HERRINGER. I agree.

Senator CASE. I wonder if this project is the right one to start with.

Mr. HERRINGER. Our research expenditures are high, but I think some perspective is also helpful. I consider this an important program, very important to the future of the cities, certainly; and when we look at other research budgets around the Government, ours is very small in comparison. The DOD R.T. & E. budget, I believe, is $9 billion. We are talking about less than 1 percent of that for the total UMTA budget, so while I certainly could not agree with you more, that it is a great deal of money, and I feel the responsibility, very heavily, but as a matter of priority, I think it is an important program and deserves attenion.

SYSTEM WILL WORK

Senator BYRD. Is it going to work?

Mr. HERRINGER. Yes, sir.

Senator BYRD. How do you know it will work?

Mr. HERRINGER. One reason is we have a fixed price contract with Boeing. They have to make it work before they leave.

Senator CASE. Are they going to be able to meet it financially?

Mr. HERRINGER. The Boeing Co. is financially sound. I don't think Morgantown will make Boeing another Lockheed.

VEHICLE PRODUCTION AND TESTING

We have established some very rigid testing and performance specifications that Boeing has to meet within the level of the contract so that is one assurance it will work. We are right on schedule now with all our preliminary tests on the vehicles. The vehicles are now being built at Boeing in Seattle. We are testing the vehicles and the components as they come off the line. They look very good.

We conducted extensive tests with five prototype vehicles for about a year. The results of those tests have been fed into the design of the final vehicles.

I am optimistic that it will work and that it will perform the job.

Senator BYRD. How many vehicles do you presently have on the guideway?

Mr. HERRINGER. None.

Senator BYRD. You do not have any?

Mr. HERRINGER. We do not have any. We completed our testing program with the five vehicles and from the results of that testing developed the specifications for the production vehicle which is now being built in Washington.

The first new vehicle rolled off the line in Kent, Wash., about a month ago—it is being tested now and should arrive in Morgantown around the 1st of September.

NUMBER OF VEHICLES AND LENGTH OF SYSTEM

There is a contract between the university and the Government that states that we will build a 45-vehicle system. Actually, the contract states 15-vehicle system with associated guideway and stations and the like, and it has a clause in it that says if the university basically—in

condensing it, paraphrasing—but it basically says if the university is unhappy with the end result that they can ask us to take it out.

Senator CASE. Can they insist on a longer line?

Mr. HERRINGER. That is not clear, and let me clarify a point that was not particularly clear in the House hearings. The university has at no time asked us to take the system out or indicated to us directly that we should take it out. I am sure if Dr. Harlow appears before you, as I understand he might, he will make that point. He has written to several of these people that have written the articles, and made that point.

The university has not said to take it out. They said they cannot judge at this time whether they want it or not, or what the disposition of the project will be.

NEGOTIATIONS WITH UNIVERSITY

Let me explain to you the current situation and problems that will be of help to you in deciding what to do about the House language that we find very difficult to live with. I met with Dr. Harlow about a week ago here in Washington, and I sent him a letter describing how we feel the project should proceed. Naturally, we feel very strongly that we should spend the $6.3 million that we are asking for to complete the research phase of the project. We think that is essential.

After the research phase of the project is completed, what do we have? We have in Morgantown 3.2 miles of guideway and 45 vehicles and a system that will carry students back and forth from downtown from the Administration location to the engineering school.

Dr. Harlow and others at the university feel that this system does not serve the total needs of the campus and the community of Morgantown, and I would tend to agree with him. As a result, Dr. Harlow feels that the university could not legitimately charge all students a fee for use of it, since all students would not particularly benefit from the system. Only a portion of the students would benefit. If they cannot charge all the students a fee—and the intention was to add this on to tuition—if they cannot charge all the students a fee, they cannot collect enough to support operating the system.

Obviously, the university cannot support hundreds of thousands of dollars of deficit on this system, so the university will be in a bind.

I agree with Dr. Harlow, and I appreciate his problems on this.

ANALYSIS OF OPTIONS

Again, we get to the difference in objectives of research and serving the transportation needs of Morgantown, which also must be served. I proposed to Dr. Harlow that we, the Federal Government, fund through the university, a technical study of what are the alternative ways in which this system or any system could be developed to meet the transportation needs of Morgantown. We would ask that the study would be managed jointly by the university and UMTA and there would be an advisory committee to this study comprised of university people, Federal Government, and people from the city of Morgantown, and the Regional Planning Commission as well.

As part of the study we would examine alternatives—the three-station system with a feeder bus system to take care of the rest of the campus; expand it to four or five or six stations. We would look at all the alternatives so we would have the information as to the best way to serve the transportation needs of Morgantown which would be within the constraint of developing a system that can be afforded by the town and the university.

As I said, I have sent that letter to Dr. Harlow this morning. We would be pleased to provide it for the record.

Senator BYRD. If you would please. May we have a copy of it now?

Mr. HERRINGER. I have a copy of it here.

[The letter follows:]

JUL 2 4 1974

Dr. James G. Harlow
President
West Virginia University
Morgantown, West Virginia 26506

Dear Dr. Harlow:

This follows up our conversation last week in Washington concerning the need to study alternatives for the PRT project after completion of the current Mod Phase IB in April 1975. As we discussed, we both want to ultimately have in Morgantown a transportation system that serves the needs of the University and the community, and that the University and community can afford to operate.

Toward that end, we propose to make a 100% grant to the University for a study to be undertaken by a consulting firm to be selected and managed jointly by UMTA and the University. Attached for your review is a draft scope of work for the study. The alternative transportation systems to be examined and the criteria to be used for evaluation are described in some detail, because it would be desirable to reach a general agreement about these portions of the proposed study in advance of the letting of the consultant contract.

Mr. Charles Graves, UMTA's Director of Planning Assistance, would be my representative on the study management team. He will call your office later this week to set up a meeting in Morgantown to discuss the attachment and hopefully to reach agreement about the scope and selection procedures for a consultant.

I am confident that through this process we will develop a recommended approach to completing the Morgantown transportation system that will equitably serve the interests of all concerned.

Best regards.

Sincerely,

/s/ Frank C. Herringer

Frank C. Herringer

Scope for Morgantown Alternatives Analysis Study

Background

A decision will soon be necessary on the future development of the transportation system in Morgantown. The following issues require that options for proceeding be evaluated and an agreement be reached as soon as possible:

(1) The House Appropriations Committee has directed that an agreement be reached shortly after passage of the appropriations bill. While it is hoped that the Senate will remove this requirement, Congressional interest in an expeditious agreement is certain to remain.

(2) The objective of Phase IB is to begin test operations of the 3-station system in October 1974. Revenue service could commence in April 1975. If production lines on the vehicles and the control equipment are to continue uninterrupted, a decision will need to be reached soon about how best to proceed beyond Phase IB.

(3) UMTA regulations require an evaluation of alternatives before capital grants can be made.

To reach an agreement on the direction of the Morgantown Project at the conclusion of Phase IB, it is recommended that a study be undertaken to do an intensive evaluation of all reasonable alternatives for completing the Morgantown transportation system.

Proposed Scope of Work

The general objective of the study would be to recommend the direction of the Morgantown Project at the conclusion of Phase IB. Maximum use would be made of prior feasibility studies undertaken by West Virginia University (WVU), Parton-Aschman, the Boeing Corporation and the Jet Propulsion Laboratory. These studies (particularly the WVU 1970 feasibility study) contain data and analyses that will be useful for the alternatives evaluation.

The specific tasks to be undertaken are:

(1) Goals and Objectives - There should be a re-evaluation of the goals and objectives of the project. Since the project was

originally conceived, the goals of the University and the local community may have changed. Goals identified in prior feasibility studies would be reviewed and revised goals developed, if appropriate. It is expected that the goals and objectives of the study will relate primarily to local service rather than Federal research and development goals, since the principal Federal goals will be met with the completion of Phase IB. Nevertheless, the Federal government has an interest in the continuing operation of the PRT: i.e., to gather additional data on operating performance and costs and to observe the interaction of passengers with the system.

(2) Criteria - Criteria based on the above goals and objectives are to be compiled. These are to include both quantitative and qualitative evaluation measures and must include as a minimum the following measures for evaluating alternative systems:

- capital costs
- operating costs
- operating revenues
- patronage estimates (systemwide and between selected origins and destinations)
- equity measures (i.e., who benefits from and who pays for the recommended improvements)
- environmental impacts (e.g., the consequences of system improvements on surrounding land uses)

(3) Forecasting Demand - Considerable data already exists in the future land use plans for the City of Morgantown and the University. Forecasts of student and community travel exist from prior feasibility studies. These forecasts would have to be reviewed in light of the following:

a) Does the land use plan reflect the current goals and objectives of the University and the community?

b) Are the basic assumptions of the travel demand forecasts from the prior feasibility studies sound?

c) Is the data underlying the travel demand estimation current and valid?

Based on the above, it may be necessary to collect new data and undertake new analysis to properly forecast future travel damands.

(4) Developing Alternatives - Based on the generation of up-to-date travel demand estimates, a series of alternatives will be developed. These would include at a minimum the following:

- 3-station PRT system with high or low level of service and feeder bus
- 4-station PRT system with high or low level of service and feeder bus
- 5-station PRT system with high or low level of service and feeder bus
- 6-station PRT system with high or low level of service and feeder bus
- converting the existing 3-station system to a conventional bus operation with extension to the Medical Center on existing streets or fixed guideway
- dismantling the existing 3-station system and serving the needs of the area by a bus system on existing streets or on exclusive right-of-way
- low capital cost alternatives such as carpools, bicycles, changes in class schedules, auto disincentives, etc.

(5) Evaluation of Alternatives - The alternative systems would be evaluated against the previously developed goals, objectives and criteria. A matrix would be developed for use by decision-makers that would show how each alternative system addressed each evaluation criteria. Weights would not be placed by the consultant on each evaluation criteria. Indeed, no attempt would be made to try to develop a single effectiveness measure (e.g., cost/benefit measure for each system). Therefore, the unweighted matrix should

be viewed as the end product of the study. An example of such a matrix follows:

Alternative System \ Criteria	Cap. Cost ($)	Oper. Cost ($)	Patro-nage	Environ. Impact	Other
1					
2					
3					
4					
5					

Time Duration

It is estimated that the proposed study could be completed in 3-4 months.

Cost of Study

It is estimated that the proposed study would cost in the range of $100,000 - $150,000 (it might cost slightly more if considerable data collection was required).

Contractor

It is recommended that a well qualified transportation planning consultant be hired to do the study. Due to the need to move forward quickly on the study, there would not be the necessary time to go through a full-blown competitive selection process. Instead, a sole source or limited competition should be used to select the consultant.

Management

It is recommended that the study be jointly managed by UMTA and the University. The UMTA lead office for management would be the Office of Transit Planning. Representatives of the Office of Research and Development would be consulted throughout the study.

An advisory committee of local officials, University officials and UMTA representatives will be set up to provide the policy direction for the study. Local participation would include representatives of the City, the County and

the Region VI Planning and Development Council. The review committee would be expected to meet at appropriate points throughout the study to review the consultants' progress. In particular, the committee will meet at the following project milestones:

- Completion of the detailed consultant scope of work
- Development of the evaluation criteria
- Development of the alternative systems for evaluation
- Development of the evaluation matrix

Additonal meetings will be scheduled as necessary.

TECHNICAL STUDY

Senator CASE. Do you have an estimate of the cost?

Mr. HERRINGER. Probably about $100,000. But we would pay for that and——

Senator CASE. You already have the money to pay for that?

Mr. HERRINGER. Yes, sir, that would come out of our technical studies.

Senator CASE. Would you take on another project out of that fund? We have a dam in New Jersey called Fox Island. We have a great need for a study of the project associated with it. We can't get any money for that study.

5-MONTH STUDY REQUIREMENT

Mr. HERRINGER. The problem, Mr. Chairman, with the House language is that a study of this kind, which I believe is the logical way to approach the problem, takes from 4 to 5 months. The House language stated that if we did not agree on the disposition of the project with the university within 30 days of enactment of the bill, the money appropriated must be used to tear down the system rather than to complete it.

I had many problems with that language, the principal one being that if we stop now when we are so close to completing, we will have not realized any of the major research objectives. We will not see 45 vehicles running on that system. Moreover, by putting this kind of pressure on reaching an agreement within 30 days, we will make it necessary to reach an agreement without the facts, without the information, that we need to reach an agreement, and a hastily drawn agreement would be difficult both for us and for the university.

I cannot see how we can possibly reach an agreement—if that 30-day requirement remained in force, my prognosis would be we would have to use the money to tear down the system.

Senator BYRD. Would you still be bound by your commitments to Boeing to pay the ceiling price?

Mr. HERRINGER. I am not an expert on contracting, but I think this agreement was reached contingent on appropriations. Right now the Boeing Co. is incurring expenses that we cannot pay them, nor will we until we get a bill. They are doing this at risk and at great pain to their management.

POTENTIAL COST OF SIMILAR SYSTEM

Senator BYRD. In the event other cities were to take on a project of this kind after you completed this research project, could they anticipate this kind of cost?

Mr. HERRINGER. No. We and the university have talked to Boeing and the various subcontractors about how much would it cost to extend the system. My feeling is that we could extend the system for considerably less unit cost than the cost of the original system which you would expect, because the research and development is behind us now, and it is strictly a question of duplicating what we already have.

Senator BYRD. In other words, another city could build this same system for considerably less money, do you think?

Mr. HERRINGER. Yes, I do.

TWO-PHASED APPROACH

Senator BYRD. It is the university's position that UMTA proposed building the system in two stages in September of 1971. Phase 1 would be funded under your "Research, development, and demonstration" account and would have three stations and 45 cars. Phase 2 would be funded under your capital grant program and would complete the orginal plan of 6 stations and 100 cars. The board of regents signed the new contract because there was no question then as to UMTA's commitment to the total six-station project.

Were you the Administrator at that time, Mr. Herringer?

Mr. HERRINGER. No, I was not.

IMPLIED CAPITAL GRANT

Senator BYRD. Do you know whether or not UMTA implied that a capital grant for the balance of the system would be forthcoming if the university would sign the contract?

Mr. HERRINGER. I do not know for a fact, Mr. Chairman, what precise implications were made. I would say it would be fair to say that at the time that the contract for the three-stations system was signed, it was generally assumed that the system would go to 6 stations and 100 vehicles.

I think, though, Senator, that we have to examine, regardless of whether or not that was true at the time, we have to examine whether that is still a prudent course of action now.

The university's interests, I believe, are served by developing the best transportation system to serve the university at a price they can afford to pay. And the same is true with the city of Morgantown. I don't believe their interests or the Federal interest would be served by just going ahead and expanding the thing to six stations because of some commitment that may or may not have been made 3 or 4 years ago.

Senator BYRD. You cannot disregard commitments once made.

Mr. HERRINGER. No, sir. I don't believe you can, either. That certainly has to be taken into account.

Senator BYRD. Is it your impression that such commitments were made at that time?

Mr. HERRINGER. I don't know whether commitments were made. I can say no one had the legal authority to make such commitments. We run into this problem with certain of our capital projects as well, this question of commitments. If someone says in a speech that "We are going to be with you through the life of this project," is that a commitment or is that not a commitment? It may be interpreted as a commitment by the people listening to it.

Senator BYRD. Was such a commitment made in a speech by someone?

Mr. HERRINGER. I don't know. I am using an example from our capital program.

Senator BYRD. Let's stick to this specific item.

Mr. HERRINGER. I don't know.

Senator BYRD. Does anybody know? Somebody must have been around at that time.

TWO-PHASED PROJECT

Senator CASE. The thing was divided into two parts. Could you suggest some reason for that division? Was it to stop and have a look?

Mr. HERRINGER. That was part of it. That was why the contract was drawn the way it was. The contract says 15 vehicles and 3.2 miles, and then at the end of that we will see if the system is satisfactory. If it is the university can keep it and we can look at options for expanding it, or if it is not, the university can ask the Government to take it out.

Senator BYRD. Do you have a copy of the contract?

Mr. HERRINGER. I don't have one here.

COST OF DISMANTLING

Senator CASE. Would the $6 million be enough to take care of it?

Mr. HERRINGER. Probably not. We don't have any formal estimates to take it out. There would be liquidation damages and it would be a question of interpreting what it would be to restore the site to the original condition. What does that mean? If you see pictures of the system, the construction is very heavy. It reminds one of a highway and you can imagine what it would cost to take out the Shirley Highway mixing bowl configuration. We would be faced with similar problems. It is constructed with heavy girders and concrete.

Some salvage could be expected from the computers and from the copper, from the steel, but it would be a major project. Someone suggested—I receive much mail on the subject since the press paid some attention to it—and one suggestion was we should not pay anybody to take it out. Rather, we should give it to the Corps of Engineers as a practice project.

CONTRACT PROVISIONS

Senator BYRD. Let me read to you an extract from page 2 of the contract. The entire contract will be inserted in the record with no objection.

[The contract, in its entirety, appears on page 1568.]

The personal rapid transit system of Morgantown will begin with 15 vehicles.

That indicates the likelihood of going further:

B. Three stations designated as Walnut Street station, B, or Church station, and Engineering station, and located in the general area specified on the route plan for personal rapid transit system at Morgantown.

C. Approximately 2 miles of double-track guideway connecting the three stations.

D. Power supply system control and communication system and related equipment and facilities required for automatic operation of the total transit system designed to accommodate further expansion up to 100 vehicles and six stations.

Now I will leave out E for the moment.

UMTA will test and evaluate the system and generate the necessary data to insure the reproduced ability and utility of the system in nationwide locations that may have similar transportation needs. Successful completion of this project will qualify this system concept for capital grant in appropriate locations.

Would this not be an appropriate location for capital grant?

Mr. HERRINGER. That is what we are trying to find out with this evaluation of alternatives. We go through this same process on all of our capital grant applications to see what the best way of solving the transportation need is without preselecting the technology to satisfy that need.

MORGANTOWN PROJECT REDUCED

Senator BYRD. When was it decided by UMTA to reduce the size of the demonstration project's 6 stations and 100 cars to 3 stations and 45 cars?

Mr. HERRINGER. April of 1971.

Senator BYRD. So there was a point prior to April 1971 when a system size of six stations was contemplated?

Mr. HERRINGER. Yes, the original request for proposal was for a 100-car, 6-station system and it was reduced because of cost.

CAPITAL GRANT APPLICATION

Senator BYRD. Sometime around the middle of 1973, UMTA asked the university to submit capital grant applications for phase 2; is that correct?

Mr. HERRINGER. That is correct.

Senator BYRD. The university in accordance with that request submitted an application indicating that $49 million would be needed to complete the system?

Mr. HERRINGER. That is correct.

Senator BYRD. UMTA responded to this application by stating that it could not fund phase 2 because its plans allowed for spending only $30 million; is that correct?

Mr. HERRINGER. That is not correct.

I would say that our estimates were that it would cost approximately $25 million or $30 million to complete the system and we were indeed surprised by the $50 million figure that came to us, but we did not say we would not fund the $50 million because we had allowed $30 million.

Senator BYRD. Now, what would be the cost of destruction of the system?

Mr. HERRINGER. We do not have the detailed engineering estimate that would be necessary but I would estimate—we had rough estimates made and probably in the neighborhood of $7 or $8 million less salvage cost.

SIX-STATION SYSTEM TO COST ADDED $50 MILLION

Senator BYRD. What would be the cost of building the six stations now, do you know?

Mr. HERRINGER. As you said, the capital grant application was $49 million or $50 million. That was not a fixed price. It could have gone higher than that, but in this analysis of alternatives one of the things that has to be looked at is there are many ways in which you could extend the system. For example, the application anticipated that most of the extension would be elevated. If you look at the alternative of putting it on grade you could save a considerable amount of that $49 or $50 million.

One of the things that needs to be looked at is how can you alter the proposals to come in with a more reasonable dollar amount.

Senator BYRD. Do I understand you to say that it would cost about $50 million?

Mr. HERRINGER. I would say $50 to $60 million would be the maximum, and then it could cost less than that.

Senator BYRD. What is your personal viewpoint? Should it be completed, the six stations?

Mr. HERRINGER. I don't know. I am open on that. We need to get the information from this careful look at all alternatives before we can make that decision. I do not know at this point whether that is the only way to solve the university problems, or the best way. I don't frankly think that anyone knows now.

ADMINISTRATOR WOULD LIKE MORGANTOWN SYSTEM TO BE USED

Senator BYRD. Now if the first phase cost $63 million, and the second phase would cost $50 million, what would you recommend—I don't want to state it that way—but would you prefer to spend $7 million over the $63 million, making a total of $70 million destroying the system rather than going ahead with another $50 million and completing the second phase?

Mr. HERRINGER. If you asked for my personal preference, I would prefer not to destroy the system. I would prefer greatly that the system remain at Morgantown operating and carrying students. I think that would be the best of all worlds.

Let me be clear on my personal feeling about the system itself. As to the $7 million versus $50 million question, if it were not possible to make the three-station system part of a total transportation system without extending it to six stations, and if the needs of the university and the town and the community could be served by a system, let's say, that would cost us $2 million or $3 million to build, then I suppose I would have to say yes, I would prefer to spend the $7 million taking it out rather than spending the $50 million that I could not justify to the Congress. But again I certainly hope we do not find ourselves in that situation.

Senator BYRD. You say if you could not justify it the additional $50 million you would prefer to spend $7 million to wipe out the $63 million that has already been spent?

Mr. HERRINGER. Yes, if we could not find some way to keep the $63 million system operating.

Senator BYRD. That is not what you are up against, is it?

Mr. HERRINGER. I hope not. That must hurt.

Senator BYRD. Not as bad as being burned with $63 million though. What kind of bad taste is this going to leave in the mouths of not only the people of Morgantown but the taxpayers of the country and——

Mr. HERRINGER. Taking it out?

Senator BYRD. And those in Congress of taking $7 million to destroy a research system that we spent $63 million to establish.

Mr. HERRINGER. I would guess it would leave a very bad taste in many mouths, Senator, and as I said I hope that we are not faced

with that situation. That is one of the reasons I don't think we should be put in a position where we have to take it out.

SENATOR BYRD COMMENTS ON MORGANTOWN

Senator BYRD. For the record, let me say that I normally want to get everything I can for West Virginia, everything that can be justified, and I followed that policy throughout my service on the Appropriations Committee, which will soon be 16 years. But let me say further I have never beaten anybody over the head about this project. Never even from the bginning.

I must say that I have been pretty neutral on this all the way through. I have supported the budget request for it. I never did oppose it. I wanted to be reelected. But I have never—this has not been a project which I have—and the record will show this—that I have fought for, but we are in a situation here where if UMTA has committed itself to finish those six stations by capital grant it would seem to me that if we are going to act in good faith that we should find some way to resolve this thing that will meet with the approval of the people at Morgantown University. Else when it comes to a research project in some future city this record will always be around to haunt us.

I am shocked at the increase in cost. We had this big EAR in West Virginia, we ran into much the same thing. The cost escalated. The technology was out of date practically by the time they got the thing off the drawing board. Satellite technology replaced the technology that obtained at the time the big EAR was conceived. I took the position at that time that that being the case, maybe the Department should not be beaten over the head by members of the congressional delegation from West Virginia and forced to proceed with that project. That did not make sense. So the big EAR was dropped.

We are not in precisely that situation here. I don't think we have been overtaken by technological events. The problem here is the miscalculation of the estimates to begin with; the fact that Congress was sold on a package here and we went along and provided the money but somebody goofed somewhere on the engineering estimate.

I was over there at a dedication ceremony with Secretary Volpe and Patricia Nixon some time ago, and there was a bunch of demonstrators around. I think they were being rather unkind to Patricia, and I sort of took them all on in a nice way. I did not think it was right for them to treat anybody like that, much less the daughter of a President.

POLITICAL PRESSURES IMPACT

Were any mistakes made in the preparation of that facility by way of expediting it so that Mr. Volpe and Patricia Nixon and the rest of us could go over and speak on a certain date? Did that in any way figure into the miscalculation of the estimate?

Mr. HERRINGER. I was not Administrator of UMTA at that time. I heard that suggestion made, that that was a possible reason for the increase in cost. I have read various press releases and speeches made about the project, and in October of 1971——

Senator BYRD. Is that when the dedication occurred?

Mr. HERRINGER. No, that was October of 1972. October of 1971 was the groundbreaking for the facility, and at that time Secretary Volpe announced that—we would ride the system 1 year from that date, and I know from——

Senator BYRD. That was not just the groundbreaking. We got in one of those cars and rode it.

Mr. HERRINGER. That is right. October of 1971 was the groundbreaking. The year before. Secretary Volpe at that point announced that we would ride a year from that date, October 1972, which is when you did ride the vehicle.

Now I know from talking with my colleagues at the Department that Secretary Volpe set deadlines frequently and enforced them, and his administrators were expected to meet those deadlines. This is a style of management, and I am sure that if nobody set any deadlines that very few things would get accomplished. I cannot second guess Secretary Volpe's wisdom in setting that year deadline. I know a great deal of work was done to meet that deadline, and as I said, that happens in many projects.

Senator BYRD. And it may have happened in this. It did happen in this.

Mr. HERRINGER. There was undoubtedly work done to meet that deadline set by Secretary Volpe.

Senator BYRD. And that may have contributed to the increased cost.

Mr. HERRINGER. It is difficult to say because you are perhaps trading some overtime for perhaps even longer lapses in completing the project, and inflation would have occurred, and it is hard to pinpoint that.

CAPITAL GRANT DECISION

Senator BYRD. A moment ago I stated, too, on the basis of my information the university submitted an application which indicated that $49 million would be needed to complete the system. You indicated that was not factual.

Mr. HERRINGER. I said, yes, they have submitted an application for $49 million. Yes, we did not turn it down.

Senator BYRD. Let me go back. The university in accordance with your wishes submitted an application indicating that $49 million would be needed to complete the system. UMTA responded to the application by stating that it could not fund phase 2 because its plans allowed for spending only $30 million. Is that correct? You said "No"?

Mr. HERRINGER. No.

Senator BYRD. What was the response?

Mr. HERRINGER. The response was we were surprised at the $50 million number and that in itself brought on—the response is still occurring—our response is essentially we must look at alternatives. We should not just extend the system without considering other ways to solve the transportation problems in Morgantown.

Senator BYRD. Are you exhausting every means of reaching some agreements on the cost of the phase 2?

Mr. HERRINGER. I believe we are.

Senator BYRD. Do you feel that the university at any point in time ever intended to have only a three-station system?

Mr. HERRINGER. At any point?

Senator BYRD. Yes, sir.

Mr. HERRINGER. No, I would say the university always expected to have a six-station system ultimately.

Senator BYRD. Has anyone involved in the project at the university ever indicated they would be happy to see the system as it now exists; that is, with only 3 stations and 45 cars?

Mr. HERRINGER. No, I can say with some assurance no one has indicated that.

Senator BYRD. The university has cited numerous reasons why the three-station system will not serve their needs. Among those reasons is: (1) that it will not serve the citizens of Morgantown; and (2) that it will be of only limited value to the university students. What do you have to say about that?

Mr. HERRINGER. I agree the three-station system by itself would not meet either of those objectives. But I question whether they could not be met by other means than extending the system to six stations.

Senator BYRD. The other means are those you have suggested would be included in the study.

Mr. HERRINGER. That is correct.

Senator BYRD. How much have you asked for in this budget as a limitation on capital grants?

Mr. HERRINGER. $1,225 million.

ALTERNATIVE ANALYSIS NEEDED

Senator BYRD. Now, do you feel that the Morgantown project is worthy of consideration for capital grants?

Mr. HERRINGER. I believe that once we complete this analysis of alternatives, that something for Morgantown will be forthcoming that will be worthy of consideration for capital grants.

Senator BYRD. And are you saying that it will not be or that it may be that one of those—that the completion of a six-station project may indeed be deemed advisable, and would be considered for capital grants?

Mr. HERRINGER. That is a possibility, yes. That is one of the many possibilities.

Senator BYRD. In other words, West Virginia University and the board of regents are not being written off at this point in their request for a completion of the six stations with capital grants involved?

Mr. HERRINGER. No, sir.

CAPITAL GRANTS TO BART TOTAL $300 MILLION

Senator BYRD. How much have you paid in grants to the San Francisco BART system?

Mr. HERRINGER. Approximately $300 million.

Senator BYRD. What makes that system so much more worthy to receive funding than Morgantown?

Mr. HERRINGER. I would not presume to say that it is more worthy than Morgantown. I would say that the numbers of passengers served would probably be a key difference though. Morgantown's system

serves a total population of about 20,000. The San Francisco system serves well over 1 million.

Senator BYRD. Is that system a highly successful project?

Mr. HERRINGER. BART system?

Senator BYRD. Yes.

Mr. HERRINGER. I believe it will be. The system is not yet operating fully. It is not yet operating across the bay. It is operating on either side of the bay. It should start operating across the bay in September.

Senator BYRD. Are you satisfied with its efficiency?

Mr. HERRINGER. Generally, yes. They have had problems, too, of course, in bringing it on line with their automatic train control and some aspects of the system, reliability of their cars, but again this is a radically new system. It is different from any other system, and problems are to be expected.

INCREASED BART OPERATING COSTS

Senator BYRD. How do you view the labor costs of that system?

Mr. HERRINGER. The labor costs are higher than we have expected for the system largely because of—partially because of a provision in our legislation, section 13(c), labor protective agreement. It was applied to a small segment of the original employees of BART, and then the remainder of the employees demanded the advantages of the small protected group, and their wages had to be raised as well.

Senator BYRD. How much higher?

Mr. HERRINGER. I don't know offhand, but we can provide that for the record.

[The information follows:]

SECTION 13(c) EFFECT ON BART LABOR COSTS

BART has extensively studied this question and claims that 13(c) has significantly increased its labor costs. Basically, BART has had to give job priority to existing transit workers in the Bay area and to set its wage scales at the level of other transit operating agencies in the Bay area. Compliance with Section 13(c) was, of course, necessary to obtain Federal financial assistance.

The increase in labor costs is one of the reasons that BART is now operating at a deficit. Original 1962 operating projections estimated wages to be far less than they are now. Under a decision rendered in final and binding arbitration, it was held that the provisions of Section 13(c) require BART to pay any "13(c) employee" 107% of the basic hourly wage he was paid by his previous employer—regardless of the fact that this "13(c) rate" may be well in excess of the BART rate for the job. At this point in time, BART was paying $4.62 per hour to a non-13(c) employee in one job classification, and $6.52 per hour to a 13(c) employee—a difference of $1.91 per hour for the same job.

Senator BYRD. Does anybody know?

Mr. PREMO. The delay in initiating operations has intensified the labor problem they face right now; but when they start operating across the bay, they expect to pick up an additional 120,000-plus riders per day, and that should help the picture.

BART IMPACT ON CONGESTION

Senator BYRD. Does the BART system substantially reduce traffic congestion?

Mr. HERRINGER. Substantially, no. No, sir, I don't think you can say the BART system by itself would substantially reduce traffic

congestion. It will reduce it from what it otherwise might have been, but there will still be traffic congestion in the San Francisco Bay area.

Senator BYRD. How much will be needed in operating subsidies for BART each year?

Mr. HERRINGER. It is expected about $15 million will be required in the next year, and this could increase to as much as around $30 million or $35 million per year in the late 1970's. It is obviously subject to the amount of ridership they secure, and also to the fares charged.

Senator BYRD. Have you ever considered rejecting BART's request for funds on the basis that further Federal funding is unjustified?

Mr. HERRINGER. Every time we get an application from anybody, we consider the possibility of rejecting it, Mr. Chairman. To date, most of BART's applications have been funded.

Senator BYRD. That did not quite answer my question. Have you ever considered rejecting BART's request for funds on the basis that further Federal funding is unjustified?

Mr. HERRINGER. Yes; we have considered rejecting it.

Senator BYRD. Have you told the people back there about that?

Mr. HERRINGER. We have considered it. We have never arrived at that conclusion. As I said, that is an alternative. Every time we receive an application, we evaluate whether or not it is justified, and in cases thus far with BART we have considered it justified.

ACCORDED DIFFERENT TREATMENT

Senator BYRD. In other words, you have not gone to the extent with BART that you have with the Morgantown project?

Mr. HERRINGER. I don't think the two are strictly analogous, because in Morgantown I think we could compare that to an extension of, let's say, the Chicago system or the New York system. If BART were to build an addition on to their system, we would certainly do exactly with them what we are doing with Morgantown. The basic BART system is complete.

Senator BYRD. You have stated for the record that capital grant does have a fair chance—I am saying this in my own words, and you may not feel like you want to go along with this—but I get the impression that there is a fair chance that capital grants can be made for finishing this project.

Mr. HERRINGER. I would say that there is a good chance that a capital grant can be made for completing the Morgantown transportation system. Now, that may involve anything from buses to completion of the PRT system, but I would say we would regard a capital grant application based on a sound analysis of alternatives for Morgantown in the same favorable light that we would do for many cities.

SELECTION OF MORGANTOWN SITE

Senator BYRD. What were the reasons for Morgantown being chosen for the PRT demonstration in the first place?

Mr. HERRINGER. There were several reasons. No. 1, it was a willing applicant. They had considered the project and were enthusiastic about

putting it in the university. Morgantown has the range of climate, as I mentioned before, that permits testing in all sorts of weather. It has the terrain. Some of the same reasons that make it expensive make it very attractive as a test site because it has grade—the system goes up and down very steep grades. It is hilly. It has a captive ridership. The students are there, and the town has a very real transportation problem of getting people back and forth between campuses.

Senator BYRD. Originally, what was the time frame in which it was estimated that this project would be completed?

Mr. BOSWELL. 1975.

Mr. HERRINGER. People who were here at the time say it was 1975.

Senator BYRD. Are you still on schedule?

Mr. HERRINGER. We will have the three-station system completed in April of 1975.

PURPOSE OF MORGANTOWN PROJECT

Senator BYRD. Was it ever the intent of UMTA to stop the traffic congestion problem that exists in Morgantown or only to use that town as a research operation?

Mr. HERRINGER. I think it was a combination of both. One of the things that made the site attractive as a research site was that it had a congestion problem, and hopefully the project could serve a dual purpose. Let me say, Mr. Chairman, that my evaluation of the project, as we talked earlier, about the cost increases—one of the problems with the project was the mix of research and development with a downtown location for the project—I think that we would be better off if we had done the research offsite and learned how to build it, and then go and build it, because much of the learning took place 10 or 15 feet above the streets of Morgantown, and that is a very expensive way to learn. I hope in future projects we won't mix research and demonstration.

Senator CASE. I wonder whether it wasn't a wise thing to put it in the actual location, where the problems of an actual location would have to be faced.

Mr. HERRINGER. Certainly I agree, Senator, that the demonstration of the system itself with its actual carrying of passengers is important. That is something that has to be tested in an actual environment and that is a wise thing.

The point is if we first would have learned offsite how best to construct the guideway rather than doing that over the streets of Morgantown it would have been much cheaper.

ENGINEERING FEASIBILITY STUDY

Senator CASE. If you did not know how to construct the guideway how did you know it was a good project?

Mr. HERRINGER. It was based on engineering estimates and these turned out in some cases to be not precise forecasts.

Senator CASE. This is an area in which I am not an expert. I join the Chairman in trying to find out the answer.

At this point I want to pay a tribute to him for his cooperation for example in the request to the chairman of our Appropriations Committee to have an assessment made of urban mass transit by the Office of Technology Assessment.

I think it would be terribly useful. It always amazes me so little is known about how things are going to work. This happens all the time.

Take those metroline cars. We are having more trouble with those things. Now it seems to be conceded it would have been better to delay the actual commencement of operation of the things until the bugs were taken out of the cars.

There does seem too to be a tendency on the part of people to mix up the idea of trying to advance the art and also trying to get transportation to work. On this score, I think we should have a mix of both but not at the same time.

This gets to another thing on this matter of rail transit. I hope we are not going to give up the idea of using conventional means of transit and simply concentrate on esoteric new projects.

But on the specific thing here in Morgantown I cannot understand how you can seriously go into a multimillion-dollar project without knowing whether it would work.

Mr. HERRINGER. There was never any question as to whether it would work. It was a question of the errors that were made; what would it cost to correct the errors. It will work. The assessment that it would work was correct.

In my judgment it will work. It will serve a purpose. Let me say too for the record that people tend to downgrade the sophistication of Morgantown but without question when this system begins operating in April of this year it will be the most advanced transportation system in the world, and is quite an achievement from what I have seen in other countries.

It will remain in that category for several years. Nobody will have anything that will be on line for a couple of years that will be more sophisticated than that system, so it is a major achievement.

Senator CASE. I am all for it. I am all for finishing it and for making it better. I think if you spend that much money you should put in escalators to make it useful for handicapped people and I think it should be done from the beginning, Mr. Chairman.

ACCOMMODATING THE HANDICAPPED

What about the cars themselves? Can people get on and off them without climbing steps?

Mr. HERRINGER. Yes, sir, they are flush with the platforms.

Senator CASE. This other thing I think it terribly important.

Mr. Chairman, I would support you in finishing this thing and finishing it to be the best thing that can be done.

Since we are going to do it we might as well do it right.

Senator BYRD. I thank you, Senator Case, for that observation. I apologize for taking so much time on this one project today but it has been some source of embarrassment to West Virginians reading and having read in various national publications that there is a project that may be torn down at a cost of $7 million and the taxpayers will have already been saddled with a cost of something like $63 million for a system that really won't work.

Technologically maybe it will, but if it practically will not be used once the three stations have been completed, I am not so sure that we have really proved that it will work.

And in addition, UMTA has been given a black eye, West Virginia University has been given a black eye, and I put in my disclaimer already as far as any black eyes that may be directed toward me as chairman.

But really it will not have worked and I think other cities would be discouraged from implementing the results of this technology there.

INVESTMENT CONSIDERATION

Over on the House side in your testimony before the committee you made a statement that Mr. Conte quoted in his floor statement when this bill was presented to the full House. Part of that quote is as follows:

I would rather spend $7 million on taking it out than to spend $50 million on building a system that I cannot justify to you.

You were not around when this whole thing was conceived but would you like to elaborate on that statement, that you would rather spend $7 million on taking it out than to spend $50 million building a system—let me underline the rest for emphasis—that I cannot justify to you.

Mr. HERRINGER. You being the Congress. Yes, sir, I would. What I meant there was that we need to evaluate the investment decision from the point of view of the taxpayers and the people of Morgantown.

If as a result of a careful look at all alternatives we arrived at the conclusion, based on agreed upon criteria with the university, that expansion of the system was not justified, and that the transportation needs could be satisfied adequately by some other means, and if someone insisted that we spend the $50 million anyhow, I would rather spend the $7 million than essentially waste the $43 million.

I think it is a better expenditure of public money.

Let me say again I certainly hope that we never reach that situation. I frankly feel that we are far from it now, and I don't believe we ever will reach it.

Senator BYRD. You were not saying in that statement—you were not implying that the completion of that system cannot now be justified.

Mr. HERRINGER. No, I was not implying that at all. I believe it was, "if it cannot be justified." I believe it was "if I cannot justify it."

Senator BYRD. You said you would "rather spend $7 million taking it out than to spend $50 million on building a system I cannot justify."

That taken out of context would indicate you cannot justify it.

Mr. HERRINGER. I see the point.

Senator BYRD. Would you clarify that for the record?

Mr. HERRINGER. That is not what I meant to imply at all. I meant to say—there should have been a qualifying phrase—"if it cannot be justified then I would rather spend"—as I pointed out, I hope adequately, in the record here today—that we have not as a Department reached any prejudgment about whether dismantling or expanding it, is or is not justified. That is what we want to study.

SYSTEM ENVELOPED IN MANY FACTORS

Senator CASE. Mr. Chairman, on that point do you think a $100,000 survey would work as an alternative to completing the system? I would think it would be desirable to have a completed system as a demonstration to the rest of the world and other communities. It is an original idea and, this is an important factor, and one that is worth consideration.

Mr. HERRINGER. I agree with that Senator. I do not believe we should choose an alternative based solely, for example, on costs. There are many factors here. There is environment. There is operation expenses and the research value of the system.

Senator CASE. It is the same problem we have here with not running rapid transit to airports.

You spend hundreds of billions of dollars on an airport and then you do not give the public the one thing that it really needs, that is the ability to get to the airport by some kind of rapid transit.

So let's do it and make it a real demonstration if we are going to do it. I think that is the real point of this thing.

Mr. HERRINGER. I certainly agree that the university should consider as part of a capital grants application assuming we get one, of putting in the elevators.

HANDICAPPED PROVIDED FOR

Senator CASE. Do you have escalators that run in freezing weather, snow, and ice?

Mr. HERRINGER. I am sure the escalators and elevators would be enclosed anyhow.

Senator CASE. If you are going to heat the roadway you could heat the escalator. Put wheelchairs in it and really take care of people.

Mr. HERRINGER. There are elevator shafts.

Senator CASE. Whatever it is right to do. But provide real assistance to people who are not in the first flush of youth.

Thank you very much.

Senator BYRD. If you now tear down the existing system I am beginning to wonder what is on down the road in this budget for New Jersey.

Senator CASE. I want your help in Tocks Island.

Senator BYRD. If you now tear down the existing system, what will have been the benefits of this demonstration to the citizens of Morgantown?

Mr. HERRINGER. Virtually none.

Senator BYRD. Have you learned anything that can be used in other cities that may wish to build PRT systems?

Mr. HERRINGER. Yes, we have learned a great deal about the control problems, about the problems of constructing and heating guideways. A great deal has been learned.

Senator BYRD. But if you tear this down, what will be the impact on other cities?

Mr. HERRINGER. Other cities would obviously prefer to see a system in operation rather than buy a system that is designed on paper.

Senator CASE. You would certainly encourage them in that tendency too?

Mr. HERRINGER. Yes.

Senator BYRD. What are some of the accomplishments of the demonstration? What have you learned? You may want to put that in the record.

Mr. HERRINGER. We can elaborate on that for the record.

[The information follows:]

Technical Accomplishments of Morgantown Program

Overall system developed the following:

1. Electronically controlled synchronous system allowing safe operation, including merges - 15-second headways between vehicles; modification of emergency braking design and additional guideway wiring would allow 7.5-second operation if justified by system demand.

2. Extremely stringent safety requirements have been met to assure safe unmanned operation of an automated transportation system. (The rigid safety analysis and allocation system which was used is considered by experts to be a model for all future endeavors in the transportation field.)

3. The rigid reliability requirements that have been designed into the Morgantown PRT system assure the high system availability which is needed for an effective automated mass transportation system. (Again, the analysis and allocation techniques employed in the Morgantown PRT, are considered to be a model for future endeavors.)

Vehicle system design developed the following:

1. Automatically controlled acceleration and deceleration that has a repeatable accuracy from vehicle to vehicle.

2. On-board switching and steering that is closed loop and eliminates the need for mechanical articulation of the guideway or rails. The control is fully automatic and requires no intervention of the central control operator. It is this system that permits a direct "origin-to-destination" service and economical on-demand utilization of vehicles.

3. Fail safe, independent and redundant brake system that is automatically controlled to meet all performance and safety requirement.

4. Fail operational innovations to preclude unnecessary system shut down where safety is not jeopardized.

5. A suspension system that gives a ride comfort equivalent to an automobile, while stabilizing the vehicle on the guideway under various loading conditions.

Control and Communication System (C&CS) Design Developed the following:

The C&CS was correctly viewed at the beginning of the program as one of the most significant technical challenges of the program. Not only had a control system of this type never been built but the entire concept of the system and its performance depended critically upon the C&CS. Not only did the program produce the first workable C&C system of its kind but it established considerable knowledge on how such systems should be specified, the development process to be followed, the most efficient blending of hardware and software, the types and uses of electronic hardware in such applications and methods of testing to be used - knowledge which did not previously exist and is now available for application.

There are three types of direct benefit from the work:

(1) The system itself and its application to Morgantown's transportation needs, (2) the proven design which is available now for application to other systems for other cities, and (3) the knowledge gained on how to develop more advanced C&C systems for higher performance systems. At pre-

sent, the Morgantown C&CS knowledge is being applied to other systems, most notably the PRT system planned for Las Vegas, Nevada. This knowledge also is available for other applications in other cities.

The specific technical accomplishments include:

1. The process of defining the specifications for a C&C system, beginning with only the most general and obvious requirements of a modern transportation system, and resulting in a proven, functioning, safe and reliable system has been accomplished and is available to be applied anywhere that similar needs exist.

2. Design of an inductive communication system which permits two-way communication of several different signals between a moving vehicle located anywhere on the guideway and the station electronics control equipment. Communication is between wires buried in the guideway and an antenna located on each vehicle. As a result of extensive analysis and testing of the communication equipment at Morgantown, the capabilities and weaknesses in systems of this type have been identified and, through modifications of the design, an effective and reliable system has been developed.

3. A fail safe software collision avoidance system with independent hardware back-up has been developed which is applicable to many different PRT systems because it is completely independent from the basic control system (this is a first-of-a-kind). The system uses the benefits of current technology while retaining the high standards of reliability and safety demonstrated in prior, less capable control systems.

   An in-depth analysis of collision avoidance systems and their reliability and safety features led to the development of techniques and components which resulted in a system which has a calculated probability of an unsafe failure occurring no more than once every 10,000 years. The system utilizes fail safe "checked redundant" techniques to accomplish the high degree of reliability.

4. Building block components have been developed such that systems of varying complexities can be designed and built at lower cost. All of the components needed for a C&CS are now available (with most of them on circuit cards) making available to the transit community the benefits of modern electronic technology applied in a conservative and tested method.

5. Hardware and software have been developed and integrated for a practical system which meets the real needs of a community. The complexities of day-to-day operation, system start-up and shutdown, and removal of a faulty vehicle and automatic start-up has been accomplished utilizing off-the-shelf commercial computers. The difficulty of this operation on a system as complex as Morgantown could not be fully understood until it was implemented. Morgantown has taken this problem and come up with a practical approach to solving it.

6. In addition to the collision avoidance, several areas of the vehicle control electronics are also critical to system safety. As a result of thorough analysis and testing of the vehicle electronics, Morgantown has identified these potential safety critical areas and a new unit is being developed which fulfills the requirements.

DESCRIPTION OF TECHNOLOGY

Senator CASE. Could you give me 2 seconds worth of explanation? Does this system run automatically?

Mr. HERRINGER. Yes, sir.

Senator CASE. Nobody is going to be driving the cars.

Mr. HERRINGER. No, sir.

Senator CASE. What turns the wheels?

Mr. HERRINGER. A conventional d.c. electric motor.

Senator CASE. How are the cars steered?

Mr. HERRINGER. There is a pressure arm that touches the side and actually as I understand it the wheels are always turning in and the pressure arms tend to turn them out.

Senator CASE. How do you get the thing on the side of you so-to-speak.

Mr. PASTOR. It follows a wall, a curving wall. There is pressure against a curving wall. It initially gets a command whether it should move toward the right or left. That command resets the pressurization on a horizontal arm. It is like a blind man with a white stick. Say he walks and keeps hitting the right wall. When he comes to an intersection and he knows he wants to go to the left then, he tries the left curb with his white stick. The vehicle does the same with the horizontal steering arm.

So we switch over the pressure whichever way we want and then the car automatically follows the selected guide wall.

Senator CASE. How long is it?

Mr. PASTOR. About 15 feet.

Senator CASE. How many passengers?

Mr. PASTOR. Twenty-one. Eight sitting down and thirteen standing up.

Mr. HERRINGER. I would seriously encourage the Senator to come to Morgantown.

Senator CASE. How fast do you go?

Mr. PASTOR. Thirty miles per hour.

Senator CASE. How fast will it get to that speed?

Mr. PASTOR. A few seconds.

Senator BYRD. Thank you.

Would you contemplate all 45 vehicles running at one time stopping at the three stations?

Mr. HERRINGER. It could. It would depend on the demand as to the number of vehicles.

Senator BYRD. But it could handle that?

Mr. HERRINGER. It could handle 45.

Senator BYRD. This is computerized.

Mr. HERRINGER. Yes, it is computer controlled.

COST HISTORY

Senator BYRD. Provide for the record in more detail the reasons for the cost escalation of this project.

Mr. HERRINGER. We will do that.

Senator BYRD. And ascribe to the inflation factor whatever increase should be attributed to it.

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West Virginia University (WVU) had, for some time, been interested in obtaining a solution to their inter-campus transportation problem. Because of their interest and need, a federal grant was awarded to the University in the fall of 1969 in the amount of $120,900 (Federal Share) to conduct a feasibility study of Personal Rapid Transit (PRT) systems for use in Morgantown, West Virginia. WVU subsequently reviewed systems studies submitted by the Varo, Dashaveyor and Alden companies and selected the Alden concept as most suitable to their needs. Based on data presented in the study, WVU submitted a grant application to UMTA to design and construct a six-station, 100-vehicle system for an estimated cost of $13.5 million (Federal Share). WVU recognized the preliminary nature of the data on which the cost was based and stated in the grant application that:

> "Due to the size of the project and the fact that final design has not been completed yet, these are approximate figures which will be re-evaluated and submitted no later than 6 months after project approval."

UMTA also had been assessing the applicability of the PRT concept from a national standpoint. Because of the potential national application of such a system, WVU's desire and need for a transportation system and UMTA's desire to test the PRT concept; UMTA selected the Jet Propulsion Laboratory (JPL) to develop a PRT system design meeting the requirements and constraints established jointly by WVU and UMTA.

In the review of project costs, it is necessary to understand the interplay of the three major program constraints: cost, performance (including scope) and schedule. Early in the program (Fall 1970) it appeared that a budget of $20,000,000 would support the system demonstration schedule for the Fall of 1972 and cover the costs as proposed in the WVU grant application. The engineering detail available in the WVU proposal was used as the basis for the budget submission to Congress since at that time the independent UMTA estimate of the system's technical requirements and associated cost was still being developed. The WVU estimated cost is shown on the attached chart "Morgantown Cost Estimate History."

More detailed design data was developed and an associated cost estimate was made by JPL in March 1971. This cost, although still based on incomplete engineering data, indicated that WVU had substantially underestimated the magnitude of the effort required. The construction cost estimate for the guideway, stations and maintenance facility more than doubled; and the cost estimate for the vehicle and control systems design and fabrication had also increased over the original projection. The revised cost estimate was over $37 million and the increase was primarily in the construction area.

Because of the lack of definitive and detailed technical design information in this early phase and because of the greatly increased cost projections, it was determined that the R&D effort should be limited due to the apparent high costs and technical risks. The three-station, five-vehicle fleet was determined to be sufficient to address UMTA's major program objectives while limiting the program cost to the minimum. Additional technical deletions included the construction of a limited (one-vehicle) but expandable maintenance facility, removal of the vehicle training requirements, and the design and coding of only that portion of software necessary to determine concept technical feasibility. The reduced effort was estimated to cost $23.3 million using the March 1971 design detail as the technical baseline. This cost, although slightly in excess of the earlier $20 million funding request, was considered acceptable based on the anticipated substantial technical return.

By February 1972, the design effort was sufficiently completed to provide us a firm cost estimate in most areas. The estimated project cost increased to $36.9 million with over $9 million of the increase in the construction area.

It can be determined from the chart that Phase IA actual costs were within 10 percent of the February 1972 projection. It can also be seen that all areas of the project were significantly underestimated. However, the greatest cost impact was due to the construction of the guideway and stations. Actual Phase IA construction cost was 131 percent above that first estimated and accounts for 57 percent of the total Phase IA cost for system design, construction, installation, operation, and test.

An additional $20.4 million was requested from Congress for the Fiscal Years 1974 and 1975. Of this amount, $19.4 million is required for the Phase IB system contract consisting of 45 additional vehicles, high reliability/fail safe communication and control equipment, redundant computers, operational software, boilers, and pumps for the guideway heating system, a maintenance facility to support the vehicle fleet, special test equipment and maintenance tools, automatic fare collection, destination selection equipment and system control facilities. UMTA and Boeing entered into a contract for the Phase IB effort which guarantees satisfactory performance of the Statement of Work at a not-to-exceed ceiling price of $19.4 million. The contract states that the Government, upon paying the ceiling amount, shall not be obligated to further compensate the contractor for any effort. However, there is an obligation levied on the contractor to satisfactorily complete all aspects of the Statement of Work in accordance with the System Specification. If the contractor or his subcontractors are delayed in the construction of or delivery of supplies and services in performance of the contract due to conditions beyond his control, such as "Acts of God," shortages or Government regulation of energy resources and so forth, the contract may be subject to a delivery extension, without increasing the Government obligations either in cost, fee or ceiling amount of the contract.

The above provides the Morgantown cost history as a series of factual events. It is difficult to determine all the causes for the cost escalation but some specific reasons are known and add to the lessons learned from the Morgantown project. The salient causes are as follows:

1. Government, industry and university participants failed to recognize the complexity of an automated transit system which had to safely and reliably accomplish functions without the intervention of a human operator. The system was viewed as the bringing together of existing automotive and electronic components representing State-of-the-Art technology and thus requiring a minimum R&D effort. It was not recognized that significant R&D advances were required at the system level to accomplish design objectives. The fact that the system was a first-of-a-kind with the usual attendant complexity of such an effort was simply not appreciated.

2. The initial system definition and subsequent cost estimates were based on a feasibility study rather than a system specification with established requirements for maintainability, reliability, and safety. This was the first major new system demonstration and acceptance of the initial cost estimates reflect an overeagerness on the part of all to begin the project.

3. Similarly in 1970, a 2-year schedule was accepted as realistic, in spite of the warnings of experienced personnel that it was unrealistically tight.

4. There developed some confusion between the subtleties of two different objectives, namely:

    a. To develop a specific system for the WVU needs at Morgantown.

    b. To develop a generic, general purpose system which could be deployed in any city of the Nation.

    The impact of these objectives was significant on the design. For example, environmental requirements of locations other than Morgantown had to be considered, adjustments in vehicle size and performance were needed to provide for broader application, and the software design objective was changed so that the developed system could be expanded to support a growing passenger demand. The impact of these changes was felt in each subsystem; however, the changes were necessary to assure potential application in other locations. Once studies of these changes were made and a design cost established, some compromise of the more ambitious objectives had to be made.

5. The initial intent was to develop a "Demonstration System" (including revenue type service demonstration); however, as more realistic, refined cost estimates were obtained and exceeded the available funding, the scope of the program was materially reduced, including a temporary compromise for Phase IA away from "Demonstration" to system R&D.

6. As this process of unclear and redefined objectives accumulated costly project time was wasted, resulting in insufficient time to do the initial R&D phase adequately under Phase IA.

7. The schedule precluded the usual testing and evaluation of subsystems and components prior to hardware fabrication. As a result, significant design problems were encountered at Morgantown which required excessive field testing to identify design deficiencies and numerous modifications were necessary to make the custom designed units function properly.

8. The BART safety problem in 1972, triggered an intensive and costly safety review and analysis which resulted in further design changes that substantially increased project costs.

9. Significant cost increases were incurred in the construction of the guideway and station due to the accelerated construction approach and extensive overtime to support the established schedule. Construction, in general, has experienced significant escalation nationwide during the past few years, but additional specific problems were encountered in Morgantown due to unique terrain and a shortage of construction tradesman in the area.

The lessons of Morgantown were indeed well learned towards the end of Phase IA, during the winter and spring of 1973. This resulted in the clear definition of objectives for the ensuring Phase IB program and a cautiously optimistic expectation that we could have a working system in Morgantown ready for revenue service in 1975.

MORGANTOWN COST ESTIMATE HISTORY

(IN MILLIONS)

DATE	TOTAL COST	CONSTRUCTION	VEHICLE	COMMAND	PROG. MGMT. SYSTEM ENGINEERING INCO & OTHER*	NOTES
8-15-70	13.5	10.0	1.8	1.3	0.4	6 stations, 3.7 guideway miles, 100 vehicles
3-19-71	37.4	21.1	6.4	6.0	4.0	
4-26-71	23.3	11.6	4.6	4.4	2.7	3 stations, 2.2 guideway miles, 5 prototype vehicles, R&D software, test and evaluation, one-vehicle maintenance facility
2-11-72	36.9	20.3	4.4	6.2	6.0	
Phase IA actual cost (completed 6-30-73)	40.4	23.1	4.9	7.9	4.5	
Phase IB additions	19.4	2.7	4.1	5.7	6.9	Guideway heating, revenue service equipment, maintenance facility, 45 vehicles, operational software, safety improvements, reliability improvements, acceptance testing and system demonstration

* Other includes safety and reliability engineering, training, spares, operational, maintenance, and test support equipment.

NOTE: JPL, WVU, TSC and other support costs in the amount of $4,500,000 constitute the remainder of the total $64,300,000 Morgantown PRT budget and are not shown here.

EFFECT OF HOUSE REPORT

As I understand it the budget request of $6.4 million would complete the phase 1 part.

Mr. HERRINGER. That is correct.

Senator BYRD. And will there then be a demonstration of that phase?

Mr. HERRINGER. That is yet to be determined.

Senator BYRD. In your own words again, what effect does the House committee report language have?

Mr. HERRINGER. The 30-day limitation makes it impossible for us and the university to jointly examine how we might complete the total transportation system or to evaluate alternatives there might be to completing the system. It might take 4 or 5 months to do that. I would hope we would not be pushed into a hasty decision by this language.

Senator BYRD. If both the Senate and committee report and the conference report are silent on this point would you follow the course prescribed in the House report?

Mr. HERRINGER. If both the Senate and House were silent?

Senator BYRD. No, if both the Senate report and the conference report were silent.

Mr. HERRINGER. We would have to follow the House report.

Senator BYRD. Suppose there is legislative history on the floor of the Senate which would in effect counteract the mandate in the House committee report. Then what would you do?

Mr. HERRINGER. Obviously it would be strongest if it were in the report. That would be the most direct way. I suppose in terms of floor language it would depend on how strong the floor language was.

Obviously we would prefer not to have the stringent House language. We would be as liberal as we could without getting ourselves into too much trouble.

Senator BYRD. Do you have any suggestion as to the Senate language?

Mr. HERRINGER. We do have suggested language. We will supply that.

HIGH-PERFORMANCE PRT PROJECT

Senator BYRD. I understand there are funds in your request for a Denver PRT project.

What is the status of that at the present time?

Mr. HERRINGER. We have requested slightly over $10 million for an investment in an advanced personal rapid transit system. The project is often referred to as the "Denver" project. That stems from an original intention to have a demonstration project in downtown Denver. We have changed the project and moved it to a test site outside of Denver.

The current status is we have issued a request for proposals for a design phase. We have several excellent proposals in hand. We intend to fund three of those proposals to develop a detailed design and at the end of 9 months choose one of them to go on to prototype development.

PUEBLO AS TEST SITE

Senator BYRD. Why is the testing to be done near Denver rather than at the test facility at Pueblo? Wouldn't it cost less money there?

Mr. HERRINGER. It probably would not cost any less at Pueblo than at Denver, because the Denver Rapid Transit District is paying for the site outside of Denver. The reason that we did locate it there, though, was because of the original connection with Denver in the demonstration project.

The project could be moved to Pueblo.

VOTERS APPROVE BOND ISSUE

Senator BYRD. Didn't Denver pass a bond issue to build a 100-mile, $1.6-billion PRT system?

Mr. HERRINGER. Yes, they did.

Senator BYRD. So is there a possibility that you might end up with the same situation that you have in Morgantown?

Mr. HERRINGER. I don't believe that is a possibility. Certainly there is a possibility that the technology developed in the test would be used by Denver in building their system but we have separated in this case the research from building the system.

Senator BYRD. If the $24 million demonstration proves highly successful would not Denver be coming in for a capital grant to cover 80 percent of the cost of that system if they build it?

Mr. HERRINGER. They may.

Senator BYRD. If not, where would they get that kind of money?

Mr. HERRINGER. They cannot get that kind of money elsewhere. They would come to us for a grant.

ALTERNATIVES ANALYSIS

Senator BYRD. Would you anticipate that if you don't agree with the cost projections somewhere down the road, UMTA will just refuse to continue building a partially completed PRT system in Denver?

Mr. HERRINGER. We are far from the point, Mr. Chairman, of saying even that Denver should have a PRT system. They are right now in the middle of an analysis of alternatives and that decision has not been made yet.

COMMITMENT NOT MADE FOR DENVER PRT

Senator BYRD. As a result of funding this experiment near Denver are you now committing UMTA to their plans for a 100-mile system?

Mr. HERRINGER. No, sir, in no way are we making any such commitment.

Senator BYRD. Do you think the people there could imply that since you were putting $24 million into the experiment?

Mr. HERRINGER. No, sir. We have taken pains to inform the people who are in charge of the Denver PRT that there is no such commitment.

CRITICAL REPORT OF GEORGE HILTON

Senator BYRD. Prof. George Hilton recently testified to a congressional committee that the UMTA program simply reinforces local transit monopolies and through public ownership and operation, removes even a weak market test of the efficiency and service performance of transit companies. Have you had a chance to review his testimony? What would be your response?

Mr. HERRINGER. I have reviewed his testimony. I have also read his book which came out last week.

Senator BYRD. What would be your response?

Mr. HERRINGER. I agree with Dr. Hilton that some flexibility in regulation at the local level is desirable, but I would not ascribe to it the panacea-like effects that he seems to feel would result.

He indicates that this is the answer to all urban transportation problems and I don't agree with that.

PRIORITIES FOR CAPITAL GRANT APPROVALS

Senator BYRD. So far UMTA has been able to meet all requests for capital grants from its existing authority. Now, there may be some time in the near future when we reach a point where we won't be able to meet the demand for funds. Have you decided how you would set priorities in that case?

Mr. HERRINGER. We have not firmly decided at this point. We have made recommendations internally as to how it might be done. I will be glad to state my recommendation, which is that we require analysis of alternatives.

We should require that people do not preselect technology but rather consider the whole range of alternatives. I do not believe we should require the selection of the cheapest or any other single parameter.

We should leave that decision to local authorities but we may have to regulate the Federal funding level based on cost effectiveness.

STATE LIMITATIONS ON CAPITAL GRANTS

Senator BYRD. What is the percentage of your grant money now to any one State?

Mr. HERRINGER. In our law there is a 12.5 percent limitation on total funds of $6.1 billion, but the Secretary has the authority to approve 15 percent in addition—on top of that 12.5 percent.

Senator BYRD. Explain how the 15 percent discretionary fund operates. Does the Secretary have sole authority to distribute those funds without any review as to conflicting needs?

Mr. HERRINGER. I believe that authority is delegated to me as Administrator of UMTA. We have never in recent times—since 1970, we have never brought that 15 percent into effect.

I would say that we would evaluate applications from that 15 percent the same way we would any other application.

Senator BYRD. Will you explain how that fund operates?

Mr. HERRINGER. It is not really a separate fund. It is really an authority to allow a State to get more than 12.5 percent. In effect

the maximum that any State can really receive is 27.5 percent, that is the 12.5 plus the 15. So it is not a separate fund.

If, for example, an application came in from New York that would push it over the 12.5 percent limit we would have to evaluate that application against the other competing demands for the funds.

Senator BYRD. Suppose several projects equally qualify for the funds. Which one would be selected and on what basis would it be selected?

Mr. HERRINGER. That is a difficult question, Senator. I would say that if we had equivalent projects I would consider the 12.5 percent as a controlling factor. If we had a project from a State let's say that had exceeded its 12.5 percent limit and one under its 12.5 percent limit and they were equal, I would go for the one under the 12.5 percent.

CONTRACTING PRACTICES OF UMTA

Senator BYRD. We received information indicating that UMTA uses a multiplier times an hourly rate method of contracting, often with a maximum upset provision in the contract rather than using the lump-sum/fixed-fee method which is used by 75 percent of all Federal Government agencies.

It is argued that the lump-sum method is more efficient in that it requires fewer personnel to keep the records, is less time consuming, and is fairer to the contractors which do business with UMTA directly or through any of the programs funded with UMTA funds.

Please provide an appropriate response for the record on this problem.

Mr. HERRINGER. Yes, sir, Mr. Chairman, we will.

[The information follows:]

URBAN MASS TRANSPORTATION ADMINISTRATION CONTRACTING POLICY

As a matter of policy, UMTA prohibits the use of a multiplier times an hourly rate method of contracting. The prime reason this method is not used is that, technically, it is a cost-plus-a-percentage-of-cost type contract, which is prohibited by Office of Management and Budget regulations. In addition, the multiplier-type contract places a positive incentive on the expenditure of funds, since the higher the costs, the more profit the contractor makes.

The type contract used by UMTA is determined by the nature of the goods or services being procured. The Federal Procurement Regulations provide basic guidelines for this approach.

The prime criterion is assurance that the price is fair and reasonable. Where the equipment or services are defined to the extent that contractors can make a bid, the competitive market place will determine a fair and reasonable price and the contract may be awarded on a fixed-price basis. Where it is more difficult to define the services, a cost estimate may be made, and if the majority of contractors who propose to do the work have estimates in the same general range, the contract may still be awarded on a fixed-price basis. However, where the services are not well defined and there is minimal competition, the cost-plus-fixed-fee contract is used. This type contract provides a reasonable return to the contractor with limited risk. At the same time, it protects the Government from financing windfall profits to the contractor, should the contingencies not materialize.

RATIONALE FOR CAPITAL GRANT LEVEL

Senator BYRD. Submit for the record something on how you arrive at the $1,225 million figure for facility grants for fiscal year 1975.

Mr. HERRINGER. We will.

[The information follows:]

RATIONALE FOR $1.225 BILLION CAPITAL GRANTS ACTIVITY LEVEL

In developing a capital grant activity level of $1.225 billion, a careful review was made of the pending applications for assistance, with particular emphasis on large dollar construction projects. Data available indicated that ongoing projects which encompassed new systems and extensions of existing systems had not utilized the assistance already provided. This, coupled with analysis of experience in letting construction contracts in older transit projects, indicated the construction schedules proposed in the applications were too ambitious. Thus, the activity level was reduced from $1.6 billion to $1.225 billion.

CAPITAL GRANT APPROVALS OF $870 MILLION

Senator BYRD. How much of last year's limit of $872 million has been obligated to date?

Mr. HERRINGER. All of it: $870 million.

CAPITAL GRANT ACTIVITY

Senator BYRD. In light of that, do you really need to increase the limit over 40 percent in 1 year?

Mr. HERRINGER. Yes, sir, Senator, I believe we do. The demands for capital is increasing at a rapid rate, and 40 percent, I believe, is the minimum.

Senator BYRD. What would be the effect on your grant program if that limit were set at $1 billion?

Mr. HERRINGER. At $1 billion, there would be many cities that would be doing without capital improvements in mass transit.

Senator CASE. If these people could come back at 2, Mr. Chairman, I have about a half hour of questions I would like to deal with.

Senator BYRD. You will be back then, Mr. Herringer. Senator Case, you will be here at 2.

You start and I will be here for the outside witnessees.

[Discussion off the record.]

Senator BYRD. I will have additional questions for the record, for you to answer for the record.

ADMINISTRATIVE EXPENSE ESTIMATE

As to item 68 for administrative expenses, we have a request of $9,300,000. This request provides for carrying out the administrative functions of the Urban Mass Transportation Administration, which will have approximately $1.35 billion in new contracts during fiscal 1975 as compared to $989 million in fiscal 1974. This request includes funding for 401 positions, an increase of 40 over the 1974 level.

The House cut that request to $7 million and also cut 10 positions. You seek to have the 10 positions restored and say in your appeal that the money restoration of $2.3 million is not needed because you can get it from "other authorities." What are these "other authorities"? How much in total do you have there?

Mr. HERRINGER. It is a carryover, I believe, from previous years.

Mr. HOADLEY. We have available to us approximately $2 million provided through the appropriations process, which were not specifically earmarked for any activity in the program.

Included in this amount is the $2 million. Under the law it is possible to use these available balances to pay the administrative expenses. And we would suggest that we use these moneys, that are not specifically earmarked in statute, to help pay the cost of administrative expenses and thus reduce the amount of the appropriation.

Senator BYRD. What is the total that you have?

Mr. HOADLEY. Approximately $2 million.

Senator BYRD. On page S. 9 of your justification, you show $1.4 million in unrestricted authority as being available at the end of fiscal 1975. In House testimony, you stated that amount could be used to offset your administrative expenses. Is that correct?

Mr. HOADLEY. That is correct.

Senator BYRD. Has there been any change in that projection since the budget was prepared?

Mr. HOADLEY. We believe the balance is now approximately $2 million, as I mentioned earlier.

Senator BYRD. How does the balance come about?

Mr. HOADLEY. It is basically an amount of money which was provided prior to 1970, which was not specifically earmarked for any activity within the program, as the appropriations are currently enacted. Also, it is by law available for any purposes of the program.

RESEARCH, DEVELOPMENT, AND DEMONSTRATIONS

Senator BYRD. For research, development, and demonstrations, and university research and training, you have requested an appropriation of $79 million with earmarking language allocating those funds as follows:

Research, development and demonstration	$75,000,000
University research and training	2,500,000
Managerial training	1,500,000

The House allowed $51,130,000 for this item, and the appeal asks for restoration of $19,870,000 of the $27,870,000 House cut.

For research, development, and demonstration, you are asking $75 million. Last year, you had a program of $66.2 million but needed an appropriation of only $32.3 million for this account. How did you get the balance of the funds last year?

Mr. HERRINGER. I will ask Mr. Hoadley to elaborate on that, but as I recall, there was a deferral in fiscal 1973 of $20 million, and that was used in 1974 to supplement the appropriation.

Mr. HOADLEY. That is correct.

Senator BYRD. Was there a carryover from 1973?

Mr. HOADLEY. Yes, sir, $20 million.

Senator BYRD. Do you have any funds to bring into fiscal 1975 for this account?

Mr. HERRINGER. $2.5 million.

TRANSIT SERVICE INNOVATIONS

Senator BYRD. Are you doing anything in the area of better use of existing transportation facilities?

Mr. HERRINGER. Yes, sir. We are doing quite a bit, particularly in our service methods and demonstration activity. The goal of that

effort is to utilize existing resources more effectively. We will improve service, travel time, and the like.

We are also spending a considerable amount on research and development of so-called conventional areas in rail and bus.

ALTERNATIVE SOLUTIONS TO TRANSIT PROBLEMS

Senator BYRD. Secretary Brinegar has stated that we can do a lot toward solving our problems through such things as better traffic management, changing working hours to cut down on rush-hour congestion, exclusive bus lanes, et cetera. Are you looking into those suggestions?

Mr. HERRINGER. Yes, sir; we are.

Again, that is one of the principal purposes of the service methods and demonstration activity.

RAIL DYNAMICS LABORATORY

Senator BYRD. Explain the purpose of the Rail Dynamics Laboratory which is being constructed at the Pueblo Test Center.

Mr. HERRINGER. The purpose of the Rail Dynamics Laboratory is to provide a location for testing rail cars, including the interaction of the cars and the track.

When completed, it will be able to simulate the conditions of any track in the world. You can simulate the running of cars over those tracks and learn a great deal about the ride qualities, the cost of operation, the maintenance requirements, and the like.

Senator BYRD. Will you test rail cars for industry?

Mr. HERRINGER. That would be a possibility, yes.

Senator BYRD. If so, do you anticipate charging a fee for such testing?

Mr. HERRINGER. Yes, we do.

DUAL MODE TRANSIT DESCRIBED

Senator BYRD. On page PE–66, you ask $7,750,000 for dual mode transit systems. Would you explain that program to the committee?

Mr. HERRINGER. Yes, sir. The dual mode provides vehicles that travel on ordinary streets with a driver, and then would go to a point where the vehicle would join with an automated guideway.

The driver would leave the vehicle, and the vehicle would travel under its own power and under control of computers to another location where it would be met by another driver, and then the people would be taken to their destinations.

That is the concept. The program, as we have developed it, was to ask several manufacturers to develop designs for how such a concept could be made a reality. We are now in the process of evaluating those designs to decide how we should proceed to implement and develop their concept.

EVENTS IN PHASING DUAL MODE RESEARCH

Senator BYRD. As I understand it, three competitive studies of dual mode systems are nearing completion under phase 1 of this research.

Then, sometime this summer, UMTA will review those studies and determine the feasibility of proceeding with a phase 2.

If justified, phase 2 contract would be awarded this summer to launch a system development effort involving construction of a test track at the Pueblo Test Center, and to build a prototype system and test it on the new track. Is that a correct analysis of your request?

Mr. HERRINGER. That is one possibility of how we would proceed with the program; yes, sir.

Senator BYRD. Assuming all phases you have planned are determined to be feasible, what is the projected cost of that program and how long would it last?

Mr. HERRINGER. Projected cost of this phase 2 is approximately $25 million, and the completion date would be fiscal year 1978.

TIMING AND FUNDING OF DUAL MODE MODIFIED

Senator BYRD. Why spend all of this money at the time when there are not even any PRT systems operating in any cities yet, much less a need to coordinate them with dial-a-ride buses?

Mr. HERRINGER. I think that is a very probing question, Mr. Chairman, and it is one we are asking ourselves. That is one of the reasons we have reduced the initial request for $7,750,000 to $4 million.

One of the things we are contemplating is a slower pursuit of this kind of technology.

First, perhaps would be testing it, testing the service concept with regular buses with drivers, throughout the whole system, and at the same time pursuing critical technologies, individual investigations of critical technologies, rather than at this particular time going directly to the prototype stage.

Senator BYRD. Shouldn't phase 2 be put off until you come back next year so that we can have time to review the studies and determine whether the Congress wants to commit the Federal Government to phase 2 of the program?

Mr. HERRINGER. That is, of course, a question that is really for Congress to decide, the involvement you would like to have in the decision whether to proceed or not.

We believe the $4 million request is justified and that evaluation of this technology should proceed at this time, and in particular evaluation of the service concept.

DOLLAR EXPOSURE IN DUAL MODE

Senator BYRD. What would suffer if phase 2 were to be put off until you come back next year?

Mr. HERRINGER. Time. Phase 2 as you described it may well be put off until next year. The building of a test track under our request—that is still a possibility—and related matters would suffer from an additional year of development.

I should say though also, Senator, that the three manufacturers who have developed a design under phase 1 have each put quite a bit of their own money into the development. Their own investment, as well as Federal investment, is involved and I am sure one of the results of postponement of any further action on Dual Mode would be a decline in their interest in the program.

Senator BYRD. They have put their money in its development.

Mr. HERRINGER. Yes, sir, phase 1; that is correct.

General Motors—one of the proposers has invested $2 million of their own money. We have a total of $500,000.

TRANSIT SERVICE AND METHOD INNOVATIONS

Senator BYRD. Explain your intent in the request of $15 million for what you call Transit Service and Method Innovation on page PE–77.

Mr. HERRINGER. This gets to the point that the Secretary made in the statement that you quoted that we feel very strongly that technology and technological improvements are only one of the ways in which we can improve mobility in our urban areas. We feel there is substantial potential for better service and better use of existing facilities and technology. That is the principal goal of the transit service and methods demonstration program.

Senator BYRD. A reduction in the R. & D. request would also reduce your obligation limitation request by a corresponding amount; is that correct?

Mr. HERRINGER. I am sorry.

Senator BYRD. Your reduction in the R. & D. request would also reduce your obligation limitation request by a corresponding amount.

Mr. HERRINGER. Mr. Hoadley tells me it depends on what we use the available authorities for.

Mr. HOADLEY. In essence, sir, if you use the $2.5 million carried over—as mentioned earlier—as a reduction of appropriation request, this could not be a factor to reduce the total program level limitation. That would have to be an additive—part of the constraint on the program even though it does not appear as a discrete appropriation item.

In other words, you can reduce the appropriation by $2.5 million and not have a comparable reduction in the program limitation.

Senator BYRD. Senator Mathias, do you have any questions?

Before you respond, Mr. Herringer, I want to thank you for your testimony and I want to thank your associates.

Senator Mathias, I have completed my questions, you may ask as many as you like and when you complete your questions, would you recess the subcommittee until 2 p.m. today.

Senator MATHIAS. Mr. Chairman, I will be mindful of Mr. Herringer's needs for refreshment before he resumes at length at 2 o'clock. In fact, I will restrict myself to one question.

Senator BYRD. May I interrupt at this point to say Mr. Herringer will return at 2 o'clock to answer questions by Senator Case after which the subcommittee will hear outside witnesses so any questions you have I would suggest you might wish to propound them at this time.

WASHINGTON METROPOLITAN AREA COMMUTER RAIL SERVICE

Senator MATHIAS. Just one, Mr. Chairman.

During the recent hearings on the Washington area rail commuter problems in testimony a number of the witnesses favored the creation of a special Coordinating Commission of some kind to be made up of representatives of all the Government agencies to share in the responsibility and units of the railroads and unions and citizens groups

who have particular interests and concerns for rail commuter service in the National Capital area. Such a proposed commission of course would not have any direct operating responsibility but it would seek to coordinate the ongoing efforts to provide some sort of initiative and leadership, planning capacity to help in all of these efforts.

Since the time of that hearing we have had some estimates of the cost of first year staffing and overhead costs which could be in the neighborhood of $100,000 to $150,000.

My single question now is under your current budget would a planning or demonstration grant in that general amount be available for this purpose or would an additional appropriation be necessary?

Mr. HERRINGER. Obviously we would have to evaluate any application that came in. I would not anticipate, should we decide to fund such an application, we would not require any additional appropriation to absorb it.

Senator MATHIAS. Would you consider it appropriate for committee staff and for your staff to explore the feasibility of this?

Mr. HERRINGER. This committee staff?

Senator MATHIAS. Yes.

Mr. HERRINGER. Certainly, we would be glad to talk to the staff.

Senator MATHIAS. This staff and my personal staff and perhaps the District of Columbia?

Mr. HERRINGER. We would be glad to talk to you about it.

Senator MATHIAS. Thank you very much.

SUBCOMMITTEE RECESS

In accordance with the chairman's instructions the subcommittee will stand in recess until 2 p.m. today.

[Whereupon, at 1:25 p.m. the subcommittee was recessed, to reconvene at 2 p.m. the same day.]

[AFTERNOON SESSION, 2 O'CLOCK, WEDNESDAY, JULY 24, 1974]

DEPARTMENT OF TRANSPORTATION

URBAN MASS TRANSPORTATION ADMINISTRATION

STATEMENT OF FRANK C. HERRINGER—Resumed

HADDONFIELD DIAL-A-RIDE PROJECT

Senator CASE [presiding]. Thank you for coming back. We will go right to it so as to take as little time as can be from your day, and also not to delay the people who are scheduled for this time.

The hearing will reconvene, and I would like to get right into the questions. The first one, our State and local officials up in New Jersey are trying to decide whether to take over and run the Haddonfield Dial-A-Ride project for which Federal funds run out on October 1. I understand Mr. Sagner, our commissioner of transportation, has written you asking for $400,000 to continue the project for 6 months beyond the date scheduled for termination of funds. Have you decided what you plan to say to him in reply?

Mr. HERRINGER. Yes, I have. I believe I sent a letter yesterday.

Senator CASE. There is a copy of a letter from Mr. Sagner here. I would like to put that in the record. Do you have your reply?

Mr. HERRINGER. I don't have it here, but I will provide it for the record.

[The letter follows:]

STATE OF NEW JERSEY,
DEPARTMENT OF TRANSPORTATION,
Trenton, N.J., June 25, 1974.

Hon. FRANK C. HERRINGER,
Urban Mass Transportation Admiinstrator, U.S. Department of Transportation, Washington, D.C.

DEAR ADMINISTRATOR HERRINGER: I want to thank you and your staff for taking the time to visit with Governor Byrne and NJDOT in Trenton on Monday.

I think it was beneficial for Governor Byrne to make your personal acquaintance and for you to appreciate the dedication of our Chief Executive toward improviding New Jersey's mass transportation.

As I discussed with you, the Federal Dial-A-Ride Demonstration Program in the Haddonfield area is scheduled to end October 1, 1974.

Although this program was initially and continually described to the community and public officials as a demonstration project, you can appreciate the pressure that we are under for its continuation. There are approximately 35,000 trips a month, primarily for elderly, handicapped and others who have no other alternative transportation.

A $800,000 deficit is projected at present cost. We are exploring methods of funding the continuation of the program. Hopefully this will be through the cooperative efforts of the State, through the Department of Transportation, the County and the communities involved. The Department of Transportation will request legislation to accomplish this when the Legislature returns in the fall.

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In order to assure continuation of this highly desirable service, we urgently request that a minimum $400,000 be made available so that we can be assured of six months continued operation while we pursue the program outlined above.

Awaiting your advice, I am

Sincerely,

ALAN SAGNER,
Commissioner of Transportation.

JULY 23, 1974.

Hon. ALAN SAGNER,
Commissioner, Department of Transportation,
State of New Jersey, Trenton, N.J.

DEAR COMMISSIONER SAGNER: Thank you for your letter of June 25. I enjoyed my trip to Trenton and the visit with Governor Byrne was extremely useful in helping me to understand the general mass transit situation in New Jersey.

The Haddonfield Dial-A-Ride Program has, of course, been one of our highly visible programs for several years. We have enjoyed a productive relationship with the New Jersey Department of Transportation that has helped us to solve the many problems that have arisen in the course of this demonstration. Haddonfield has stimulated what has now become a trend among many small communities to provide similar servies.

We understand there is sentiment in Haddonfield to keep the system alive under an arrangement involving State or local funding. I sincerely hope that this system or some variant can continue to serve the people of Haddonfield.

With respect to further Federal funding, however, I regret that I cannot be encouraging. As you know, we did not request FY 1975 funding for operations in Haddonfield, although some of our FY 1975 budget request was addressed to final data analysis and reporting. The decision to terminate the program with FY 1974 funds was made on the basis that our research objectives would be satisfied with the additional operational time that these funds would make available.

Our funding situation at the present time is that the House Committee on Appropriations has recommended that all Dial-A-Ride funding for FY 1975 be eliminated. We are hopeful that at least part of the requested $1.5 million will be restored when the House-Senate Conference Committee convenes sometime in August. However, given the discussion on the floor of the House regarding Dial-A-Ride (Congressional Record, June 19, 1974, WH5282—copy attached), I seriously doubt that any restored funds will be available for Haddonfield.

Give these circumstances, I do not feel that it is possible for me to be encouraging regarding your request for an additional $400,000.

We look forward to working with you through the current phase of this project. Let me reiterate that we are pleased at the positive response the system has received in Haddonfield.

Sincerely,

FRANK C. HERRINGER.

SUMMARY OF UMTA POSITION

Senator CASE. Would you do that, and summarize the position.

Mr. HERRINGER. I told Mr. Sagner that we, of course, are pleased to cooperate with the State of New Jersey Department of Transportation in Haddonfield in developing this project and testing it. They have known for some time of our plans to terminate the project in October 1974. This has been in the schedule for a long time.

I pointed out to Mr. Sagner that we requested $1,500,000 in Dial-A-Ride money in our budget submission to the House and that the House provided no money. They provided zero dollars for Dial-A-Ride.

In any case, in that $1,500,000, we had $300,000 for Haddonfield, but that was not for extension of the project. That was just to get us through October and to provide the necessary final reports, and the like.

Senator CASE. That was $200,000 for analysis, wasn't it?

Mr. HERRINGER. I believe it was $300,000 for analysis and a final report. We appreciate Mr. Sagner's problem, but as I pointed out to him in the letter, in view of our request and the House action, and particularly in view of some commentary on the floor of the House about the project that I could not be optimistic about our ability or desire to fund an extension of the project.

Senator CASE. If you got $400,000 additional funds for that transition period would you be in a position to use it for this purpose?

Mr. HERRINGER. Obviously if we are directed to do that out of an appropriation we would do that. I would not support taking the money out of our service methods and demonstration program. I think the Haddonfield project from a research and demonstration standpoint has run its course and it would be difficult for me to justify taking the $400,000 away from some other city and putting it in Haddonfield.

Senator CASE. But if you got money for that purpose, from Congress—and this may be very iffy—you would be in a position to allocate it for that purpose?

Mr. HERRINGER. I would recommend doing that. Of course, we are subject to the constraints, but from my point of view, yes, I would.

Senator CASE. Are you in a position to tell us about these other constraints?

Mr. HERRINGER. All I am referring to is the need for Office of Management and Budget action, apportioning the money out to the departments. I am not suggesting there is a problem.

Senator CASE. Perhaps there is a question of impoundment, but it is so hypothetical I won't press you.

Mr. HERRINGER. Thank you.

HADDONFIELD COST EXPERIENCE

Senator CASE. Is this project useful for application to other parts of the country either in a positive or a negative way, or are there parts of it that you would think ought to be changed for general application? I wish you would discuss it. It is a most interesting matter and we are glad to have had it, but we understand that each one of these rides costs two or three times what a taxicab would cost. Is that about right?

Mr. HERRINGER. Yes; they have deficits of approximately $800,000 a year. That is why the State is asking us for $400,000 for 6 months, which is obviously a very large expense for a city the size of Haddonfield. My understanding is, one of the State's problems is that if they funded Haddonfield, what are they going to do with the other communities?

Senator CASE. I think there is no doubt about that, and while it is more than just Haddonfield, there is a community of several towns, it is a very small part of the State.

Mr. HERRINGER. That is right.

Senator CASE. So the question really is: Is there any way you can get this cost down for this or a comparable project, or one that would serve the same purpose?

Mr. HERRINGER. There are many ways of reducing the cost, and if I were running a Dial-A-Ride project and trying to minimize costs I would do a number of things different from the things we are doing in

Haddonfield. One, I would not offer 7-day-a-week, 24-hour-a-day service. That is very expensive, and, of course, the utilization in off-peak hours, nondaylight hours, at 3 o'clock in the morning, is very, very sparse. Also, I would probably charge a higher fare than we are charging there. The current fare, I believe, is 35 cents—it was down from 60 cents—and I believe you could justify a higher fare, with perhaps directly helping those who cannot afford the fare with some subsidization.

Another problem, of course, with the Haddonfield project is that we are paying diversionary payments to taxicab owners, and perhaps if I were starting a fresh Dial-A-Ride project I would try to figure out a way to bring the taxicab owners and operators in on the project.

Senator CASE. You cannot pay people for doing nothing, obviously.

Mr. HERRINGER. Right, but there are many steps that can be taken. As evidence of the attractiveness of the concept there are some 40 communities across the country who are in various stages of implementing Dial-A-Ride type of service. Reston now has a Dial-A-Ride service, as does Fairfax City. In Santa Clara County, California, there is a Dial-A-Ride service. The Rochester Dial-A-Ride service charges a dollar a ride. So it is an attractive concept.

I believe the work we have done in Haddonfield is very important. It has laid the foundation for the spread of the service.

UNIQUE FEATURES OF DIAL-A-RIDE

Senator CASE. What is so unique about it? What is the difference between sending out food stamps, or car stamps, that would be useful for a taxi ride, and then some supervision to see that the service was actually there.

Mr. HERRINGER. You mean what is different between——

Senator CASE. What is unique about Dial-A-Ride?

Mr. HERRINGER. The unique part about Dial-A-Ride is the capability of handling many vehicles. A typical taxi operation uses a human dispatcher. There is a limit to the number of vehicles he can keep in his head, or even on a map, and his efficiency in assigning people to routes drops off the greater the load becomes on his system. Haddonfield used a computer to assign people to routes and to schedule.

NUMBER OF HADDONFIELD RIDERS

Senator CASE. I understand the computer issue. My point really is how many riders there were in Haddonfield. Monthly total, it says here, 36,448. Average weekday 1,208. Average Saturday, 1,285, and Sunday about half that, 530.

Now I don't know how many taxicabs there are, but your figures are available I suppose. To take care of 1,200 passengers a day how many cabs would you need?

Mr. HERRINGER. I don't know. We can make assumptions. I assume 100.

Senator CASE. You mean the taxidriver could take care of about 12 passengers a day?

Mr. HERRINGER. Maybe that is high.

Senator CASE. Maybe it is low. How could a guy possibly make a living on 12 passengers a day? I would think he would have to have a

lot more than that. This little chart here says—it is entitled "Diversion by Dial-A-Ride", and it shows auto drivers 11 percent. That means 11 percent of Dial-A-Ride's passengers would have taken an auto and driven it themselves. Fifteen percent auto passengers. That means sit six. Fifteen percent from taxis. Twenty percent from bus. Ten percent would have walked. I am not sure you are doing a favor to that group by taking people away from that. Other, 5 percent. I don't know just how they get around. Twelve percent would not have gone any way.

Mr. HERRINGER. Certainly one of the potential uses of Dial-A-Ride that deserves further examination is that of providing alternate means of transportation for the elderly and handicapped.

AGE OF HADDONFIELD RIDERS

Senator CASE. That is shown by another chart we have here that is broken down by groups: 8 percent under 14; 27 percent from 15 to 24, that is 10 years; 25 to 44, that is 20 years, 22 percent; and 45 to 65, that is another 20 years, 30 percent; and over 65, 13 percent. So that 43 percent of the people are 45 or over.

This is quite important for single women, for children, for elderly people, and people who are ill and have physical disabilities. This is a terribly important service, and combined with your other programs—the development of vehicles to take care of people with disabilities, for example, can still be useful, and I wish you well with it.

I don't know whether we will get any money out of Congress for continuing Haddonfield, but we will do our best.

You need $300,000 more than the House allowed for your analysis and report work, is that right?

Mr. HERRINGER. Yes, sir, and we requested a total of $1,500,000 in Dial-A-Ride moneys, $300,000 of which is to conclude the Haddonfield work, and the other $1.2 million is to build on the work we have done at Haddonfield to attempt to develop Dial-A-Ride systems that are capable of operating on a region or county-wide basis, in essence connecting a group of Haddonfield type cities, subsystems into a single major, coordinated system.

SMALL BUS RELIABILITY PROBLEM

Senator CASE. I understand you have experienced a number of malfunctions and breakdowns of vehicles, is that right?

Mr. HERRINGER. There have been a number of breakdowns on the vehicles in Haddonfield, yes.

Senator CASE. Is there any particular reason for that?

Mr. HERRINGER. There is not. One of the gaps in the supply of vehicles is a reliable small vehicle that can be used in the type of service that we have in Dial-A-Ride.

Senator CASE. What is that size?

Mr. HERRINGER. That is about a 20-passenger vehicle.

Senator CASE. You enter in the front and leave from the front, and there are seats on each side of the center aisle; a normal bus configuration?

Mr. HERRINGER. Yes, sir.

There just has not been much of a market for buses of that size, and consequently there is not a wide range to choose from. One of the

projects that we are undertaking at the direction, principally of the House last year is development of a small vehicle. We call it a para-transit vehicle, that is low-polluting and quiet, and has some other good qualities.

Senator CASE. Including safety?

Mr. HERRINGER. Including safety and reliability, and the ability to accommodate wheelchair passengers. I guess we are just about to receive responses to a request for proposals on that project.

USE OF SMALL FOREIGN VEHICLES

Senator CASE. I believe you went overseas to get some of your buses, did you not?

Mr. HERRINGER. Yes, sir, some of them are Mercedes buses.

Senator CASE. Is there anything related to your malfunctions as a result of getting them from overseas? Can you get enough spare parts?

Mr. HERRINGER. No, I think the Mercedes perform as well as the others.

Senator CASE. Did you have your problems on the American vehicles or the foreign?

Mr. HERRINGER. There have been some on both.

Mr. PASTOR. There are complaints about American manufactured buses as well as the others.

Senator CASE. Do you think you have more trouble than the average bus owner?

Mr. HERRINGER. No, I don't think we do.

LINDENWALD HIGH-SPEED LINE

Senator CASE. We have a high-speed line that is the Lindenwald, and I understand that it was hoped that that would provide a number of passengers for the Dial-A-Ride system, and the result there was disappointing. Was that right?

Mr. HERRINGER. I know we served the Lindenwald line particularly in the evening and in the morning rush hours. In fact we have run a different kind of service in the evening. We run a zone service rather than the regular Dial-A-Ride service. I am not aware of the particular demand figures on the Lindenwald.

WAIT-TIME FOR DIAL-A-RIDE SERVICE

Senator CASE. This Haddonfield Dial-A-Ride 92d Congress report has a statement on page 18 which reflects a feeling of unreliability on the part of possible passengers, reinforced by their experiences with current requests where wait-around time fluctuates over a wide range. Do you have any comment, or do you know anything about that?

Mr. HERRINGER. That is, of course, a problem with any shared ride system, that is what the passenger gives up. He gives up the assuredness of a particular departure and arrival time. We try in the Dial-A-Ride system, when the potential passenger calls a dispatching center to give him a range of pickup times, and a range of delivery times.

Hopefully we meet that estimate in most cases. But the fact of the matter is it takes longer than it does if you have a car.

Senator CASE. Of course it would. It would take about 5 minutes to get from the station in Lindenwald—to get to anyplace in the area—it would take most anything up to half an hour by bus.

Mr. HERRINGER. But it may make it possible for some families to only have one car instead of two, so everyone has to make his own tradeoff.

MULTIPLE PICK-UP AND DELIVERY SERVICE

Senator CASE. Explain what you mean by "gather," "scatter" and "many-to-many" tours in conjunction with the project. How have these concepts been applied at Haddonfield? Have they been successful?

Mr. HERRINGER. The basic operation of the Haddonfield Dial-A-Ride is the so-called many-to-many operation. What it means is an individual in a service area can be picked up at any point and delivered to any point.

Now the other kinds of operation include "many-to-few," where you can be picked up at any point, but the destination might only be two or three permissible destinations. You might have a shopping center, and the Lindenwald station and a hospital in "few-to-many," where you can be picked up at a few locations and delivered to many. That is the service provided from Lindenwald at night. You can be picked up at Lindenwald and delivered to your home. I suppose you could have "few-to-few," and that is pretty much a regular bus service.

HISTORY OF BUDGET ESTIMATES

Senator CASE. For fiscal 1975 budget, what did you ask the Secretary for, and what did the Department request from OMB.

Mr. HERRINGER. For fiscal 1975?

Senator CASE. Yes, sir.

Mr. HERRINGER. In capital? Are you talking about capital grants?

Senator CASE. Yes, sir.

Mr. HERRINGER. In capital grants we asked the Secretary for $1,817,000,000.

Senator CASE. And the Secretary asked OMB——

Mr. HERRINGER. $1,600 million.

Senator CASE. And the actual response from OMB?

Mr. HERRINGER. The President's budget calls for $1,225,000.

Senator CASE. A markdown of——

Mr. HERRINGER. $592 million, except that in our initial request we did not include any moneys out of the Federal Aid Highway Act of 1973. The President's budget estimates that there be $200 million dollars out of the Federal Aid Highway Act.

So we anticipated $1,425 million spent on transit capital; $1,225 million from our budget and $200 million from the highway program.

Senator CASE. I would like to have inserted in the record a table which has been prepared on this point breaking down the other items as well as the capital grant.

Mr. HERRINGER. We will do that.

[The table follows:]

DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION
URBAN MASS TRANSPORTATION FUND

FY 1975 BUDGET FORMULATION
Figures by Activity
(dollars in millions)

Activity	UMTA Est. to DOT	UMTA Est. to OMB	President's Budget
Capital Grants	$1,817.0	$1,600.0*	$1,225.0*
Technical Studies	45.0	45.0	37.7
Research, Development and Demonstration	80.0	80.0	75.0
Managerial Training	1.5	1.5	1.5
University Research and Training	3.0	2.5	2.5
Administrative Expenses.	9.0	9.3	9.3
Total	1,955.5	1,738.3	1,351.0
Capital Grants from the FY 1975 Federal-Aid Highway Act	...	200.0*	200.0*
Grand Total	$1,955.5	$1,938.3	$1,551.0

*These factors provide a Capital Grants activity level of $1,800 million and $1,425 million.

POTENTIAL FOR $1.6 BILLION CAPITAL GRANT ACTIVITY

Senator CASE. If the committee gave you all the Department asked OMB for, could allocate it and would you in fiscal 1975?

Mr. HERRINGER. Let me address the could question. I would say that yes, we could approve $1,600 million to legitimate projects. I do not believe at the present time in looking at the demand and the schedules to which people are constructing new projects—I do not believe that the President's budget level, $1,225 million will retard the progress on any ongoing projects.

Senator CASE. That is capital grants?

Mr. HERRINGER. Yes, sir.

REDUCTION IN ESTIMATES

Senator CASE. Reductions also took place in technical studies, research and development, managerial training—no, that was not reduced—research and administration. So the large cuts were first in capital grants and then $7,300,000 in technical studies, and $5 million, research and development.

Mr. HERRINGER. That is correct.

Senator CASE. You would not have any trouble in meeting that, I take it, in allocating those moneys. You would not have scheduled for them in the first place.

Mr. HERRINGER. I would say in technical studies area that we feel now that $37,700,000 is adequate to meet the present needs. In the research and development area, especially after reviewing our program, after the House reductions, that we certainly think the President's budget amount was sufficient.

If I could just clarify my statement on the capital budget because that is, of course, the major part of the dollars. In fiscal year 1974 we could have allocated and approved considerably more than the $870 million that we approved. But we would have been giving it to cities that would have essentially been bankrolling it.

Let me give you an example. Atlanta requested $291 million. We could have approved $291 million. We approved $50 million out of the fiscal year 1974 budget, but that $50 million is more than sufficient to keep Atlanta moving on schedule, at least through the spring of this year.

INVENTORY OF PENDING APPLICATIONS

Senator CASE. What about your general backlog of capital grant applications?

Mr. HERRINGER. It is about $4,500 million.

Senator CASE. So if you really went to work, you could find a place for the money?

Mr. HERRINGER. Yes, but in many cases the point I am trying to make is this money is not really needed for several years.

Senator CASE. In any important case?

Mr. HERRINGER. In any important case.

TRANSIT OPERATING SUBSIDY LAW

Senator CASE. If the transit operating subsidies bill which is in conference now should become law applicable to this fiscal year, how much more obligational authority would you need?

Mr. HERRINGER. As a matter of fact the House Rules Committee reported out that bill this morning. I don't know when it is going to come to the floor of the House, but I assume it is going to be soon.

The bill talks about $800 million. The bill originally was a 1974–75 bill; 1974 is now past, and the wording of the bill would indicate the $800 million would all be available in fiscal year 1975. We have not, of course, had time to develop a definitive administration position on the bill yet, but I would suggest that we would find it very difficult to recommend it to the President that he approve a $800 million addition to the budget in fiscal year 1975.

Senator CASE. Do you suppose your opinion might be asked about whether to sign this bill?

Mr. HERRINGER. Yes, it might. It will be offered.

Senator CASE. What would your offering be?

Mr. HERRINGER. I would recommend against signing the bill in its current form. I believe the bill could be made much more attractive to the administration with a few relatively simple changes, but it is difficult to do once the conference report has been filed.

Senator CASE. I think I am right, but the bill only provides for $400 million the first year.

Mr. HERRINGER. It was originally introduced in 1974. It provided $800 million for 1974 and 1975 with our discretion as to in which year that money was to be used, but now with 1974 gone all the $800 million would be available in 1975. One of the changes that might be considered would be to make it a 1975–1976 bill, for example. That would be a very attractive change.

Senator CASE. Would that make it more attractive?

Mr. HERRINGER. Yes, sir.

[Discussion off the record.]

CRITERIA FOR RAPID RAIL SYSTEMS

Senator CASE. You told me some time back you are developing criteria for funding rapid rail systems. What is the status of those? What do you have in mind?

Mr. HERRINGER. The status is that we have made recommendations to the Office of the Secretary, and those are currently under review by the Office of the Secretary. We recommended that we require that any city contemplating a major new project be required to undertake comprehensive analysis of alternatives taking into account all factors involved, and that the results of this alternative analysis be public and be available to the citizens of that community before they make a decision on what kind of a system they want. That is relatively uncontroversial.

I further feel that we should not restrict the choice of alternatives to the maximization of any particular parameter. For instance we should not require the selection of the most cost-effective alternative, or the one that conserves the most energy, or the one that is most economical, or cleanest from an environmental standpoint. I believe that should remain a local decision. I believe that is the only place that decision can be made.

The problem arises—what if you allow everyone to pick his own alternative, and the total of all local alternatives turns out to be more

than the Federal Government can allocate to mass transportation? In that case, I would advocate allocating the Federal resource based on the most cost-effective alternatives, but allowing the local body to use that money any way they saw fit.

Senator CASE. I think I would raise some questions—for instance your comment about not having guidelines for such matters as pollution, for instance, air pollution and whatnot. I would be inclined to take issue with that because having been a local official I know that if you have one big industry, and a lot of people's jobs depend on it, and that industry says, "We cannot keep on unless you let us burn high-sulfur coal", the pressure from the people will be unbearable, and some pressure has to come from outside.

That is not said to denigrate the importance—the industry might say, "We will go next door where those guys will let us do it if you won't." What then can a local man do?

Mr. HERRINGER. I did not mean to imply there should not be Federal guidelines in areas like the environment.

Senator CASE. I just wanted to be sure that was so. I don't mean to be critical.

Mr. HERRINGER. There are many who feel that we should only fund the most cost-effective alternative, whatever the most cost-effective alternative would be.

Senator CASE. Effective for what?

Mr. HERRINGER. For solving the transportation need, whatever it might be.

CRITERIA SHOULD INCLUDE MANY FACTORS

Senator CASE. At a minimum pollution?

Mr. HERRINGER. Yes; but as you start to introduce more and more constraints it becomes more and more——

Senator CASE. That is just one constraint.

Mr. HERRINGER. Then we have the question of energy.

Senator CASE. That is important too.

Mr. HERRINGER. And then the question of land use and development of the land. I feel particularly land use is one question that should be answered locally. I do not believe we should be in a position where we are federally dictating to a city what shape it should grow into. I believe that is a decision that should be made locally and only locally.

Senator CASE. We would leave that up to the States. You believe it should be made statewide. You would not object to that?

Mr. HERRINGER. No; I would not.

Senator CASE. Just so long as you did not have to do it.

Mr. HERRINGER. That is right.

Senator CASE. I would like to leave the record open on that matter as to my own feeling about that. I think even there there are some guidelines that are appropriate to be established federally. Land use is a terribly important matter.

HOUSE REDUCTION OF LIQUIDATING CASH

Senator CASE. The House denied $90 million of the $490 million you requested for liquidation of contract authorization. What is the effect of the House action?

Mr. HERRINGER. I believe we expect to be able to meet obligations, liquidate obligations with the $400 million.

Senator CASE. So you are not appealing that?

Mr. HERRINGER. No.

INTERSTATE TRANSFER ACTIVITY

Senator CASE. How much do you expect in the way of requests in the fiscal year 1975 for interstate transfers?

Mr. HERRINGER. That is difficult to say. I would expect—my own personal assessment at this point is probably in the neighborhood of $100 million.

Senator CASE. Can you identify the segments involved?

Mr. HERRINGER. There are a number of possibilities. There are possibilities in New Jersey and there are possibilities in New York, and there is a possibility in Honolulu, and——

Senator CASE. Did you say New Jersey?

Mr. HERRINGER. Yes, sir, there is a possibility in Los Angeles. Portland, Ore., there is a possibility. We have Boston, of course.

Senator CASE. What is the New Jersey segment that is involved?

Mr. HERRINGER. I don't know offhand. We will supply it for the record.

[The information follows:]

NEW JERSEY INTERSTATE WITHDRAWAL (1975)

The State has under consideration the possible withdrawal of I–495, a 1.3-mile segment connecting I–95 and the Lincoln Tunnel.

Senator CASE. Do we need to appropriate any money to facilitate such transfers?

Mr. HERRINGER. No.

Senator CASE. This comes directly out of the highway funds?

Mr. HERRINGER. That is correct.

Senator CASE. Is it a one-for-one basis?

Mr. HERRINGER. Is it dollar for dollar?

Senator CASE. Yes, sir.

Mr. HERRINGER. Yes, sir. Interstate transfers do not come out of the Highway Trust Fund. They come out of general revenues on a matching basis. Interstate transfers always come out of general revenues. On the other hand the flexible urban systems funds in fiscal year 1975 have $200 million that can come out of the Highway Trust Fund for buses. In fiscal 1976 all of the urban systems funds from the trust fund are available for either buses or rail. Of course, this public Federal accounting has no effect on local areas. From the point of view of the local area they have immediate flexibility now.

ENVIRONMENTAL IMPACT STATEMENT REVIEW

Senator CASE. How many staff people do you have in UMTA working on environmental impact statements?

Mr. HERRINGER. Two.

Senator CASE. Do you find that adequate?

Mr. HERRINGER. Well, it is more adequate than the one we had had up until recently. We are hopeful that with the 100-percent increase

in staff that we will be able to move environmental impact statements a lot more quickly than we have in the past.

Senator CASE. Can you provide for the record a breakdown of the movement of environmental impact statements over the last fiscal year, indicating what your problems have been and whether you now will be able to speed things up with the additional person?

Mr. HERRINGER. Yes, we will.

[The information follows:]

FLOW CHART OF ENVIRONMENTAL IMPACT STATEMENTS

There follows the flow chart for environmental statements prepared for UMTA capital grant projects. Problems which tend to impede the process are discussed briefly below.

There are some parts of the process which habitually take longer than the ideal projections shown on the chart. These are: (1) the time lapse between receipt of the environmental analysis from the applicant and preparation of a draft EIS (30 to 60 days); (2) approval of a Section 4(f) memorandum, which has been averaging 40 days rather than 14; and (3) receiving a memorandum of agreement for historic sites (National Register), which takes anywhere from 30-90 days. These latter two processes must both be completed prior to circulation of the final statement.

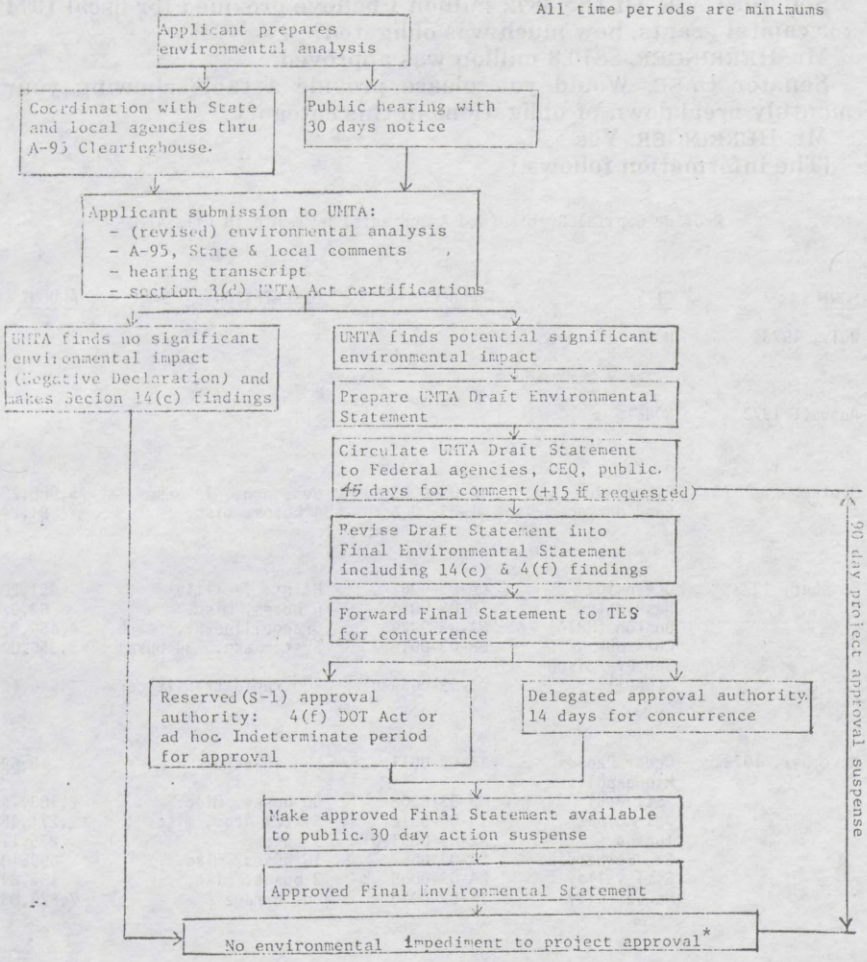
There seem to be three variables which can affect the length of the process. One is the quality of the local preparation. This flow chart assumes starting with a solid document from the applicant. If the original statement is thorough, the initial UMTA review and revision will be more expedient. Also, it is most likely that there will be fewer comments from governmental agencies and other interested parties which will have to be worked out and incorporated into the final statement.

The second variable is the number of 4(f) and Section 106 (Historic Sites) issues in the project. As mentioned before, the approval process for these issues can be quite lengthy. Avoidance of an impact on a park or an historic site could make a difference of as much as four months in circulation.

Another variable seems to be local acceptance of a project. If the project is poorly planned or highly controversial, the number of comments received (all of which must be answered and incorporated into the statement) will skyrocket (adding as much as 30-60 days of UMTA work to the preparation of the Final Statement). This, again, accounts for a lag in preparation time for the Final Statement, as working out and answering these issues necessitates a great deal of coordination among Federal agencies, consultants, and the applicant.

PROCEDURES FOR CONSIDERATION OF ENVIRONMENTAL EFFECTS
OF PROJECTS SUBJECT TO UMTA 5610.1

All time periods are minimums



* Project approval package must include:

-- Environmental Statement (including Section 14(c) findings) with 4(f) findings, if required, or Negative Declaration and Section 14(c) UMT Act findings

CAPITAL GRANT APPROVALS IN FY 1974

Senator CASE. Of the $872 million I believe provided for fiscal 1974 for capital grants, how much was obligated?

Mr. HERRINGER. $870.3 million was approved.

Senator CASE. Would you please provide a table showing your monthly breakdown of obligations in this category?

Mr. HERRINGER. Yes.

[The information follows:]

Provide Capital Grants (and Amendments) by month in FY1974.

MONTH	CITY	PROJECT	DESCRIPTION	AMOUNT
July, 1973	NONE			
August, 1973	NONE			
September, 1973	Richmond	VA-03-0005	Sys. acq., 76 buses	5,068,280
	Fond du Lac	WI-03-0008	4 buses, misc.	84,844
October, 1973	Oceanside	CA-03-0062	Maint. facility	451,200
	Washington	IN-03-0016	6 buses, misc.	63,928
	Boston (MBTA)	MA-03-0029	Orange line,El. rehab.	4,456,872
	Columbus	OH-03-0018	System acq., 30 buses	5,356,000
	San Francisco (BART)	CA-03-0059-01	100 rapid transit cars	34,646,400
November, 1973	Cedar Rapids	IA-03-0011	LSN injectors	3,692
	Minneapolis - St. Paul	MN-03-0008	60 buses, misc.	2,103,768
	Des Moines	IA-03-0012	System acq., misc.	2,271,480
	Tucson	AZ-03-0001-01	9 buses	235,116
	San Bernardino	CA-03-0067	16 buses, misc.	699,108
	Simi Valley	CA-03-0068	3 buses, misc.	134,896
	Kansas City	IT-03-0020	Bus garage	7,829,832
December, 1973	Joliet	IL-03-0020	20 buses, misc.	907,900
	Billings	MT-03-0002	5 buses, maint. fac.	228,112
	Alexandria	LA-03-0002	Cost escalation	82,976
	Green Bay	WI-03-0008-01	System acquisition	975,548
	Chapel Hill	NC-03-0003	19 buses, garage	860,480
	Allentown	PA-03-0038-01	Maint. facility	565,200
	Covington (TANK)	KY-03-0005	52 buses, misc.	3,188,816
	Juneau	AK-03-0002	3 buses	106,304
	Culver City	CA-03-0070	8 buses	331,208
January, 1974	South Bend	IN-03-0017	25 buses, misc. equipment	1,203,212
	Akron	OH-03-0023	30 buses, fare-boxes	1,355,316

MONTH	CITY	PROJECT	DESCRIPTION	AMOUNT
	Grand Rapids	MI-03-0027	19 buses	638,400
	Poughkeepsie	NY-03-39-01	Cost escalation	28,920
	Hattiesburg	MS-03-0005	12 buses, fare-boxes	494,880
	Youngstown	OH-03-0025	Sys. acq., 51 buses	2,343,200
	Ashtabula	OH-03-0024	3 buses, misc boxes	123,240
	Atlanta (MARTA)	GA-03-07-02	Maintenance facilities, misc.	6,188,152
	Waterloo	IA-03-09-01	Cost escalation	94,000
	Philadelphia (SEPTA)	PA-03-09-01	Hatboro/Warminster	550,000
	Rhode Island	RI-03-04-01	Change in scope	74,256
	Sumter	SC-03-01-01	Cost escalation	42,182
	Ann Arbor	MI-03-0023	68 buses	1,333,200
	New York (NYCTA)	NY-03-44-03	2nd. Ave. subway	50,000,000
	Detroit (SEMTA)	MI-03-0029	3 sys. acq.	2,872,800
February, 1974	Eugene	OR-03-0007	16 buses, garage	1,043,012
	Salt Lake City	UT-03-0003	28 buses	1,087,176
	Aurora	IL-03-21-1	Cost escalation	82,932
	Wilkes-Barre	PA-03-0045	Sys. acq., misc. equipment	630,800
	Charleston	WV-03-0004	Sys. acq. 43 buses/ miscellaneous	3,052,424
	New York (NYCTA)	NY-03-0035	LIRR ext. to mid-town	42,492,000
	New Orleans	LA-03-0012	2 ferries, misc. improvements	10,707,920
	Manchester	NH-03-0002	Sys. acq., misc. equipment	1,118,496
	New Castle	PA-03-0044	4 buses, 4 shelters sys. acq., misc. equipment	630,800
March, 1974	Wilmington	DE-03-0001-01	Add. funds, maint. facilities	1,295,288
	Broward County	FL-03-0015-01	Cost escalation	592,000
	San Diego	CA-03-0071-01	RUCUS	70,000
	Jamestown	NY-03-0004-01	Garage	196,313
	Ashland	WI-03-0012	1 bus, 1 shelter	37,180
	San Fransisco (BART)	CA-03-0083	12th Street Station	1,172,000
	Madison	WI-03-0009-01	Cost escalation	81,721
	Bakersfield	CA-03-0027-01	Cost escalation	94,510
	Hilo	HI-03-0003	15 buses, supp. equipment	474,852
	Rochester	NY-03-0037-01	Cost escalation	2,991,448
	Santa Barbara	CA-03-0084	19 buses, misc. equipment	634,872
April, 1974	TANK	KY-03-0008	Sys. acq.	261,120
	Westport	CT-03-0003	9 mini buses	241,696
	Gulfport	MS-03-0003	28 buses, main. facilities	1,046,800
	San Meteo	CA-03-0054	10 buses	309,540
	Los Angeles (SCRTD)	CA-03-0034-2	Cost escalation	1,548,616
	Sacramento	CA-03-0063	109 buses misc. improvements	2,496,720
	Harrisburg	PA-03-0047	Sys. acq. 55 buses	3,658,356
	Hagerstown	MD-03-0006	14 buses, gar., off. misc.	396,968
	Broome County	NY-03-0006-1	Cost escalation	104,000
	Lansing	MI-03-0005-2	Cost escalation	21,600
	Topeka	KS-03-0004-1	Mian. equip.	63,448
	Pittsburgh	PA-03-0041	Rehabilitation of 25 trolley. etc.	2,211,272

MONTH	CITY	PROJECT	DESCRIPTION	AMOUNT
	Pittsburgh	PA-03-0041	Rehabilitation of 25 trolley, etc.	2,211,272
	Burlington	IA-03-0013	7 buses	388,128
	Topeka	KS-03-0004-1	Main. equip.	63,448
	Colorado Springs	CO-03-0005	14 buses	1,411,652
	Los Angeles (SCRTD)	CA-03-0049-1	20 mini-buses, maint. facilities	5,580,960
	San Diego	CA-03-0081	25 buses	1,474,892
	Los Angeles (SCRTD)	CA-03-0087	RUCUS	240,000
May, 1974				
	Omaha	NE-03-0004	50 buses misc., equipment	3,507,764
	Reading	PA-03-0046	sys. acq., 44 buses	986,560
	La Crosse	WI-03-0014	Sys. acq., 11 buses, gar.	1,100,720
	Chicago	IL-03-0034	2 diesel loc. 5 commuter cars	4,274,080
	Canton	OH-03-0013-3	Cost escalation	122,596
	Detroit (SEMTA)	MI-03-0029	3 sys. acq.	2,872,800
	Lafayette	IN-03-0007	Cost escalation gar., shelter	364,448
	Long Beach	CA-03-0072	32 buses	2,099,904
	Rochester	NY-03-0057	10 buses & 6 RUCUS	495,016
	Boston (MBTA)	MA-03-0022-1	25 light rail cars	7,638,486
	Duluth	MN-03-0010	20 buses	907,160
	Poughkeepsie	NY-03-0039-2	Cost escalation	30,984
	Sioux City	IA-03-0003-2	Cost increase	66,548
	Boston (MBTA)	MA-03-0007-02	Signaling	5,424,476
	Pittsburgh	PA-03-0041-1	85 buses, Park lot	3,299,016
	Seattle	WA-03-0016	605 buses & misc.	36,307,496
	Peoria	IL-03-0037	10 bus misc. equip.	460,552
	Youngstown	OH-03-0025-1	Cost escalation	237,880
	Anderson	IN-03-0018	10 buses, garage	674,280
	Maple Heights	OH-03-0027	11 buses	454,068
	Birmingham	AL-03-0004	25 buses/garage/buy	1,927,040
	Santa Rosa	CA-03-0079	6 buses	227,672
	Topeka	KS-03-0006	10 buses	365,288
	Jacksonville	FL-03-0025	Maint., facilities, 66 bus replace.	2,775,600
	Orange County	CA-03-0064-1	67 buses	1,530,720
	Madison	WI-03-0015	27 buses, rel. supp. equip.	1,235,392
	Salt Lake City	UT-03-0004	Sys. acq., 38 buses	1,764,384
June, 1974	Bremerton	WA-03-11-1	Cost escalation	22,364
	Baton Rouge	LA-03-14	20 buses	1,000,072
	Kansas City	IT-03-24	50 buses, shelters radios	2,403,360
	Honolulu	HI-03-04	40 buses,land,supp. equip.	10,054,080
	San Francisco (MUNI)	CA-03-78	155 buses, 135 trolleys 20 L.R. vehicles	20,557,376
	San Francisco (MUNI)	CA-03-22-4	Cost increase	6,584,128
	Rome	NY-03-60	5 buses	154,000
	Akron	OH-03-23-1	Cost escalation	116,252
	Sheboygan	WI-03-13	Sys. acq., 23 buses	1,481,600
	Anchorage	AK-03-03	16 buses, misc., equip.	1,111,864
	Dayton	OH-03-26	64 trolleys, 10 buses etc.	4,342,528
	Portland	OR-03-08	Transit Mall	720,568
	Cleveland	OH-03-22	160 buses, etc.	7,076,000
	Eau Claire	WI-03-16	11 buses	890,000
	Key West	FL-03-21-1	Land, garage	242,404
	Oceanside	CA-03-74	24 buses	862,400
	Tucson	AZ-03-03	61 buses	2,496,720
	Kenosha	WI-03-07	24 buses	1,484,776

MONTH	CITY	PROJECT	DESCRIPTION	AMOUNT
	Minneapolis - St. Paul	MN-03-12	189 buses, misc. impr.	10,003,200
	Houston	TX-03-21	Sys. acquisition	4,240,000
	Beaumont.	TX-03-14	Maint/Admin. fac. 25 buses	2,253,204
	Los Angeles (SCRTD)	CA-03-90	300 new buses,support equipment,main fac.'s	28,871,920
	Albuquerque	NM-03-02	6 buses	256,208
	Palm Beach	FL-03-20	8 buses, gar. rehab.	880,800
	Lansing	MI-03-28	9 buses, rel. supp.equip.	450,340
	Eugene	OR-03-7-1	3 changes in bus size	427,476
	Tupelo	MS-03-01	6 buses	207,400
	Louisville	KY-03-07	Sys. acq. 110 buses	8,796,080
	New York	NY-03-17	1 Staten Island Ferry	12,146,480
	Lynchburg	VA-03-06	Sys. acq., 17 buses	986,560
	Scranton	PA-03-42	33 buses, misc. equip.	1,643,960
	Tulsa	OK-03-4	25 buses, other impr.	1,363,872
	Cumberland	MD-03-07	Sys. acq., 8 buses,misc.	602,712
	Ann Arbor	MI-03-23-1	Construct garage	1,959,184
	St Louis	IT-03-14	200 buses, misc., impr.	10,664,032
	Hartford	CT-03-04	Commuter rail cars	49,580,000
	Austin	TX-03-23	18 buses, misc. impr.	933,800
	Manchester	NH-03-02	Bus garage	1,471,572
	Baltimore	MD-03-08	205 buses, support equipment	9,794,924
	Derby	CT-03-11	9 mini-buses,gar.	301,312
	Washington D.C.	IT-03-22	175 buses	8,996,800
	San Francisco (GGBH)	CA-03-65	32 buses, etc.	1,530,320
	Buffalo	NY-03-47-01	1 garage	1,552,000
	Clearwater	FL-03-33	4 buses	216,304
	Bloomington - Normal	IL-03-39	20 buses, buy gar.misc.	1,114,984
	Oak Lawn	IL-03-33	20 buses	956,720
	Dallas	TX-03-22	50 buses	2,148,600
	Santa Clara Cty.	CA-03-61-1	Cost escalation	114,700
	Atlanta	GA-03-08-1	50 mile subway grade etc	50,400,000
	San Francisco (GGB)	CA-03-36-03	Cost esc. shelter	11,487,732
	Baltimore (MD DOT)	MD-03-04-01	Phase I Sec. A rt.,con.	50,160,000
	Trenton (NJ DOT)	NJ-03--14	Erie-Lackawanna	3,283,500
	Volusia	FL-03-22	28 buses, main. fac.	1,317,600
	Boston (MBTA)	MA-03-5-3	Haymarket N.	1,000,000
	Dallas-Ft Worth	TX-03-13	SURTAM 50 buses	2,073,712
	San Francisco (BART)	CA-03-69-1	Acceptance testing/minor system mod.	7,224,800
	Boston	MD-28-1	Trolley cost escalation	1,133,360
	New Orleans	LA-03-13	Park and Ride	991,652
	Boston	MD-18	125 buses	5,496,500
	Philadelphia	PA-03-52	Chestnut Street Busway	5,937,168
	New York (MTA)	NY-03-35-1	Long Island R.R.	3,985,468
	Boston (MBTA)	MA-03-19	Engineering for Power	2,115,836
	Tallahassee	FL-03-30	Sys. acq. 46 buses	3,393,312
	Gainesville	FL-03-24	Sys. acq., 32 buses	2,277,732
	New York (NYCTA)	NY-03-51	Arch Ave. Jamacia El.	51,120,000
	Chicago (CTA)	IL-03-04	500 buses 100 rap. transit cars/&c	70,000,000
	Chicago (CTA)	IL-03-24-03	Cost escalation	6,407,932
	Philadelphia	PA-03-43	Ext. to Airport	30,000,000
	Philadelphia	PA-03-50	Commuter rail & trolley improvements	9,000,000
	Wilmington			
	Chicago	IL-03-35	Sys. acq. 180 buses storage facilities	5,274,208

BART TECHNICAL PROBLEMS

Senator CASE. What is the situation with BART in light of its technical problems?

Mr. HERRINGER. Well, the latest report that we have is that BART will begin operation across the bay through the Trans-Bay tube in September of this year, two months from now. I anticipate that once BART does begin operating through the tube that it will lose public attention, and the problems will fade. BART will be a successful installation. They have also had problems with their cars, and they are working that out with their manufacturer. I am optimistic about BART.

OPERATING DEFICIT

Senator CASE. What is BART's financial condition?

Mr. HERRINGER. They are currently running a deficit, and I believe the annual rate is about $15 million a year deficit. They are working in California, with the State, and local bodies, to develop a source of financing for this deficit. I assume if they do not receive such a source they will either have to increase the fare or shut down.

UMTA AID TO BART

Senator CASE. They are making a number of technical changes now as a result of the problems they have been having. Are these being paid for wholly or only in part by the Federal Government?

Mr. HERRINGER. In part by the Federal Government. We have funded some of the contracts and some of them have been paid for locally.

Senator CASE. You estimated this morning that around $300 million has been invested so far in BART.

Mr. HERRINGER. That is correct.

Senator CASE. Can you provide a table for the record showing what would go into capital grants and what might be related to the technical problems?

Mr. HERRINGER. Yes. Of course, it is all capital grants.

[The information follows:]

UMTA grants to BART

[Dollars in millions]

Capital assistance:	
Purchase of 450 rapid transit cars, and construction projects needed to complete the system	$292.6
Correction of problems with the transit cars and train control system	5.4
Research, development and demonstration:	
Purchase of 10 prototype cars	5.0
Development of automatic fare collection equipment	1.1
Total	304.1

UMTA PARTICIPATION IN BART

Senator CASE. There is a portion to deal with——

Mr. HERRINGER. To deal with changes that are required technically, that is correct.

I would point out too that $300 million, unlike our current projects, only represents perhaps 20 percent of the total cost of BART, and the other 80 percent has been borne by the people in San Francisco.

DENVER PRT SYSTEM

Senator CASE. I just have two more questions. What will the cost of the Denver project be? What I am referring to is the one that may ultimately flow from the Broomfield test.

Mr. HERRINGER. After the Broomfield——

Senator CASE. Yes; what they have in mind.

Mr. HERRINGER. $1.6 billion would be the total, the current estimated cost of the Denver PRT system, of which $400 million would be local, and the remainder would be Federal. That is the expectation in Denver.

There is no—I will repeat something I said this morning—there is absolutely no commitment to Denver that we would participate in such a project. Proceeding with the PRT test project should not be read as a commitment to that, either. It is quite independent of the Denver situation, and as I mentioned Denver is analyzing alternatives right now under a contract to TRW. They are looking at all ways in which they might solve their transportation need and problems.

IDA STUDY OF PRT

Senator CASE. Have you heard anything about a study of PRT that was conducted by the Institute for Defense Analysis?

Mr. HERRINGER. No.

Senator CASE. Are you aware of any such study?

Mr. HERRINGER. No, I am not aware of such study.

QUESTIONS SUBMITTED BY SENATOR CASE

Senator CASE. I am going to have you answer the rest of the questions for the record, we will stand in short recess.

[A brief recess was taken.]

[The questions and answers follow:]

Question. I understand you are doing some work with OEO on transportation stamps. Would you tell us about this project and what you may be planning in the future?

Answer. The project you are referring to, Senator, is the West Virginia TRIP program which involves the participation of OEO, HEW, DOT, and several State and local organizations.

TRIP, which is the acronym for Transportation Remuneration Incentive Program, actually consists of two distinct elements. One is the transportation stamp system, which will operate much like a food stamp program and is being funded primarily by OEO. The second is the improvement and development of new public transportation services in West Virginia. It is in this area that several of the Department's resources will be used; for example, planning funds will be provided through our technical studies program, and capital equipment will be provided by our capital assistance program. The Federal Highway Administration will also be participating in the TRIP project through the Rural Demonstration Program authorized by Section 147 of the Federal-Aid Highway Act of 1973.

In the future, we are planning on demonstration activity in the area that we call "provided bonuses." Under this scheme, tokens provided to specific groups

would be redeemable at premium rates by the transport service provider. The rates should be high enough to create an incentive for operators to take extra steps to compete for the patronage of persons using the tokens. The special services may consist of supplementing, expanding, or modifying service, introducing new services or modes, altering vehicles, customizing the service based on client need and destination requirements, and introducing other specialized features tailored to each user group targeted in the demonstration.

A demonstration of this type may well be one that we operate in concert with the TRIP program in an urban area in West Virginia.

Question. Would you please bring me up to date on the New Jersey application for funds to re-electrify the Erie-Lackawanna Railroad's Morris-Essex line?

Answer. We expect to be able to reach a decision on the State of New Jersey's application for a grant to re-electrify the Erie-Lackawanna Railroad's Morris-Essex line during the first half of fiscal year 1975 and hopefully by the end of September. The application calls for the purchase of 200 commuter rail cars, in addition to electrification work. My staff will be meeting with the New Jersey DOT on July 31, 1974, to resolve several issues, including the type of propulsion system to be used, seating configurations on the cars, and an implementation plan for conversion of power from 3000 volts DC to 12,500 volts AC. We would expect that all outstanding issues can be resolved subsequent to that meeting.

Question. London's Victoria subway line also is highly automated and the report I get is that it is having few, if any, problems. Why is this system doing better than BART? Conceivably, does it have anything to do with the use of shoe brakes which continually clear the wheels, thus permitting electronic information to penetrate to the train?

Answer. London's Victoria Line has operated with few significant problems. The use of shoe brakes has improved the electrical contact between wheel and track. However, the success of the Victoria Line depends more on the fact that the system operates completely underground where outside weather and extraneous electrical signals provide no interference. In addition, should the automatic train control system break down, the trains can be operated manually at full speed.

Much of the BART system operates above ground. In order to improve contact between car wheels and track, BART experimented with wheel scrubbers last year. This improved electrical contact somewhat but outside radio signals and wet weather continued to affect the train control system. Use of wheel scrubbers has since been discontinued as a fix to BART's train control problems.

It should be noted that BART trains cannot be run manually above 25 miles per hour. This severely affects operations when the automatic train control system is not operating properly.

Question. You have been pressing for more use of buses. Is there any problem in getting buses off the assembly line at a fast enough rate to meet the need?

Answer. There has been a gradual increase during the past few years in the demand for transit buses. The manufacturers have increased their capacity to handle the demand. Last year, a new manufacturer, AM General, entered the industry. GMC, the largest manufacturer, recently increased its standard daily capacity from six to 10 units. The second largest manufacturer, The Flxible Company, will soon open a second production facility, increasing its daily capacity from six to 10 units. We expect that the industry's production capacity will continue to meet the demands for new buses.

Question. What is the cost of fixed guideway per mile compared to that of rail and highway?

Answer. The estimated cost of a large PRT fixed guideway system (i.e., 200 miles of single lane guideway, 50 stations, and 2,000 vehicles) is approximately $5 million per single lane mile. The estimated cost of the guideway alone, including electrification and instrumentation for automation is approximately $3 million per single lane mile. The above costs assume elevated structures installed in a medium density city. In the event that the guideway would be located in a dense central business district, tunnelling might be required, or the right-of-way would penetrate building envelopes. In this case, the cost per guideway mile in this area could be very much higher. The cost of the Dallas-Fort Worth PRT System is approximately $50 million. This system includes 13.5 miles of single lane guideway, 68 vehicles, and 51 station stop locations. The cost per single lane mile is $3.7 million, based on total system cost of $50 million.

The estimated cost of elevated highway varies between $2.5 million to $4 million per lane per mile, exclusive of land acquisition.

The estimated cost of a rail rapid transit fixed guideway system based on the Delaware River Port Authority's Lindenwold Line is approximately $9.0 million per track mile ($4.5 million per single track mile) or a total of $94 million for a 10.5 mile double track system. This $94 million includes right-of-way acquisition land for parking lots, rehabilitation of 6 stations, 6 new stations, 75 cars, electrification, 8 substations, maintenance shop and automatic train control system.

The estimated cost of a rail rapid transit fixed guideway system based on the Washington Metro costs are $15.2 million per single lane mile. The cost estimate, in FY 1973 dollars, includes 196 lane miles of guideway, of which 94 miles are tunnelled and 102 miles are at-grade, and 86 stations, and 556 cars.

Question. What is your evaluation of the Washington Metro? Is it well planned to meet the needs of its service area, or do you find weaknesses?

I have heard it suggested that there is too much tunnelling being done on Metro. What is your evaluation?

Answer. In general, we are well satisfied that Metro will meet the commuting needs of the region, especially for CBD-oriented trips.

I am not aware of a suggestion that Metro is doing too much tunnelling. Decisions on tunnelling vs. aerial structure or at-grade construction must be made on a route-by-route basis. The character of the area being traversed, nature of the geology, and practicality of alternatives all contribute to the decision as to whether or not to tunnel.

Question. I note you do not presently have standards for bus propulsion performance including energy use and emissions. What are your plans for developing such standards?

Answer. Standards for emissions are presently set by Environmental Protection Agency. New buses being produced meet the EPA standards and we expect that they will continue to meet them in the future.

City transit buses use diesel engines almost exclusively for propulsion and this type of engine is highly efficient as far as fuel consumption is concerned. These engines are also produced for the trucking industry and are subject to upgrading periodically through the normal commercial competitive process.

The Transbus specifications require increased power for improved performance but we do not have any immediate plans to establish standards.

Question. What future do you see for the State-of-the-Art Car?

Answer. The State-of-the-Art Cars were designed and built as a demonstration of what could be done with near-term technology to improve rail transit vehicles. Since there are compromises in the design to meet the requirements of operation over five rail properties, we do not foresee SOAC as a prototype or standard car. Rather, we hope that the wealth of test data and first hand operational experience will convince the various rail authorities to incorporate SOAC-like technology in future car purchases.

This has happened already with Boston and San Francisco utilizing the chopper propulsion system on their new light rail vehicles. Similarly, the SOAC propulsion system is being used on the experimental Energy Storage and Gas Turbine/Electric cars.

After the current five-city operation, SOAC will be used to evaluate a set of new even more advanced subsystems.

Question. Mr. Herringer, you stated in regard to PRT that "you can control development better with a fixed guideway than you can with buses." Please explain what you have in mind.

Answer. Fixed guideway systems attract high density development along their rights-of-way and thus minimize urban sprawl. This attraction can be attributed to the fact that fixed guideways are installed permanently, and once in place, represent visible and permanent commitment by the community to providing public transportation to that corridor. Bus service is highly flexible, and this very flexibility allows the change of routes to be implemented easily by policy decision.

Question. Please compare the physical and performance characteristics of the Transbus and Britain's Leyland bus.

Answer. The major physical differences between the Transbus prototypes and the British Leyland National buses are in the floor heights, floor arrangements, and seat configurations. Transbus has a flat floor 17 inches above the pavement with seats cantilevered from the walls and, in the prototypes, an average seating capacity of 42. Leyland has a two level floor with the front 25 inches above the

pavement and a 10 inch step up to the rear deck. The seats have the conventional floor supports and have a seating capacity of 40 to 48.

The exterior dimensions are also different with the Leyland being higher (128.3 inches vs. 105 for Transbus), shorter (37.25 feet vs. 40 feet for Transbus) and not as wide (98.5 inches vs. 102 inches).

Performancewise, the Transbus prototypes incorporate engines varying from a 375 horsepower diesel to a 280 horsepower turbine engine. In contrast the Leyland offers a 200 and 180 horsepower diesel engine.

Nearly every detail of the Leyland is different from the Transbus prototypes but the above differences will serve to contrast the major design features.

Question. I note that commuters in the Virginia suburbs are trying to get rail transportation service to Washington via existing rail systems.

Isn't this something you can support at a relatively minimal cost? What are you doing to encourage this type of service in Virginia and elsewhere?

Answer. In 1971, UMTA sponsored the Washington Metropolitan Area Commuter Rail Study, a report prepared by a consultant, Carl Englund. The study concluded that a regional commuter rail system for the Washington area could be implemented at relatively low cost. UMTA has always stood ready to fund responsible local agencies applying for capital funds for such a system. Operating costs, although modest, would require local funding.

To date, only the Maryland DOT has submitted a preliminary application to improve the existing services.

JUSTIFICATIONS

Senator CASE. The budget justification for Urban Mass Transportation will be inserted in the record at this time.

[The justification follows:]

Justification

ACTIVITY 1: Capital Facilities Grants--$1,225,000,000, an increase of $353,000,000 over the $872,000,000 level in 1974.

Comparison of Investments by Mode
(in thousands of dollars)

Mode	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Bus Transit	$229,075	$298,000	$ 400,000
Commuter Railroad	56,309	170,000	140,000
Rail Rapid Transit	514,490	380,000	665,000
Other Mass Transit	25,814	24,000	20,000
Other	$825,691	$872,000	$1,225,000

Investment by Population Group
(in thousands of dollars)

Population Group	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Under 250,000	$ 5,928	$ 25,000	$ 41,000
250,000 to 1,000,000	36,351	71,000	212,000
Over 1,000,000	783,412	776,000	972,000
Total	$825,691	$872,000	$1,225,000

GENERAL

Transit has long suffered from an inability to attract capital needed to maintain a vital industry. Factors which contributed to the problem were numerous. Perhaps the major index of the plight of the industry is the decline of revenue passengers from 23 billion in 1945 to about 5.3 billion in 1972.

Commuter railroads were experiencing similar patronage declines. Wholesale abandonments of commuter services were being considered by the operators.

Congress recognized this as a national problem in passing the Urban Mass Transportation Act of 1964. Sections 3 and 4 of that Act authorized a program of matching grants to States and local public agencies to assist in financing public transportation facilities and equipment. The 1970 amendments to the Act (Urban Mass Transportation Assistance Act of 1970) provided a quantum increase in new budget authority of $3.1 billion. An additional $3 billion in budget authority was provided by the Federal-Aid Highway Act of 1973.

Passage of the 1973 Federal-Aid Highway Act also opened a new source of assistance to transit by authorizing substitution of transit projects for interstate route segments, and allowing urban systems authorizations to be used for transit projects.

Objectives

There are three objectives of the capital grant activity:

1. Achievement of land-use patterns and/or environmental conditions which effectively contribute to the physical, economic, and social well-being of urban communities.

   This objective entails improving land-use patterns and transportation networks so that each effects the other favorably, in pursuing local development objectives. The ultimate intent is to reduce or minimize the need for transportation facilities, the urban space demands made by them, and the energy consumed in urban transportation. It encompasses system design to maximize efficiency in the use of transportation modes, and mobility for all population groups.

2. Improve mobility by improvement in overall traffic and reduction of time-in-travel about urban regions in peak hours of travel demand.

   This objective seeks the relief of travel constraints caused by capacity limitations during peak hours of demand. It makes the number of people moved for a given cost, rather than the vehicles moved, the basic measure in deciding on appropriate solutions, and of transit options versus highway options, and requires attention to non-capital, intensive options by local authorities (i.e., use of regulatory authority, consideration of parking supply, etc.) to effect demand.

3. Provide mobility to those segments of the urban population which may not have access to the direct use of motor vehicles. This objective is directed at the transportation needs of the young, aged, poor, handicapped, unemployed, and secondary workers.

Summary of Past and Planned Activities

Between the approval date of the first capital grants in February 1965 and December 1973, there have been 373 projects approved. Total project costs were $4.0 billion with UMTA providing $2.4 billion (60%) of the capitalization and the local entities contributing $1.6 billion (40%). These investment ratios indicate that the State and localities have made decisions which result in available resources being allocated toward the betterment of transit services.

The $1,225 million level for this activity in fiscal year 1975 will enable the Urban Mass Transportation Administration to meet the most urgent demands for participation in transit improvements and extension projects and provide continuity with the efforts started in fiscal year 1971 under the 1970 amendments to the Act that provided the $3.1 billion budget authority.

Purchase of New Buses

The greatest number of projects in capital grants are for the purchase of new buses. Current estimates place the purchase of new buses with UMTA assistance at 5,000 for fiscal year 1974. As of December 1973, this activity has assisted in the purchase of 14,852 new buses for nearly 200 transit properties. Among the largest purchases were Chicago (1,070), Philadelphia (950), Los Angeles (758), Minneapolis-St. Paul (667), San Francisco (630), Washington (620), Pittsburgh (580), Boston (510). On the other hand, smaller urban areas such as Frankfort, Kentucky (2), Juneau, Alaska (3), and Washington, Indiana (3) have also been assisted.

One of the primary purposes of establishing the UMTA program was to preserve or stabilize existing transit service, and to this end UMTA has assisted cities in the acquisition of private companies that can no longer realize a profit or a return on investment. When an urban area decides to take over a transit system, three primary factors exist: (1) the private operator is no longer able or willing to provide an adequate level of public transportation service, or has made a decision to leave the industry altogether; (2) there are no other privately owned systems able or willing to undertake the service; and (3) the urban area has decided that transit is an essential public service which must be sustained through the allocation of available local revenues.

Preservation of Transit Service

For fiscal year 1975 an estimated $10 million in UMTA funds will be required to preserve existing transit services in urban communities regardless of population. This estimate is based solely on the preservation of the service, and does not include improvements to the service which are generally accomplished concurrently with the preservation.

Purchase of Rail Vehicles

While new bus purchases represent the greatest number of projects, a much larger dollar investment has been in new rail vehicles. A total of 3,359 rail car commitments have been made under the capital grant activity, the largest being the purchase of 1,145 rapid transit cars for the New York Metropolitan Transportation Authority and New York City Transit Authority and the smallest being 14 commuter railroad cars for Southeastern Pennsylvania Transportation Authority which are leased to the Reading Company in the Philadelphia area. The total number of rail vehicles planned for UMTA-assisted purchase in fiscal year 1975 is estimated to be 390. This includes both commuter railroad and railrapid transit cars.

Extension of Rapid Transit Systems

A number of rapid transit extensions have been built or are in the process of construction. Major extensions have been made to the Chicago Transit Authority's rapid transit lines, the MBTA in the Boston area and in the Cleveland System, all of which have been successful. UMTA is also participating in some aspects of the construction of the new Bay Area Rapid Transit System in San Francisco. Initial operation of this new system began in September 1972, and service is now provided on all but about 5 miles of the system. UMTA has assisted BART with about $300 million (of the $1.5 billion project) since 1966. Currently planned extensions, for which some initial Federal assistance will probably be sought in FY 1975, include those to the Chicago Transit Authority and the Delaware River Port Authority's Lindenwold Line. Already applied for is an extension of the PATH System to Plainfield, New Jersey.

Major rail rapid systems have proven to be very successful. Revenue passengers using the new services are substantial and have exceeded the early rider estimates. Four of the five new rail-rapid services were projects undertaken with UMTA participation and the fifth was constructed without UMTA participation. A listing of the daily revenue passengers on the new extensions aided by UMTA are as follows:

	Daily Revenue Passengers (in thousands)
Cleveland	
Airport service	10.0
Chicago	
Kennedy	60.1
Dan Ryan	108.6
Boston	
South Shore	19.5

The Massachusetts Bay Transportation Authority South Shore extension was opened early in September 1971. Daily revenue passengers carried during the first month approximated the average number projected after a year in service.

The extensions in Chicago have been experiencing upward trends in daily revenue passengers since their opening. These increases continued after the Chicago Transit Authority increased its basic fare.

The Cleveland Transit System's Airport extension has experienced a decline in revenue passengers. It is believed that the decline is related in part to the drop in airline passengers.

The fifth major new rail rapid service, the Lindenwold Line, in the New Jersey suburbs of Philadelphia, was a project undertaken by a local public body, without UMTA financial assistance. The average number of daily revenue passengers on this line is 42,000.

New Systems

UMTA plans to continue funding the Early Action Program in Pittsburgh, which includes express busways and the Transit Expressway Revenue Line, which was developed with assistance from UMTA's RD&D activity beginning with a Demonstration Grant approved in FY 1973.

Initial capital grant fundings have also been approved for new systems in Baltimore and Atlanta.

Major Activities

Since February 1965 the UMTA capital assistance activity has participated in the following:

1. The preservation of 118 cities' bus transit systems.
2. The purchase of 14,852 buses.
3. The purchase of 2,120 rail rapid transit cars, 230 light rail cars, 1,009 commuter railroad cars.
4. The modernization of rail rapid stations in five cities.
5. The construction or modernization of 76 bus garages and service facilities.

Applications Pending

There is a substantial inventory of applications and amendments pending under the Capital grant activity. As of January 31, 1974, a total of about $5.4 billion in UMTA funds were requested with a local contribution making an estimated total investment of $6.7 billion, representing 222 preliminary and final applications and amendments to active projects. It is estimated in the two-year period, FY 1974 and 1975, projects will be approved with UMTA contributing about $2.1 billion for a total investment of $2.6 billion. The FY 1975 estimate totals $1.2 billion in UMTA share of approved projects.

In FY 1975, capital grants will be constrained to an UMTA participation of $1.2 billion which appears to be a reasonable level of investment in capital improvements for the 12-month period.

CAPITAL GRANT ACTIVITY

Program Products

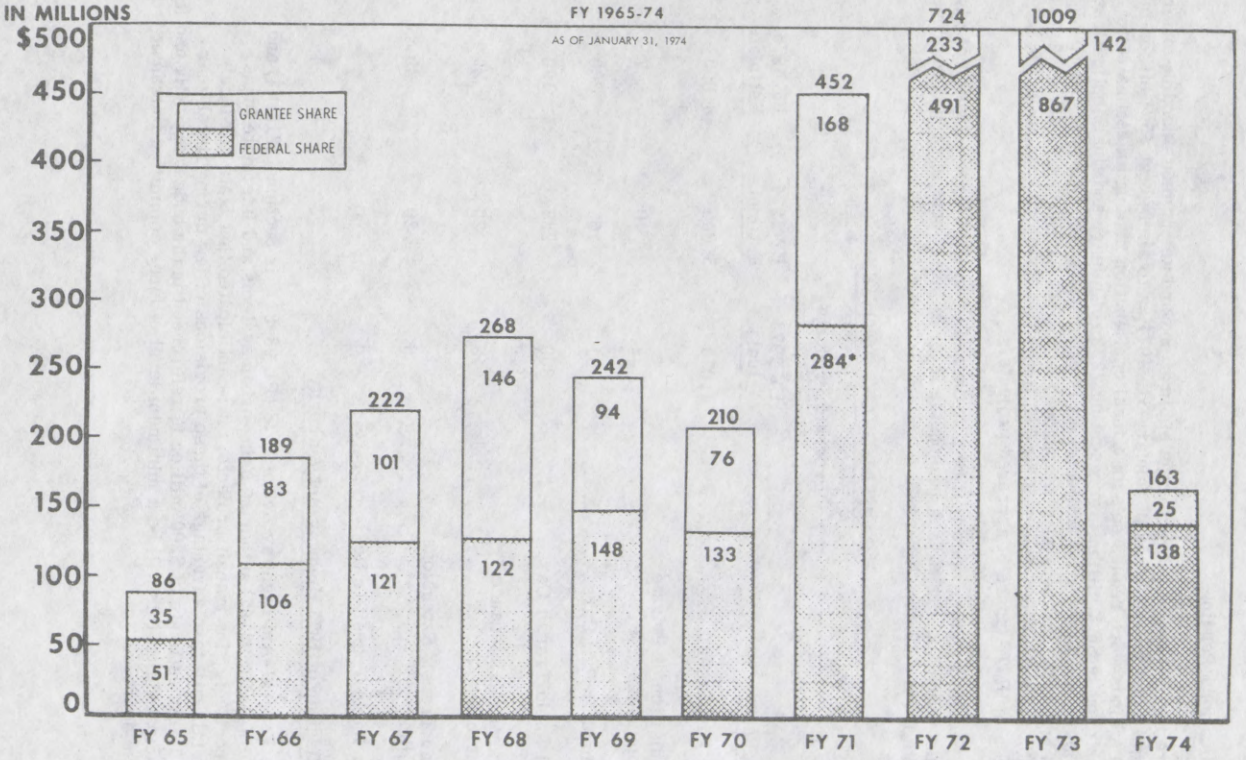
Product	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Bus Purchases	4,072	5,000	6,000
Acquisition of Private Companies	22	10	7
Commuter Rail Cars	51	105	200
Rail Rapid Transit Cars	800	225	190
Garages/Maintenance Facilities	13	20	25
Rapid Transit Extensions (miles)	6	20	30
New Rapid Transit (miles)	78	...	...

Utilization of 1973 Highway Act Authority

The Federal-Aid Highway Act of 1973 (PL 93-87), in Sections 121(a)(1) and 137(b)(4) (PL 93-87) authorize using urban systems and Interstate funds, respectively, for transit projects. It is anticipated that State and local officials will take advantage of these provisions of law during fiscal year 1975. An estimate of $200 million is referenced in the budget appendix and it is anticipated that this will be a minimum level of funds committed to transit from these sources.

CAPITAL GRANTS

Cost of Projects and Amendments Approved



*Includes 27.6 million dollars in Federal funds for projects approved in FY'70 contingent on funding in FY'71.

BUS TRANSIT SYSTEMS STABILIZED OR PRESERVED IN 96 CITIES

SINCE FEBRUARY, 1965

AS OF JANUARY 31, 1974

STABILIZED [1]

BIRMINGHAM, ALABAMA
LITTLE ROCK, ARKANSAS
TUCSON, ARIZONA
LOS ANGLES CALIFORNIA (SUBURBAN)
SAN DIEGO, CALIFORNIA
SAN JOSE, CALIFORNIA
SANTA CRUZ, CALIFORNIA
DENVER, COLORADO
PUEBLO, COLORADO
WASHINGTON, D.C.
WILMINGTON, DELAWARE
CLEARWATER, FLORIDA
FORT LAUDERDALE, FLORIDA
JACKSONVILLE, FLORIDA
PENSACOLA, FLORIDA
ATLANTA, GEORGIA
HONOLULU, HAWAII
DECATUR, ILLINOIS
ROCKFORD, ILLINOIS
ROCK ISKAND, ILLINOIS
FORT WAYNE, INDIANA
DAVENPORT, IOWA
DESMOINES, IOWA
IOWA CITY, IOWA
TOPEKA, KANSAS
BATON ROUGE, LOUISIANA
SHREVEPORT, LOUISIANA
PORTLAND, MAINE
BALTIMORE, MARYLAND
SALISBURY, MARYLAND
BOSTON, MASSACHUSETTS
(NORTHERN AND SOUTHERN SUBURBS)
DETROIT, MICHIGAN (SUBURBAN)
DULUTH, MINNESOTA
MINNEAPOLIS-ST. PAUL, MINNESOTA
BILLINGS, MONTANA
LINCOLN, NEBRASKA
OMAHA, NEBRASKA
TRENTON, NEW JERSEY
ALBUQUERQUE, NEW MEXICO
ALBANY, NEW YORK
BUFFALO, NEW YORK
NASSAU COUNTY, NEW YORK
ROCHESTER, NEW YORK
SYRACUSE, NEW YORK
UTICA, NEW YORK
WINSTON-SALEM, NORTH CAROLINA
CANTON, OHIO
CINCINNATI , OHIO
COLUMBUS, OHIO
DAYTON, OHIO
TOLEDO, OHIO
YOUNGSTOWN, OHIO
EUGENE, OREGON
PORTLAND, OREGON
WILLIAMSPORT, PENNSYLVANIA
PROVIDENCE, RHODE ISLAND [3]
CHATTANOOGA, TENNESSEE
NASHVILLE, TENNESSEE
CORPUS CHRISTI, TEXAS
FORT WORTH, TEXAS
WACO, TEXAS
SALT LAKE CITY, UTAH
NORFOLK, VIRGINIA
RICHMOND, VIRGINIA
SEATTLE, WASHINGTON (SUBURBAN)
SPOKANE, WASHINGTON
CLARKSBURG, WEST VIRGINIA
HUNTINGTON, WEST VIRGINIA
GREEN BAY, WISCONSIN
MADISON, WISCONSIN
WAUSAU, WISCONSIN
KANSAS CITY, MISSOURI-KANSAS

PRESERVED [2]

PHOENIX, ARIZONA
BAKERSFIELD, CALIFORNIA
MODESTO, CALIFORNIA
SAN BUENAVENTURA, CALIFORNIA
SANTA ANA, CALIFORNIA
SANTA BARBARA, CALIFORNIA
ENGLEWOOD, COLORADO
DANBURY, CONNECTICUT
KEY WEST, FLORIDA
PALM BEACH, FLORIDA
ORLANDO, FLORIDA
AURORA, ILLINOIS
JOLIET, ILLINOIS
SPRINGFIELD, ILLINOIS
LAFAYETTE, INDIANA
MUNCIE, INDIANA
RICHMOND, INDIANA
CEDAR RAPIDS, IOWA
SIOUX CITY, IOWA
FRANKFORT, KENTUCKY
ALEXANDRIA, LOUISIANA
LAFAYETTE, LOUISIANA
LANSING, MICHIGAN
SAGINAW, MICHIGAN
KALAMAZOO, MICHIGAN
BATTLE CREEK, MICHIGAN
HATTIESBURG, MISSISSIPPI
BROOME COUNTY
(BINGHAMTON), NEW YORK
POUGHKEEPSIE, NEW YORK
ASHEVILLE, NORTH CAROLINA
ASHTABULA, OHIO
HAMILTON, OHIO
OKLAHOMA CITY, OKLAHOMA
TULSA, OKLAHOMA
SALEM, OREGON
ERIE, PENNSYLVANIA
NEW CASTLE, PENNSYLVANIA
SUMTER, SOUTH CAROLINA
AMARILLO, TEXAS
BURLINGTON, VERMONT
MARTINSVILLE, VIRGINIA
STAUNTON, VIRGINIA
BRISTOL, VIRGINIA-TENNESSEE
BREMERTON, WASHINGTON
VANCOUVER, WASHINGTON
WHEELING, WEST VIRGINIA
FOND DU LAC, WISCONSIN

1/ Funding of public takeover through Federal grant.
2/ Funding new buses to systems that would have collapsed without grant.
3/ Loan

URBAN MASS TRANSPORTATION ADMINISTRATION

MAJOR PURCHASES OF BUSES*

SINCE FEBRUARY, 1965

AS OF JANUARY 31, 1974

NO. OF BUSES	CITY
1,070	CHICAGO, ILLINOIS
950**	PHILADELPHIA, PENNSYLVANIA
758	LOS ANGELES, CALIFORNIA
667	MINNEAPOLIS -ST.PAUL MINNESOTA
630**	SAN FRANCISCO, CALIFORNIA
620	WASHINGTON, D.C.
580	PITTSBURGH, PENNSYLVANIA
510**	BOSTON, MASSACHUSETTS
490	ATLANTA, GEORGIA
470	BALTIMORE, MARYLAND
360	DALLAS, TEXAS
330	PORTLAND, OREGON
305	DETROIT, MICHIGAN
300	OAKLAND, CALIFORNIA

* Federal funds have assisted in the purchase of 14,985 new buses in 263 projects for 160 transit properties.

** Includes trolley coaches (110 Philadelphia, 210 San Francisco, 50 Boston).

RAIL VEHICLES PURCHASED

AS OF JANUARY 31, 1974
SINCE FEBRUARY, 1965

RAIL RAPID TRANSIT CARS (INCLUDING LIGHT RAIL)

1145	NEW YORK CITY TRANSIT AUTHORITY
450	SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
306	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
250	CHICAGO TRANSIT AUTHORITY
80	SAN FRANCISCO MUNICIPAL RAILWAY
45	DELAWARE RIVER PORT AUTHORITY
44	PORT AUTHORITY, TRANS-HUDSON CORPORATION
30	CLEVELAND TRANSIT SYSTEM
2,350	SUBTOTAL

COMMUTER RAILROAD CARS

389	LONG ISLAND RAILROAD
145	ILLINOIS CENTRAL GULF RAILROAD
144	PENN CENTRAL - NEW HAVEN DIVISION
130	PENN CENTRAL - PHILADELPHIA AREA
105	PENN CENTRAL - NORTH JERSEY SERVICE
36	MILWAUKEE ROAD
25	BURLINGTON NORTHERN
21	CHICAGO, SOUTH SHORE AND SOUTH BEND RAILROAD
14	READING COMPANY
1,009	SUBTOTAL
3,359	GRAND TOTAL

MILES OF RAIL RAPID TRANSIT TRACK EXTENSIONS [1]

AND NEW SYSTEMS
SINCE FEBRUARY, 1965
AS OF JANUARY 31, 1974

MILES	EXTENSIONS
15	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (BOSTON)
	(9) SOUTH SHORE EXTENSION (PARTIALLY IN OPERATION)
	(6) HAYMARKET NORTH TUNNEL AND EXTENSION
15	CHICAGO TRANSIT AUTHORITY (IN OPERATION)
	(10) DAN RYAN EXTENSION
	(5) KENNEDY EXTENSION
4	CLEVELAND TRANSIT SYSTEM - AIRPORT EXTENSION (IN OPERATION)
9	NEW YORK CITY TRANSIT AUTHORITY
	(5) SECOND AVE SUBWAY - 34TH ST TO 126TH ST.
	(4) 63RD STREET SUBWAY
43	

NEW SYSTEMS (TOTAL SYSTEM MILEAGE)

75	SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT (PARTIALLY IN OPERATION)
50	METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY
28	BALTIMORE - MASS TRANSPORTATION ADMINISTRATION
153	
196	

1/ Built or under construction

ACTIVITY 2: Technical Study Grants--$37,700,000

The request is for an increase of $100,000 over the fiscal year 1974 level of $37,600,000.

The Technical Studies Activity is distributed by category as follows:

Technical Studies
(dollars in thousands)

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Short-Range Transit Development Studies	$ 5,600	$ 7,000	$ 7,000
Long-Range Transportation Plan Development	7,600	9,000	9,000
Plan Refinement	4,300	13,000	12,000
Pre-Project Engineering	14,400	6,000	3,700
Special Studies/Evaluation	1,600	2,600	6,000
Total	$33,500	$37,600	$37,700

A $37.7 million activity level for technical studies in fiscal year 1975 will enable the Urban Mass Transportation Administration to continue:

1. To assist in urgently needed studies of bus management and operations, especially in communities faced with possible losses of all public transportation; and in similar studies aimed at general improvement in management of transit systems;

2. To help communities plan improvements to existing transit systems including the better use of buses on freeways and streets;

3. To aid major metropolitan areas in the preparation of plans for new systems, and extensions to existing rapid transit systems;

4. To assist communities in addressing the EPA Clean Air Control Strategies and the problems of special user groups such as the elderly and handicapped;

5. To provide grants for coordinated transportation systems planning; and

6. To aid in the evaluation of transit improvements in urban areas.

The Urban Mass Transportation Administration has received 415 applications and has made over 283 technical studies grants since the activity was authorized by Congress in 1966 (Section 9 of the Act). This activity covers five major categories of studies which address the six subactivities mentioned above.

"Short-Range Transit Development Studies." A level of $7.0 million in fiscal year 1975 will permit continued assistance to cities of all sizes--especially the

smaller urban areas--for studies of transit systems improvements. Studies usually result in capital grants and/or operation improvements such as integrated scheduling, fare reductions, improved public information, institutional integration, etc. These studies are of particular importance in providing the necessary planning information to address the EPA Clean Air Control Strategies. These studies also provide the needed data and analyses to properly plan for the needs of the elderly and handicapped. Lastly, these studies attempt to maximize the use of existing transportation investment (i.e., highway and transit system) by making recommendations for low-cost transportation improvements (i.e., preferential bus treatment on streets and freeways, improved intersystem transfers, etc.). The estimated level of $7.0 million for these studies compares with a $7.0 million level in fiscal year 1974, and $5.6 million in fiscal year 1973.

"Long-Range Transportation Plan Development Studies." A level of $9.0 million in fiscal year 1975 will provide for continuing UMTA support of comprehensive transportation planning programs focusing on the analysis of alternative systems. This activity is being coordinated with FHWA, FAA, and other DOT agencies through the Intermodal Planning groups and unified work programs. This level coupled with the other categories within the technical studies activity will permit nearly equal support for long-range transportation planning by UMTA and FHWA. UMTA and FHWA are currently initiating procedures to unify the planning programs. Full implementation will result at the end of fiscal year 1975. The proposed level of $9.0 million in fiscal year 1975 compares with a $9.0 million level in fiscal year 1974 and $7.6 million in fiscal year 1973.

"Plan Refinement Studies." A level of $12.0 million in fiscal year 1974 will permit continued assistance to urban areas which have defined and adopted a long-range transportation plan. This refinement activity includes expanding broad system concepts, analyzing alternative service characteristics, making technology decisions, analyzing environmental impacts of alternatives, station area development planning, financial planning, implementation staging and analysis of management alternatives. These studies are associated with long-range plans which include additions to public transportation right-of-way. This activity is expanded from the $4.3 million in fiscal year 1974 due to the increasing number of urban areas developing long-range transportation plans.

"Pre-Project Engineering Studies." A level of $3.7 million in fiscal year 1975 will provide continued assistance to urban areas which have refined implementation plans for new fixed transit facilities. Pre-project engineering activities include cost analysis of alternative line and station locating, analysis of various hardware alternatives, preparation of final environment impact analysis, engineering design of alternative components necessary for final cost analysis. The engineering activities are necessary for final project definition prior to capital assistance funding. $14.4 million was the level for this activity in fiscal year 1973 and $6.0 million is planned for fiscal year 1974. The change in the level of the pre-project engineering budget is the result of definition changes of the "Pre-Project Engineering Studies" category from fiscal year 1973 to fiscal year 1975 and is reflected in plan refinement activities.

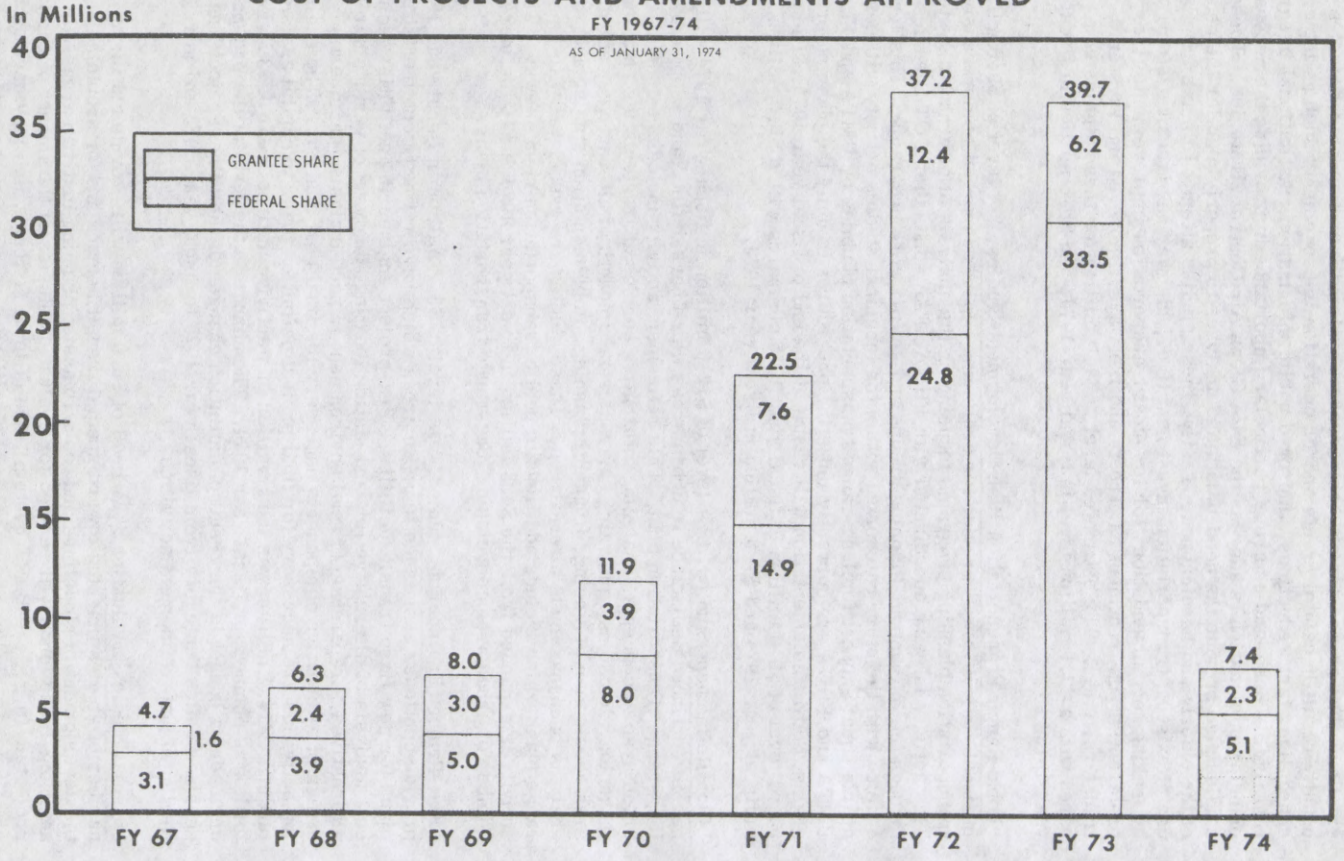
"Special Studies/Evaluation." A level of $6.0 million will provide aid for a number of studies oriented toward special transit service and/or problems, and the development of guidelines and tools to assist planning in urban areas. In addition, these funds will be used for evaluation studies of the impact of capital projects. (e.g., the BART System), and of local actions which may have national significance. Studies having national significance include fare reduction evaluation, impact of a new fixed transit system, study of the use of staggered work hours to lower peak transportation needs, recreational transit travel, and downtown circulation. The level of $6.0 million for fiscal year 1975 represents an increase over the $2.6 million planned for fiscal year 1974 and $1.6 million in fiscal year 1973.

TECHNICAL STUDIES

COST OF PROJECTS AND AMENDMENTS APPROVED

FY 1967-74

AS OF JANUARY 31, 1974



ACTIVITY 3: Research, Development and Demonstration--$75,000,000, an increase of $8,800,000 over the fiscal year 1974 activity level of $66,200,000.

I. GENERAL

Comparative Summary of Activity

The levels for the RD&D Activity are distributed as follows (dollars in thousands):

Subactivity	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
A. Mass Transportation Technology			
1. Bus Transit	$15,981	$13,129	$ 4,000
2. Rail Transit	14,537	16,000	13,250
3. New Systems	31,398	23,150	29,000
4. Software Systems	1,974	2,278	3,000
5. Systems Analysis & Evaluation	409	703	1,000
Subtotal	$64,299	$55,260	$50,250
B. Operating Demonstrations			
1. Service Development	$ 2,862	$ 2,200	$ 3,750
2. Transit Service Innovations	2,026	5,220	15,000
Subtotal	$ 4,888	$ 7,420	$18,750
C. Transit Management	$ 2,129	$ 2,920	$ 5,000
D. Planning Research	$ 202	$ 600	$ 1,000
Total	$71,518	$66,200	$75,000

As a part of a general reorganization of UMTA during the past year, the R&D activity has been reconstituted and certain activities reassigned to the new Offices of Transit Planning and Transit Management. Projects involving the development and testing of new technology continue to be managed by the Office of Research and Development (formerly the Office of Research, Development and Demonstration). Demonstration projects, where innovations involve participation by local officials as well as new methods or equipment, are assigned to the Office of Transit Planning. Projects designed to improve the management and marketing capabilities of transit operators are assigned to the Office of Transit Management. As in the past, study projects intended to provide UMTA with a better

basis for policy formulation or program evaluation are assigned to the Office of Program Planning.

Current Emphasis

UMTA is increasing its emphasis on efforts to encourage and stimulate maximum use of non-hardware related measures to improve the functioning of local transit systems. The FY 1975 budget request shows a sizable increase in this category, particulary under the heading of transit service innovations.

The Office of Research and Development will continue to aggressively pursue advanced technology systems while completing major projects to develop new bus and rail vehicles.

II. Subactivity A.

Mass Transportation Technology — FY 1975: $50,250,000
(Transportation Systems Center $10,035,000)

Federal Leadership in Transit Technology Development

The Congress has recognized the importance of Federal leadership in developing new mass transportation technology through passage of the UMTA Act and its various amendments and through continued appropriation of the funds needed to conduct a vigorous R&D effort. Federal involvement in mass transportation R&D has been necessary because of the inability of market forces in the transit industry to stimulate investment of risk capital in amounts sufficient to finance significant advances in transit technology.

An important sign of new vitality in the transit equipment industry is increasingly evident in the form of participation by major industrial firms in both R&D and production of new vehicles and equipment. This can at least partially be credited to several years of substantial Federal funding of both R&D and equipment purchases (through capital grants). The Federal Government's leadership in transit R&D will continue to be needed for two reasons: (1) the magnitude of investment required, and the attendant risks, are too great in some areas for private capital to be attracted in light of the present and projected future profits from the sale of transit equipment; and (2) the economic, social, and environmental objectives that new transit systems should serve can be fostered by the Federal Government as part of its mission to promote the general welfare, whereas more stringent tests of marketability and rate of return on investment limit industry's ability to invest in features that promote social goals without clearly increasing profitability.

Federal Disengagement

Once the case is made for Federal R&D participation in or support of a particular new transit system, at what point does the market take over and the Federal role diminish? The answer varies according to the specific case, but, in general, Federal support is no longer needed when the prior effort has been sufficient to stimulate the market to react on its own initiative.

Sometimes merely establishing a standard design specification for a given mode of urban mass transportation, an important result of UMTA R&D, can serve to stimulate the transit equipment industry to respond with a

better product at lower cost, as in the case of the Standard Light Rail Vehicle. However, in some cases, maximum Federal stimulation, including fully funded demonstrations, will be needed.

Funding Levels

As indicated in the table on page PE-42, the funding levels for the technology subactivity have been steadily decreasing, particularly in Bus Transit R&D, for which the amount budgeted in FY 1975 is reduced 75 percent from the FY 1973 level. The amount budgeted in FY 1975 for all R&D in Mass Transportation Technology, $50,250,000, is 22 percent below the FY 1973 level.

The reduced amounts estimated for technology development reflect factors such as:

-- Completion of development, testing, and evaluation of the three different Transbus prototypes;

-- Transfer of the Urban Tracked Air Cushion Vehicle projects to the Federal Railroad Administration;

-- Completion of the Morgantown PRT system;

-- A leveling off of funding required for rail rapid transit R&D with respect to advanced vehicles, vehicle subsystems, test facilities and supporting technology; and

-- Completion of the Haddonfield Dial-A-Ride experiment.

Offsetting these decreases in part will be increased levels needed for Phase II fabrication of prototype High Performance (second generation) PRT and Dual-Mode systems, both in a test track configuration, and pilot testing and further enhancement of the new urban transportation planning software being developed by UMTA's "Urban Transportation Planning System (UTPS)".

Significant Activities

Major activities during the past year or scheduled for the near future include the following:

-- Prototype Transbus vehicles of three different designs are undergoing manufacturer's tests prior to delivery to the Government for proving ground and revenue service evaluation.

-- Extensive computer simulations of bus priority system (BPS) operations in a variety of urban traffic control systems have been conducted.

-- The State-of-the-Art rapid transit cars were subjected to thorough testing on the UMTA Rail Transit Test Track. An accident--which demonstrated the structural integrity of the vehicle--slowed the testing, but the damage has been repaired and the test series will be completed shortly.

-- Flywheel energy-storage propulsion has been added to two New York City subway cars. The flywheel absorbs braking energy for reuse during acceleration. Tests at the contractor's plant have been completed and the two vehicles are now at Pueblo, Colorado for further tests on the UMTA Rail Transit Test Track.

-- Three contractors are in the midst of system definition studies of a dual mode transit system. Based upon these studies, a prototype system will be developed and tested.

-- The Haddonfield Dial-A-Ride experiment--which is nearing completion--now attracts an average of over 1,300 passengers on weekdays, with patronage having increased dramatically in response to adding more vehicles, enlarging the service area and reducing fares.

-- Reports describing the results of the post-TRANSPO 72 PRT test program were published and the results incorporated in design criteria for future PRT projects.

-- Procurement packages for the High-Performance (second-generation) PRT System Development have been prepared.

-- Over 130 public and private agencies are using UMTA developed computer programs for planning future transportation systems. Training seminars in how to use the new techniques elicited overwhelming response in several cities.

A more detailed discussion of work under this subactivity by modal category follows:

1. Bus Transit — FY 1975: $4,000,000 (Transportation Systems Center: $1,400,000)

The principal effort in Bus Transit R&D has been to develop, test and evaluate new 40-foot transit bus (Transbus) prototypes. Besides addressing this pressing need, UMTA has also undertaken R&D involving small buses, very large buses, and para-transit vehicles. Other projects include developing a kinetic-energy storage (flywheel) system for auxiliary propulsion, electronic traffic signal controls to grant buses priority over other traffic, and automatic vehicle monitoring systems to improve schedule adherence.

Financial Summary

A financial summary of funds to be reserved for the two subdivisions of the Bus Transit category follows (dollars in thousands):

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Bus Vehicle Technology	$15,801	$11,760	$2,000
Transit Operational Technology ·	180	1,369	2,000
Total, Bus Transit	$15,981	$13,129	$4,000

a. Bus Vehicle Technology — FY 1975: $2,000,000 (Transportation Systems Center·$500,000)

The following are major areas of activity:

Prototypes of Modern, 40-Foot Transit Bus (Transbus)

This project was initiated by UMTA in FY 1972 to make available new designs of standard-length urban transit buses with improved comfort, safety, ease of maintenance, operating performance and

provisions for the elderly and handicapped. The basic transit bus now being purchased with UMTA capital grant assistance was designed over 15 years ago and does not take advantage of the benefits of technology developed in the interim. Transbus project will provide three different designs, each thoroughly tested and evaluated, as a basis for decisions needed to bring about a new standard of urban bus travel.

The Transbus project is being conducted through a prime contract with prototypes being developed through subcontracts. Each subcontractor has completed the first (of three) Transbus prototype and is conducting manufacturer's tests prior to delivery to the prime contractor for a program of intensive testing and evaluation during the next several months. (See chart on page PE-47)

In FY 1975, an estimated $890,000 will be used for Transbus. This compares with an estimated $9,403,000 in FY 1974 and $14,858,000 in FY 1973.

High-Capacity Bus

The economic viability of transit systems is severely strained by peak-hour demands for service which largely determine overall requirements for drivers. Operating buses carrying 75 or more passengers during rush hours might alleviate this problem. UMTA has, accordingly, contracted to determine the requirements of the United States transit industry for high-capacity buses, to define the operating limitations, both physical and legal, and to draw up a general specification including a conceptual design. This project is nearly complete. The conceptual design will form the basis for competitive procurement of a design specification package in FY 1975. The design would be completed during FY 1975 and could form the basis for transit industry procurement of a high-capacity vehicle in production quantities.

in FY 1975, an estimated $500,000 will be used for this effort. This effort was initiated with an investment of $226,000 in FY 1973.

Small Bus

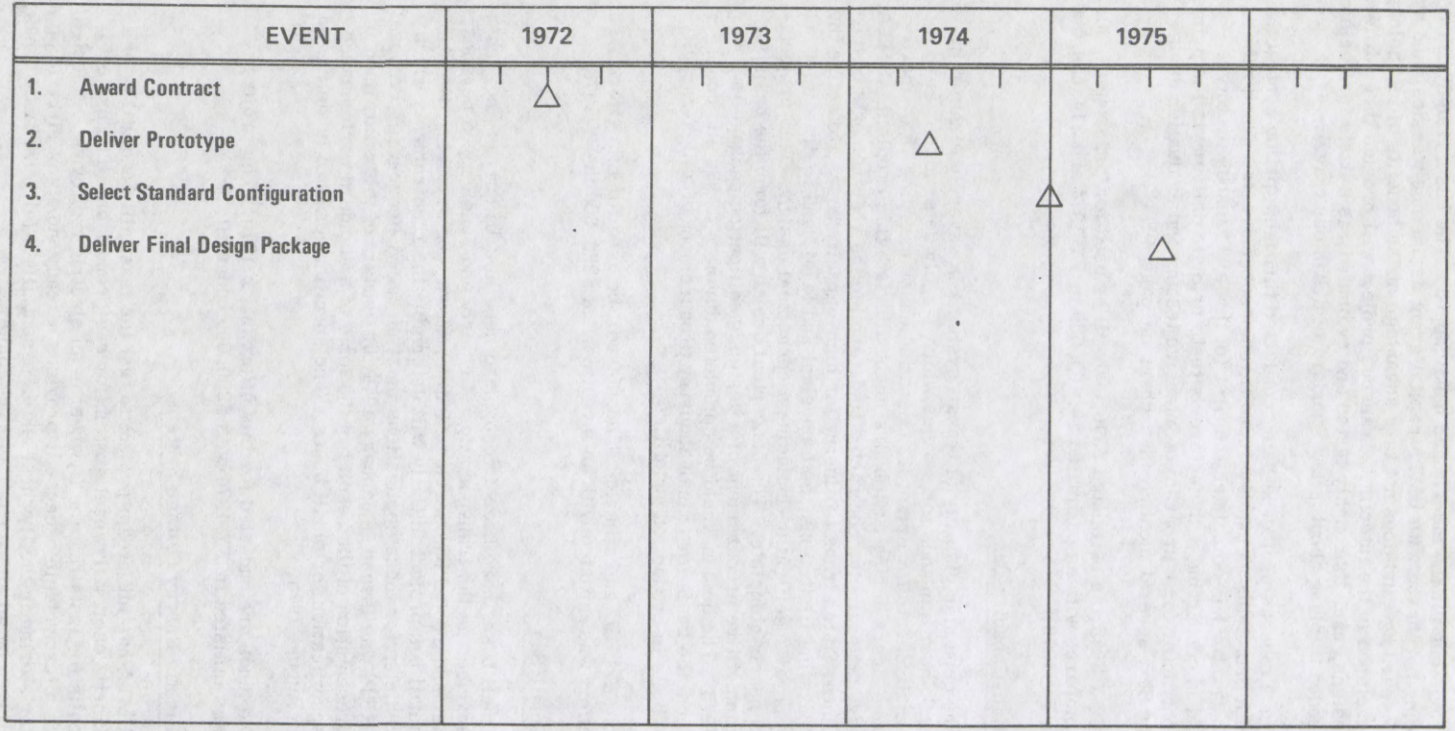
Small buses have been a recognized need in urban areas for such services as the transportation of elderly and handicapped persons, demand-routed bus service, and downtown loop service. UMTA's small bus project initially will determine the requirements which vehicles for these applications must meet. A Request for Proposal (RFP) was issued in January 1974 for conduct of this study and presentation of the results in the form of a standard performance specification for small buses. The specification is to be delivered in August 1975.

No funds are budgeted for this effort in FY 1975. The project was initiated in FY 1974 with $300,000 budgeted.

Kinetic Energy Storage System

UMTA has initiated a project to test the feasibility and utility of a kinetic energy flywheel system for bus propulsion. The project calls for installing the flywheel in an electric trolleybus--selected as a test vehicle because it provides a ready supply of electric power for storing in the flywheel and is essentially a full-size transit bus driven by an appropriate electric motor.

TRANSBUS
NEW 40 FOOT TRANSIT BUS
MILESTONES BY CALENDAR YEAR



The flywheel energy storage system will provide auxiliary energy for operating the trolleybuses when disengaged from overhead wires. This capability is desirable to detour around obstacles, as well as in areas where overhead wires are unavailable or aesthetically unacceptable. Since San Francisco's trolleybus fleet faces some of these problems, the San Francisco Public Utilities Commission is assisting UMTA in sponsoring this project and will provide the facilities and vehicles needed to test the flywheel. Proposals for development of the flywheel system have been received and evaluated, and a contract will be awarded in the near future. (See chart on page PE-49)

in FY 1975, $250,000 has been budgeted for this effort. An estimated $730,000 is planned for use in FY 1974 and the research was initiated in FY 1973 for $300,000.

Para-Transit Vehicle

In accordance with Congressional guidance last year, UMTA has initiated a project to develop a prototype of a quiet, low-pollution, economical para-transit vehicle for potential use as a taxicab, jitney, and Dial-A-Ride vehicle. A Request for Proposal (RFP) for this developmental prototype is nearly ready for issuance, and a contract will be awarded in early FY 1975. (See chart on page PE-50)

In FY 1975, $310,000 is estimated for this research and $1,120,000 is budgeted for the initial effort in FY 1974.

b. Transit Operational Technology — FY 1975: $2,000,000 (Transportation Systems Center: $900,000)

Bus Priority Systems

Bus Priority Systems (BPS) offer the potential of higher average travel speed for urban buses without removing them from the general traffic flow. A test of a preemptive BPS is planned for FY 1975; this field evaluation would feature electronic traffic signal controllers actuated by buses operating within a downtown grid network of streets. This will complement ongoing efforts, in cooperation with the Federal Highway Administration, to evaluate the centralized, computer-controlled system made operational in Washington, D. C., in July 1973. After evaluation is completed, this system will be turned over to the District of Columbia in late 1975.

The bus-actuated systems, like the type to be operated for evaluation in Miami, Florida, in a line-haul corridor starting in March 1974, are expected to be more widely applicable and less expensive to install than the centrally controlled BPS while providing comparable reductions in travel time. (See Chart on page PE-51)

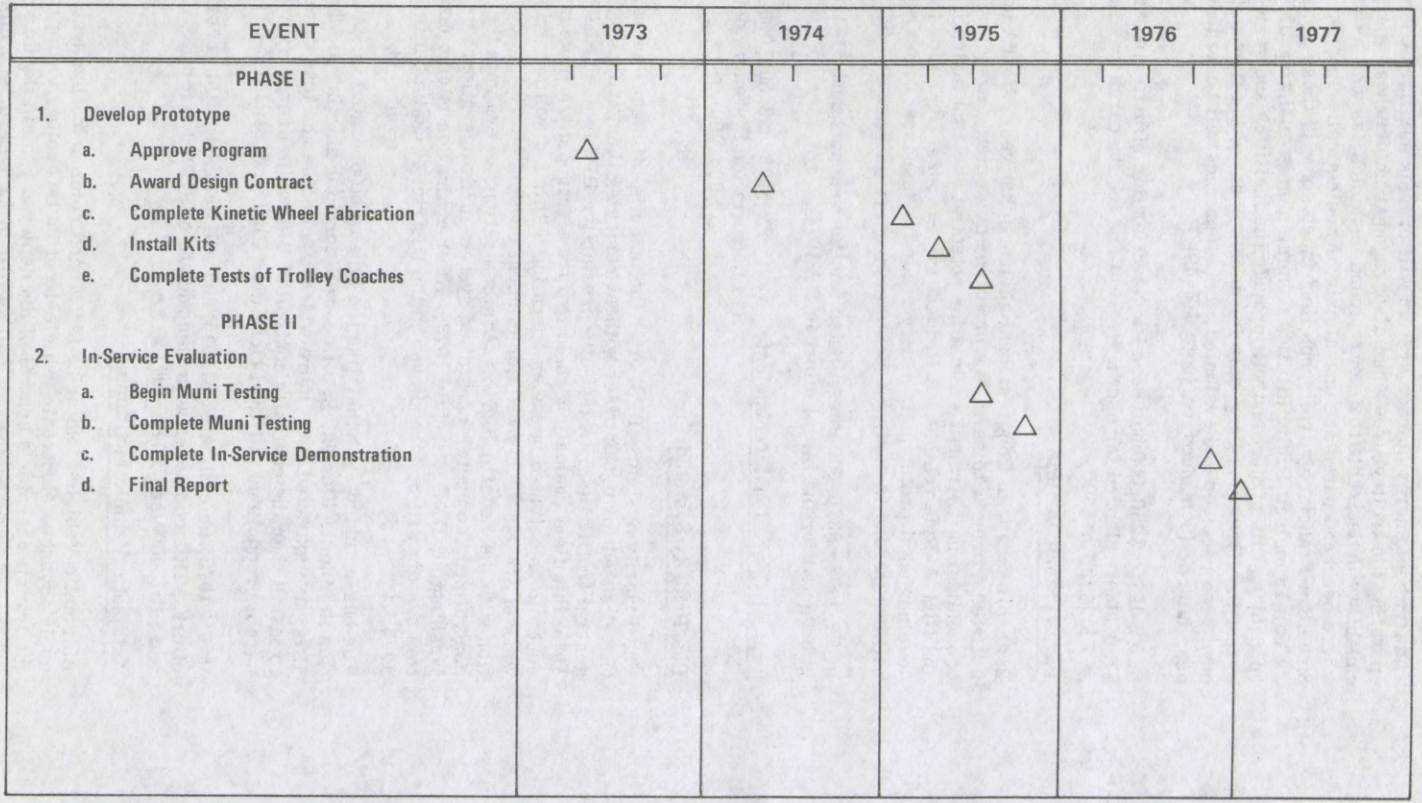
In FY 1975, an estimated $1,015,000 will be used in this research effort. This compares with an estimate of $177,000 for FY 1974 and $101,000 used in FY 1973.

Automatic Vehicle Monitoring

Automatic Vehicle Monitoring (AVM) and communication systems apply advanced electronic vehicle-location technology to improve the transit operator's control of his deployed vehicle fleet and adherence to schedules, as well as providing data for schedule-building and service improvements. A project that will

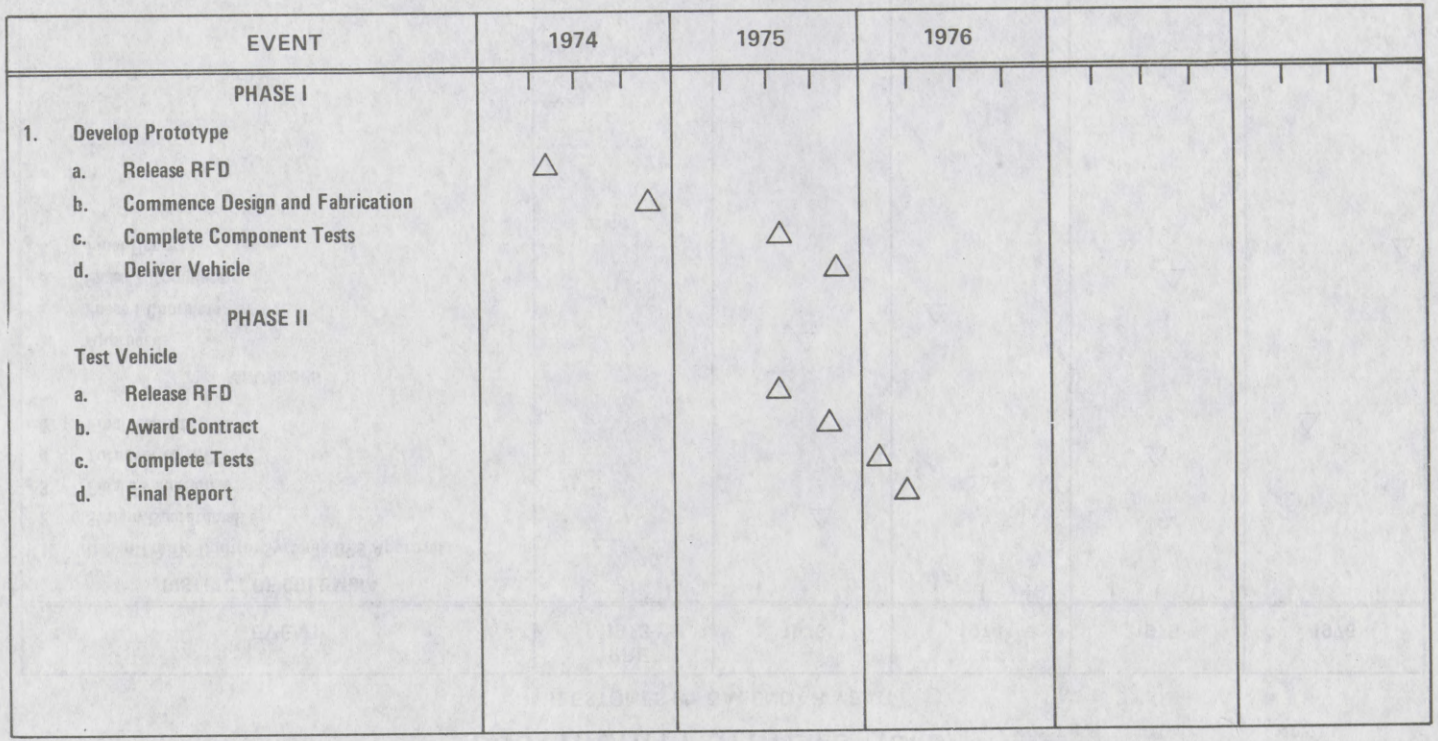
KINETIC ENERGY STORAGE SYSTEMS
(FLYWHEEL ENERGY)

MILESTONES BY CALENDAR YEAR



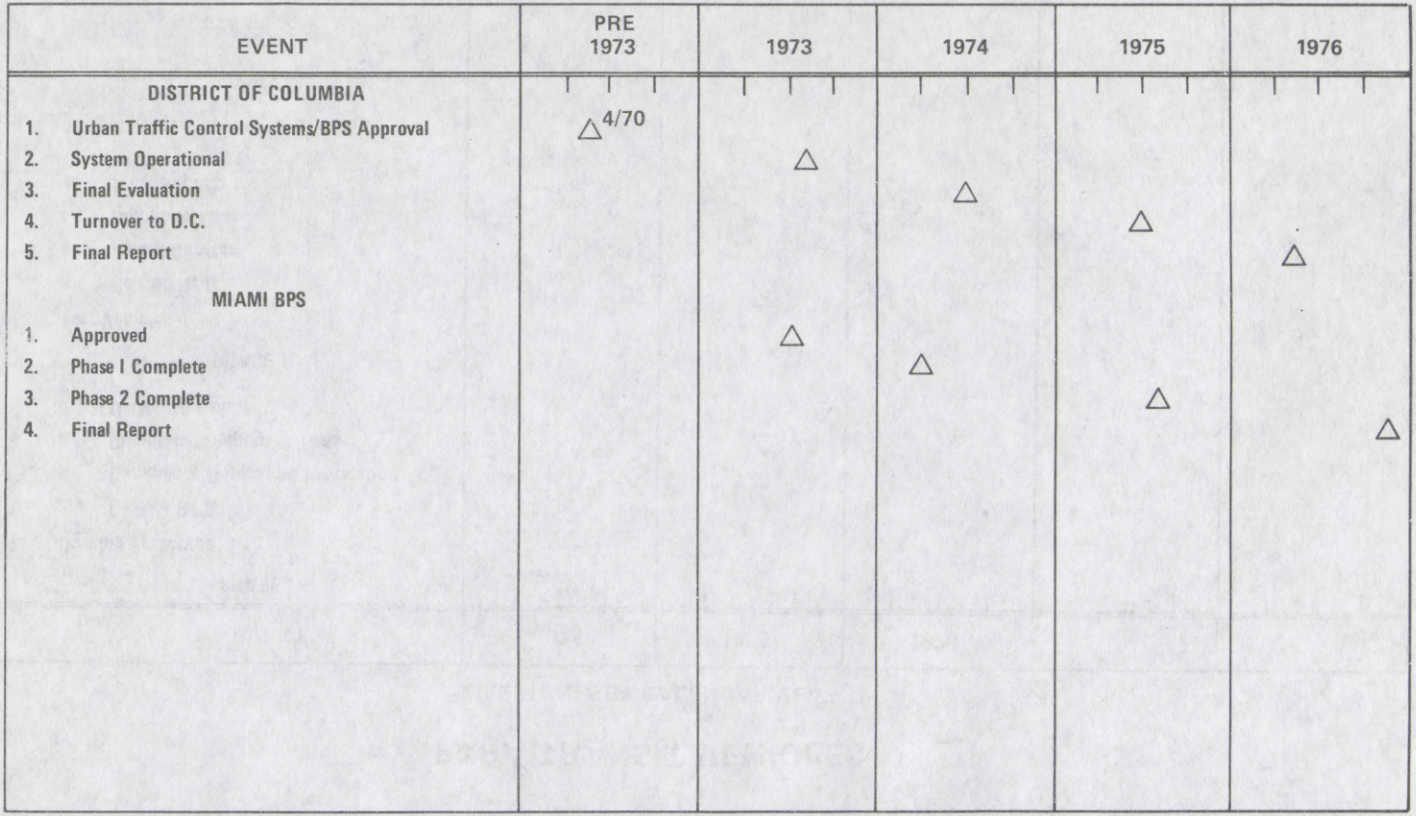
PARA-TRANSIT VEHICLES

MILESTONES BY CALENDAR YEAR



BUS PRIORITY SYSTEMS (BPS)

MILESTONES BY CALENDAR YEAR



field-test a multi-user AVM system (permitting transit to share costs with other public services that require close control of vehicle location) will be initiated during FY 1974. This project will build upon past UMTA work in which tests of four AVM technologies have been completed in the Philadelphia area. The DOT Transportation Systems Center is expected to play a key role in the new AVM project, including awarding and administering contracts. The primary contract should be awarded by mid-FY 1975, followed by a year of development and deployment and eighteen months of operational testing. (See chart PE-53

In FY 1975, an estimated $985,000 will be used for this research effort. This compares with $1,192,000 budgeted for FY 1974 and $79,000 used in FY 1973.

2. Rail Transit — FY 1975: $13,250,000 (Transportation Systems Center: $5,320,000)

Activities in urban rail transportation R&D involve research, development, test and evaluation of new vehicle systems as well as continuing efforts to develop supporting technology and test facilities. Most of these efforts are long-lead-time in nature with R&D investments continuing as the multi-phased projects progress toward completion.

Financial Summary

Funding levels for the two categories of rail transit R&D are as follows (dollars in thousands):

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Urban Rail Vehicles and Systems	$ 6,717	$ 8,400	$ 7,330
Rail Supporting Technology	7,820	7,600	5,920
Total, Rail Transit	$14,537	$16,000	$13,250

a. Urban Rail Vehicles and Systems — FY 1975: $7,330,000

The following are the major areas of activity:

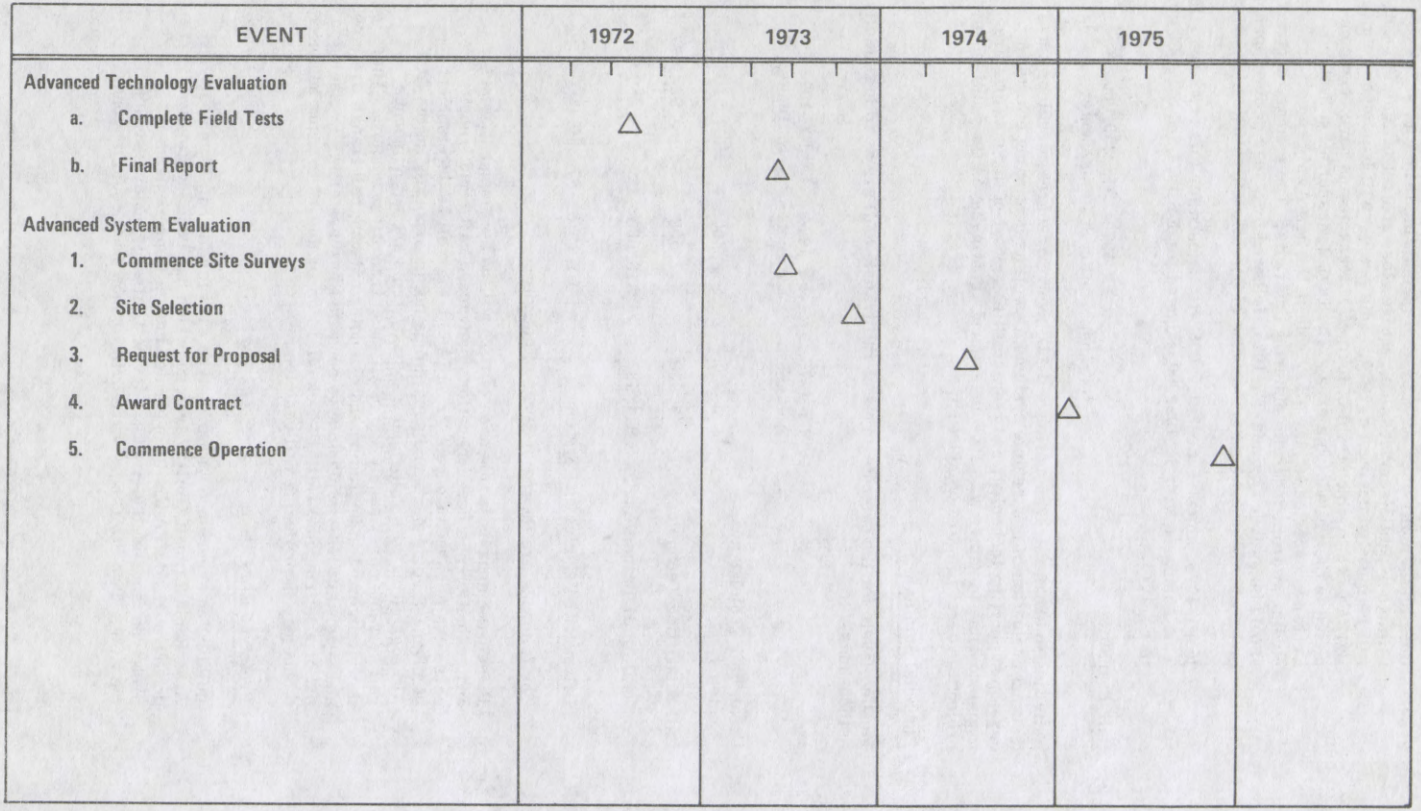
Principal emphasis in this area of R&D will be development, test, and evaluation of a new generation of advanced rail rapid transit cars--the Advanced Concept Train (ACT)--as well as development of advanced components and subsystems not incorporated in the ACT. Although cities with rail rapid transit systems are not numerous, rail systems carry nearly 1/3 of all mass transit passengers. There is wide interest in upgrading and extending existing rail transit systems, and several cities are planning to construct new systems. Replacing old or acquiring new rolling stock offers opportunities to apply advanced technology in producing rail vehicles.

Prototype Cars

Building on experience with prototype cars for the San Francisco Bay Area Rapid Transit (BART) system, which has been thoroughly documented, UMTA has incorporated design improvements in prototype State-of-the-Art Cars (SOAC), already under test, and the ACT. Two SOAC cars were built to show what could be done

AUTOMATIC VEHICLE MONITORING

MILESTONES BY CALENDAR YEAR



with available technology to improve passenger convenience and operating efficiency. Testing of the SOAC vehicles on UMTA's Rail Transit Test Track at Pueblo, Colorado, was interrupted by an accident in August 1973 which, incidentally, proved the vehicle's structural integrity and crashworthiness. The cars have been repaired and are undergoing necessary retesting prior to beginning extensive in-service testing and evaluation on operating properties. The SOAC will be operated during FY 1974 and FY 1975 in New York, Boston, Cleveland, Chicago, and Philadelphia. (See chart on PE-55)

In FY 1975, an estimated $111,000 will be used in this research effort. In FY 1974, $1,115,000 is budgeted for the research.

Advanced Concept Train

UMTA has also initiated development of the Advanced Concept Train (ACT), which will incorporate major advances beyond state-of-the-art technology. The ACT design offers significant innovations for rail rapid transit including an energy storage propulsion system which employs spinning flywheels to capture, in mechanical form, the energy normally lost as heat generated during braking. The energy recovered during braking is then used to assist in accelerating the train back to speed after station stops, thus reducing the demand for utility-generated power from the third rail.

Other innovations will include monomotor trucks, improved suspension, acrylic car body over an aluminum frame, and modular, convertible interior compartments tailored to passenger needs. The ACT promises to reduce significantly both operating and maintenance costs.

The two ACT cars are to be delivered to Pueblo for testing in late 1975. (See chart on page PE-56)

In FY 1975, an estimated $5,139,000 will be used in this research. This compares with $1,020,000 budgeted for FY 1974 and $810,000 used in FY 1973.

Advanced Subsystem Development

In parallel to development of the ACT, UMTA is pursuing the development and testing of promising subsystems not on the ACT in an Advanced Subsystems Development Program (ASDP). The designs proposed in the competition for the ACT subcontract brought forward wide variety of potential improvements for future

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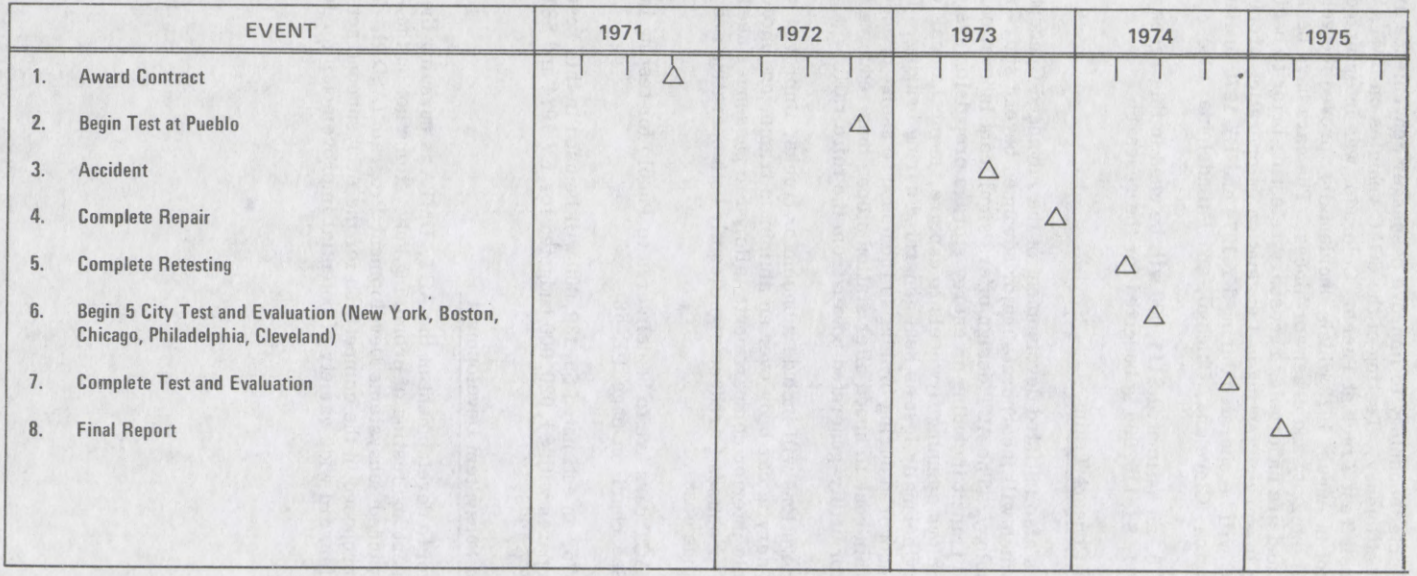
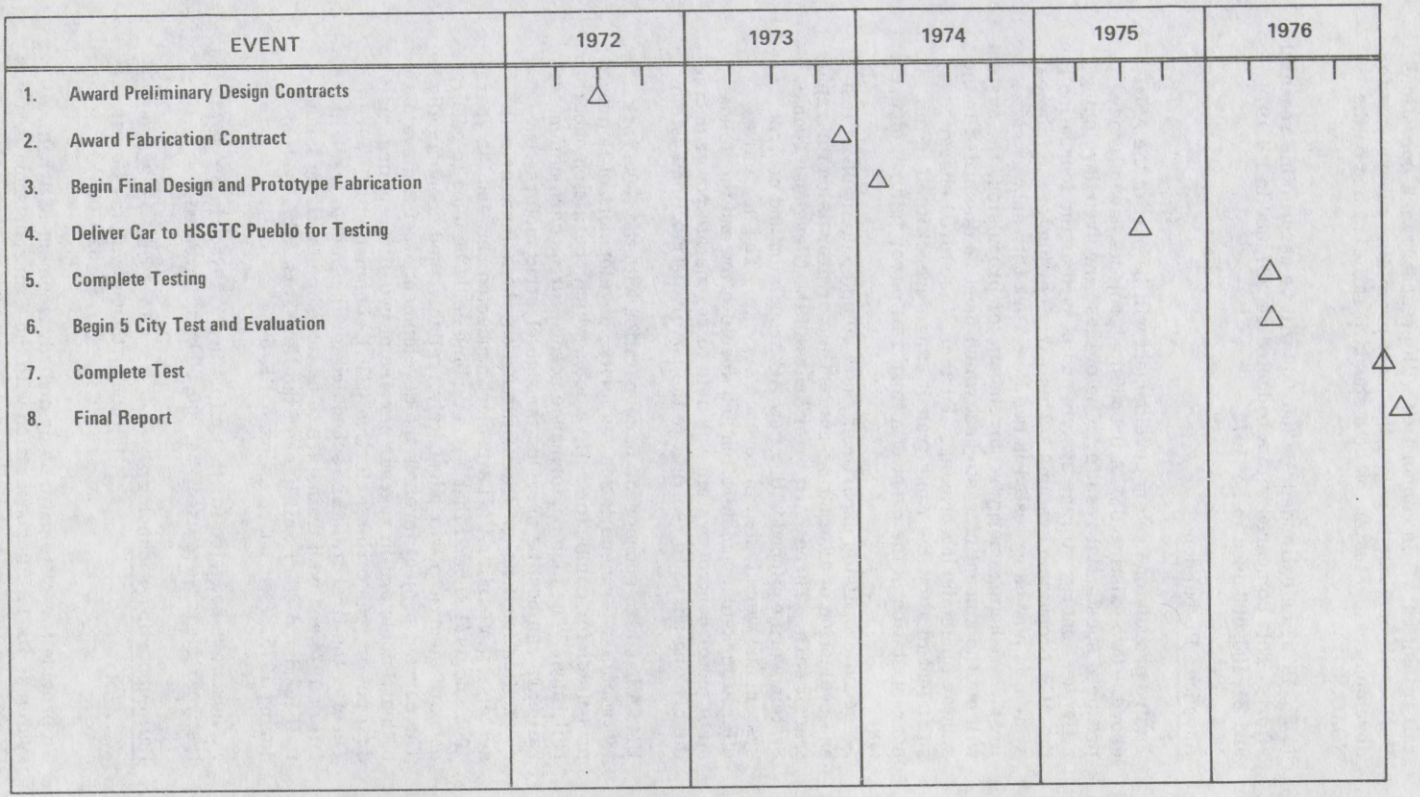
STATE-OF-THE-ART
RAPID TRANSIT CARS (SOAC)

MILESTONES BY CALENDAR YEAR



ADVANCED CONCEPT TRAIN
RAPID TRANSIT CARS (ACT)

MILESTONES BY CALENDAR YEAR



rail transit cars. In conjunction with present transit operations, UMTA will continue to select the most promising subsystems for development and testing on both standard rail cars and on the SOAC.

In FY 1975, an estimated $1,200,000 will be used in this research effort. This compares with a budgeted $4,827,000 in FY 1974 and $1,400,000 used in FY 1973.

Advanced Propulsion

Future propulsion system development will be part of the ASDP above. Two existing UMTA propulsion projects have already produced substantial results. One of these involved developing a flywheel energy storage system and served as the foundation for the ACT propulsion systems. This early version of the flywheel system is now being tested in two New York City subway cars. Besides reducing energy requirements for propulsion, the system will cut the amount of waste heat which must be dissipated in the subway tunnel during braking. Further, the stored energy is sufficient to allow the rapid transit car to propel itself to the nearest station in the event of a third rail power failure. (See chart on PE-58)

A second propulsion experiment, now completed, involved test and evaluation of alternating-current motor propulsion for rapid transit cars. Three "Airporter" cars of the Cleveland Transit System were equipped with a new AC propulsion and control system and were tested in revenue service. The new cars offered jerk-free acceleration and deceleration and the solid-state motor control system was able to regenerate power during the braking phase to return it to the power distribution system.

UMTA has also sponsored, in cooperation with the New York Metropolitan Transportation Authority, development of improved propulsion for commuter rail vehicles which operate on suburban rail lines. The high performance needed for modern commuter rail cars can best be provided through electric motors, but electrification does not extend throughout the commuter rail system. An earlier UMTA project conducted between the years 1965 and 1971 showed that a gas turbine could be used to generate onboard electric power adequately, reliably, and economically. The current project involves the development, test and evaluation both at Pueblo and in revenue service of two different designs of dual power, gas turbine/electric (GT-E) commuter rail cars. Tests of the first train are scheduled for the Pueblo track in the fall of 1974 and both trains are to be tested on the Long Island Rail Road and other rail lines of the New York MTA system during 1975. (See chart on page PE-59)

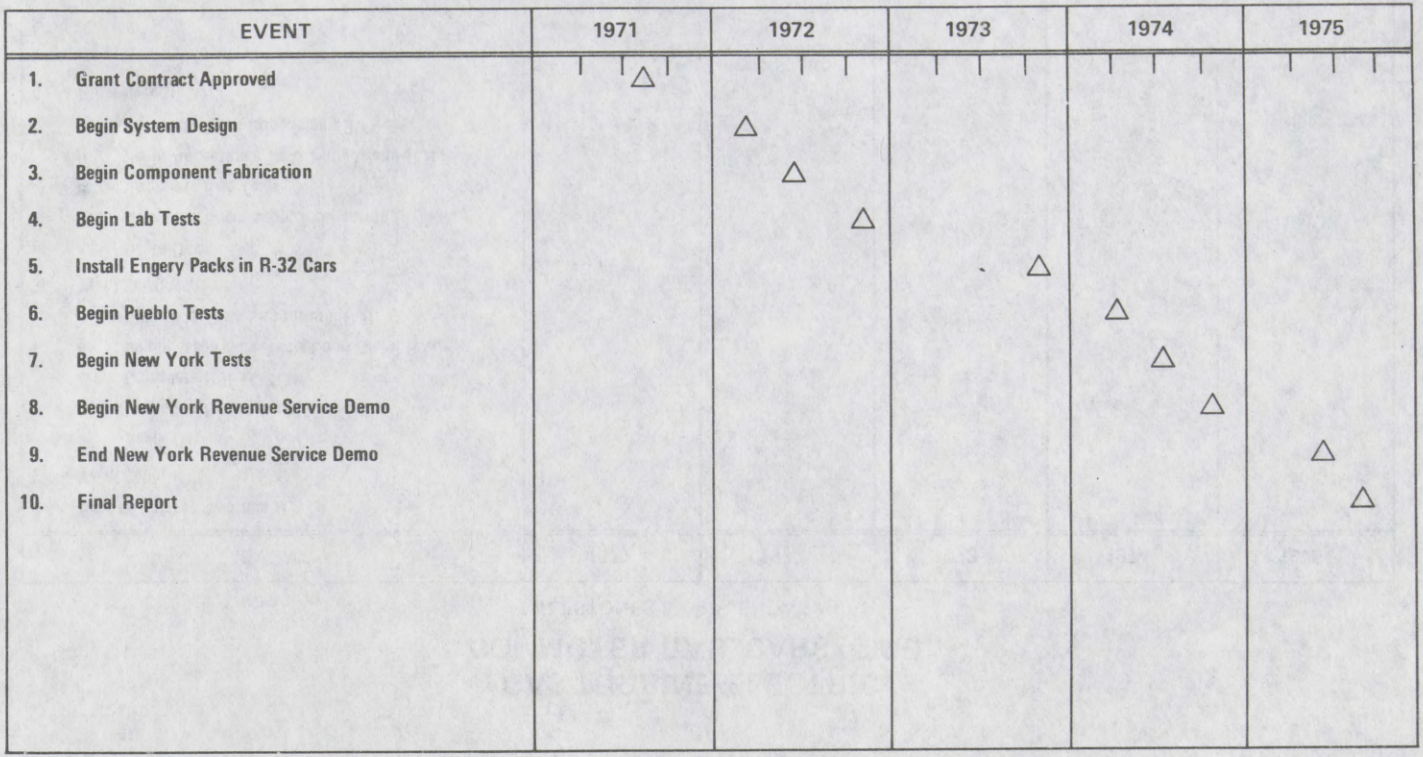
No funds are budgeted for this effort in FY 1975. In FY 1973, the last year funds were used, $4,000,000 was invested.

b. Rail Supporting Technology — FY 1975: $5,920,000 (Transportation Systems Center: $5,320,000)

To provide for systematic study and advancement of urban rail systems, UMTA, in cooperation with the Transportation Systems Center and the Federal Railroad Administration, has established a rail rapid transit test facility at the DOT High Speed Ground

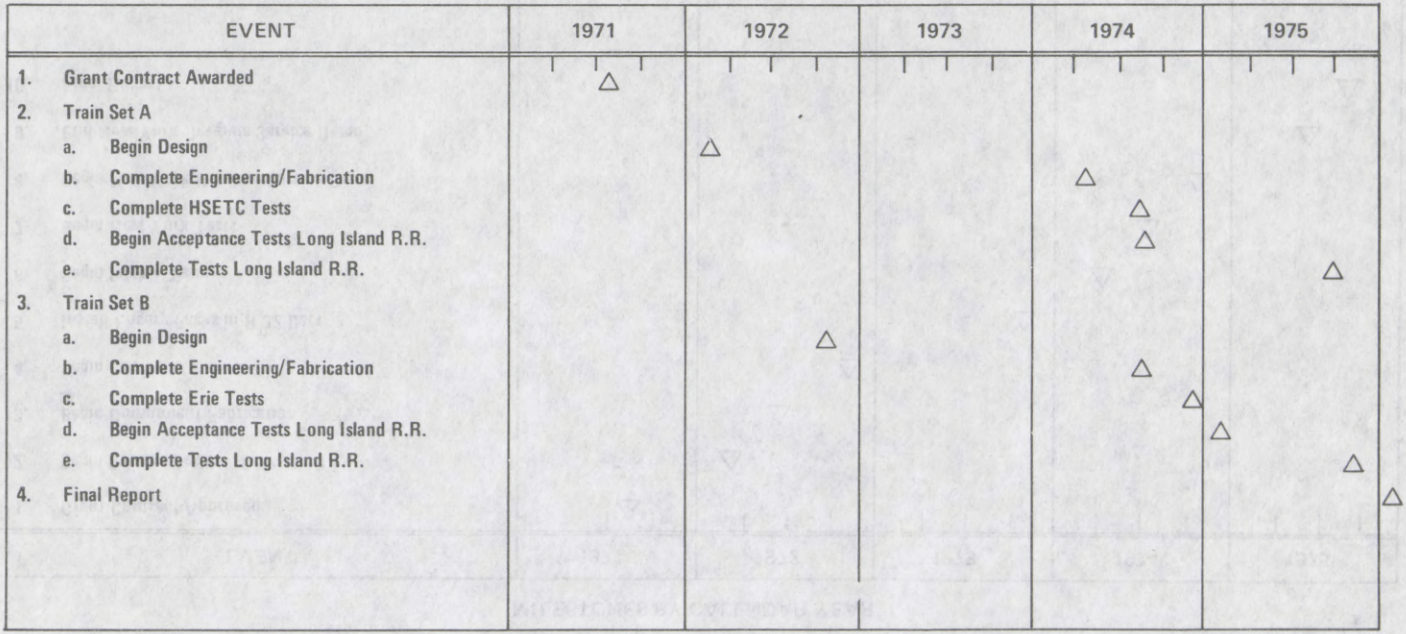
ENERGY STORAGE
RAPID TRANSIT CARS

MILESTONES BY CALENDAR YEAR



GAS TURBINE/ELECTRIC COMMUTER RAIL CARS (GTE)

MILESTONES BY CALENDAR YEAR



Test Center, Pueblo, Colorado, and sponsored fundamental research and engineering analyses as a basis for requirements and specifications. The Pueblo site has a 9-mile electrified test track now in use to test the SOAC and the Energy Storage Cars, and scheduled for the GT-E commuter cars, light rail vehicles, and other new cars in the coming months. A joint UMTA-FRA Rail Dynamics Laboratory is being constructed at Pueblo to improve understanding of vehicle dynamics, noise generation and adhesion phenomena.

UMTA's developing test and evaluation capability should result in improved reliability and confidence in new rail vehicle designs, reduced costs to debug new equipment, and adoption of standard test and evaluation practices. Engineering and analytic work has emphasized ventilation requirements for underground rapid transit systems based in part on scale modeling; results of this project have already been applied to reduce the cost of planned tunnel construction. These methods are being used in the design of the new Atlanta and Baltimore rapid transit systems, and they have already shown how planned ventilation can be simplified to save time and funds. Ongoing effort in other aspects of rail supporting technology is addressing a variety of ways to cut costs of urban tunneling, noise abatement measures, instrumentation for measuring the condition of track and the development of test plans and procedures.

In FY 1975, an estimated $5,920,000 will be used for this research. This compares with a budgeted $7,600,000 in FY 1974 and $7,820,000 used in FY 1973.

3. New Systems — FY 1973: $29,000,000 (Transportation Systems Center: $2,895,000)

UMTA's general goal in New Systems R&D is to apply the best of advanced technology to urban mass transportation service. Included in the New Systems category are projects involving automated Personal Rapid Transit (PRT) systems, Dual Mode Transit Systems capable of operating automatically on guideways and under driver control on suburban streets, and Demand-Responsive (Dial-A-Ride) Transit Systems for low-demand-density service in locations such as suburban residential areas.

Financial Summary

The funding levels for UMTA New Systems R&D is as follows (dollars in thousands):

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Personal Rapid Transit Morgantown PRT System.....	$14,173	$14,000	$ 6,380
High-Performance (2nd Gen.) PRT.....	2,864	2,800	10,620
High-Capacity (3rd Gen.) PRT ..	200	1,400	2,750
Test TRANSPO '72 PRT Systems.....	1,851	...	...

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
PRT Technology Development.....	$ 1,880	$ ...	$ ...
Subtotal, PRT	$20,968	$18,200	$19,750
Dual-Mode Transit.....	$ 1,832	$ 2,750	$ 7,750
Dial-A-Ride.....	2,247	2,200	1,500
Urban Tracked Air Cushion Vehicle.....	6,351	...	...
Total, New Systems R&D.....	$31,398	$23,150	$29,000

a. Personal Rapid Transit — FY 1975: $19,750,000 (Transportation Systems Center: $1,120,000)

Personal Rapid Transit (PRT) systems represent an advanced means of public transportation wherein fleets of small vehicles travelling automatically on dedicated guideways provide non-stop, origin-to-destination service. These systems utilize computer and automation technology developed during the past decade to offer significantly better service than existing bus and rail transit modes.

A brief comparison with rail rapid transit systems, the existing mode that is most nearly capable of providing the kind of service that PRT's promise, indicates that PRT systems should be able to handle passenger volumes comparable to those moved by rapid rail systems in all but the most densely travelled rail corridors.

The PRT system attains its capacity by moving small vehicles at short headways, whereas rapid rail capacity involves larger vehicles (400 to 800 seats per train) at headways of 90 to 120 seconds or longer. In a network configuration, small PRT vehicles operated under computerized vehicle management could permit extremely flexible scheduling including a demand-responsive mode of service that users will perceive as comparable to that provided by the automobile and even better than the automobile in congested downtown areas.

Some advantages of PRT systems are:

-- Total operating costs are relatively insensitive to labor costs;

-- Systems can be configured for urban areas of varying sizes, shapes, and population densities;

-- Stations can be spaced to provide convenient access and egress in the area served;

-- Station size can be adjusted to local demand rather than train length (thus permitting a large number of station locations for a given amount of investment in facilities and more efficient use of facilities);

-- Local pollution is minimal; and

-- Construction cost per mile is significantly lower than that for rail rapid transit.

Some disadvantages of PRT systems are:

-- The visual impact of guideways and stations on the urban landscape may not be acceptable in some locations;

-- PRT systems will require extremely careful design to assure safety, reliability and maintainability; and

-- While PRT is less expensive than comparable rail rapid transit, the capital investment involved can be substantial.

Last year, the Congress indicated some concern over the number of PRT projects being undertaken by UMTA. In response to this concern, we have consolidated the efforts classified as "PRT" under three broad system developments, ach representing a different level of technology, and each being potentially applicable in different situations.

UMTA's major effort (referred to as High Performance PRT) in PRT development over the next several years will be to design and build a prototype, ready for urban deployment, capable of carrying 14,000 passengers per lane per hour in relatively small vehicles. Such a development represents a significant advance in the state-of-the-art in personal rapid transit, and would be potentially usable as an alternative to rail or bus transport in many cities.

At the same time, we will be finishing our Morgantown project, and doing very preliminary research on the need for and feasibility of systems which could offer a greater capacity, using smaller vehicles than the "High Performance" PRT.

Thus, in FY 1975 UMTA will not have three simultaneous PRT developments proceeding along parallel paths--rather, one is in the final stage of completion (Morgantown); one is receiving the maximum effort (High Performance); and the third (High Capacity) is in the very early formative stages.

Morgantown PRT System

The first practical experience with installing a PRT system in an urban area is being gained through the UMTA project at the West Virginia University campuses in Morgantown. The five and one-quarter lane-miles of guideway connecting the three stations and the maintenance facility are completed, and finishing touches are being applied to the final design of the 45 vehicles which will begin to arrive at Morgantown in the fall of 1974. Service will be provided between the campuses of the university and to the downtown business district.

Each vehicle will carry eight seated and up to thirteen standing passengers and will travel at speeds up to 30 mph under fully automated computer control. Vehicles will be capable of carrying peak volumes of 1,100 passengers in a 20-minute period, operating at headways of 15 seconds. The electrically powered, rubber-tired vehicles operate on concrete guideways which can be heated to prevent icing during cold weather. An on-board device, rather than an articulated guideway, is used to steer each vehicle automatically along the guideway and to accomplish switching in and out of stations.

A control system utilizing ten computers will monitor, supervise, and control all system operations including vehicle start, stop, speed, merge and de-merge. The system will be turned over to the university for revenue operation with a vehicle test track with off-system vehicle storage, special test equipment, operating spare parts, personnel training, manuals, directives and procedures.

Because work, aimed at completion of the Morgantown PRT, has been moving at an accelerating pace, the cash flow requirements for FY 1974 have proven to be more than the amount estimated in the FY 1974 budget request. The total cost of completing the system has not changed, but funding is required earlier than was anticipated. UMTA has accommodated this situation by deferring until FY 1975 a portion of the incremental funding needed for the High Performance (Second Generation) PRT, the Third Generation PRT and the Dual Mode Transit System. The effect is to reduce the funding needed for the Morgantown system in FY 1975 by $3,500,000, while requiring a corresponding increase in funding for the other three projects.

The Morgantown PRT system is scheduled to be completed and turned over to the University of West Virginia in the spring of 1975.

In FY 1975, an estimated $6,380,000 will be used for this research. This compares with a budgeted $14,173,000 used in FY 1973.

High Performance PRT

While the current technology of PRT systems such as that at Morgantown and the loop and shuttle type systems in operation at certain airports is suitable for their particular applications, the limited line haul capacity of these systems poses significant problems if they are considered for large-scale urban implementation. Limited capacity necessitates additional guideway to realize parallel paths in congested areas or large, awkward vehicles which increase the massiveness and cost of guideways and stations and reduce the "personalized" character of PRT service.

Tests conducted by UMTA indicate that present systems, with design improvements in certain key subsystems, are capable of operation with system capacities great enough to be applicable for many urban areas. UMTA has initiated a project to design a High Performance PRT with a single lane capacity of 14,000 seats per hour incorporating dispersed origin-destination capability that can potentially meet the needs of many cities. The increased capacity will allow improved vehicle utilization, reduced waiting and trip times, and increased cost-effectiveness.

The project is divided into two phases. Phase I involves award of three competitive preliminary design contracts for a system to be tested and evaluated during Phase II. The second phase will include detailed system design and fabrication, test site preparation, installation and system integration at the test site, subsystem and system operational tests, and evaluation of the system's performance. The system will be configured to permit expansion to cover large urban areas. Extensive use of simulations will show that the system in an urban configuration would meet all performance requirements that cannot be verified in a test track configuration.

Planning for Phase I has been completed and the Request for Proposals (RFP) for Phase I has been issued. A program plan has been developed, and a comprehensive review of existing simulations of automated system network operation has been completed. Three Phase I contracts should be awarded early in FY 1975. The contractors will deliver a detailed proposal for Phase II along with preliminary designs for the vehicle, guideway, test track, command and control, software and simulations.

Award of the Phase II contract is scheduled for May 1975. The final design for the test track and Phase II system should be completed within six months thereafter, with test track completion scheduled for July 1976 and system integration to be completed by July 1977. The Phase II system will consist of 2 lane-miles of guideway, 2 stations, 5 vehicles, an expandable command and control system, a maintenance facility and maintenance equipment. The test track will be capable of evaluating system performance at grade and on elevated guideway, at 6 per cent grades, on curved and straight sections, in merging and diverging, and in line-speed operation. Upon completion of engineering evaluation of the Phase II system, the technology will be available for adoption by cities here and abroad. (See chart on page PE-65)

In FY 1975, n estimated $10,620,000 will be used for this research. This compares with a budget $2,800,000 in FY 1974 and $2,864,000 used in FY 1973 (the initial year).

High Capacity (Third Generation) PRT

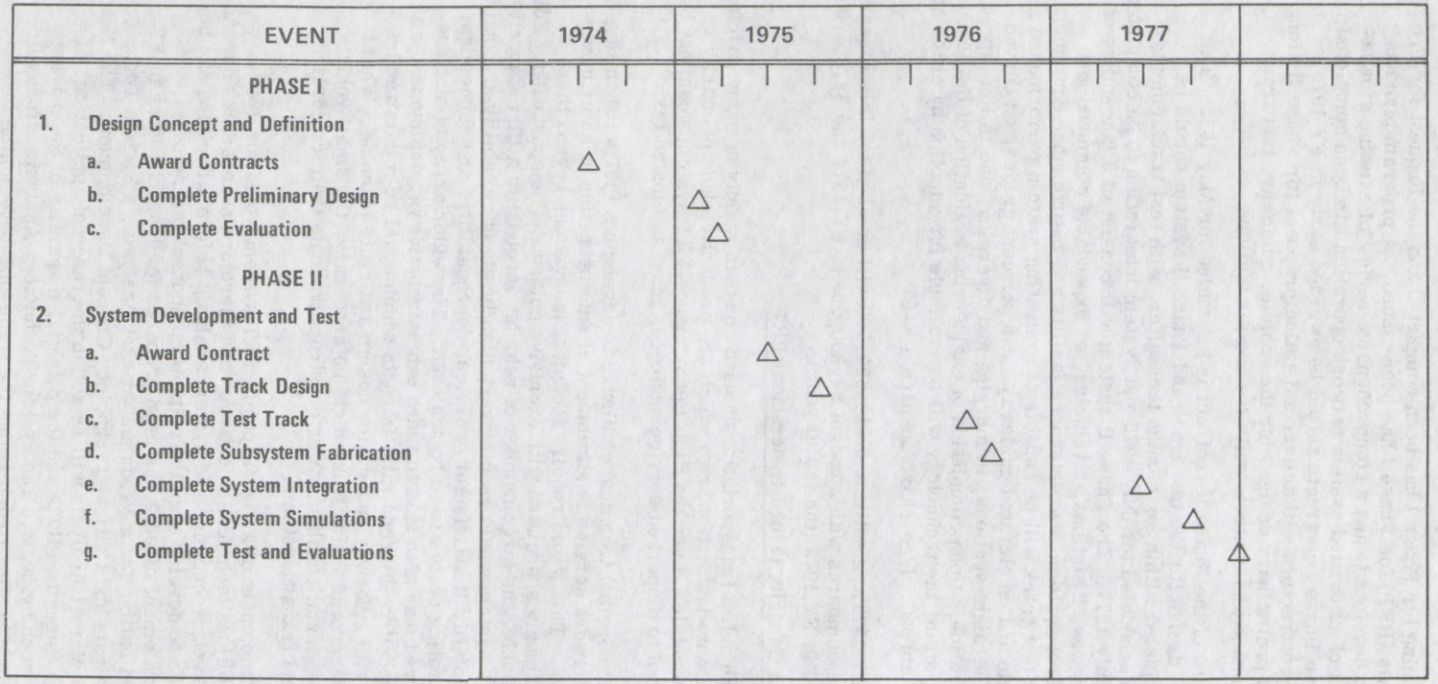
Much urban transportation demand consists mainly of many-origin-to-many-destination trips which are presently made primarily by automobile. Even the High Performance PRT system would not be suited to dispersed service analogous to an automated taxi.

The principal technical challenge to developing PRT's capability of network service is attainment of safe operation at short headways. This would require technical innovations beyond those commonly associated with exclusive guideway transportation. For example, the large number of vehicles involved in a High Capacity PRT system would require very high levels of reliability and maintainability if satisfactory service, dependability, and economical operating costs are to be achieved. The wider array of stations served may also lead to more extensive guideway deployment with associated environmental impacts which could be minimized by careful guideway and station design and route planning. Where underground installation might be necessary, the small vehicle size should result in lower construction costs than for current rapid transit systems.

Development of a high-capacity PRT system would involve ambitious technical objectives, and therefore necessitates careful market, economic, and system analysis before a decision can be made to develop even the critical component technologies. A statement of work has been prepared for issuance later in FY 1974 calling for a Needs and Market Analysis, a System Technology Analysis and Critical Technology Concept Development. The Needs and Market Analysis will establish the range of applications of high-capacity PRT's and the potential magnitude of the market for such systems. The System Technology Analysis effort will include studies to determine the trade-offs between the level of service achieved and the cost of system implementation.

HIGH PERFORMANCE PRT SYSTEM

MILESTONES BY CALENDAR YEAR



Independent analyses in areas such as human factors, collision dynamics, propulsion and braking, and vehicle control will be performed and preliminary requirements for a test track system development will be defined. The Critical Technology Concept Development will address the design of a complete vehicle system capable of achieving the desired performance goals and all related aspects of vehicle design including suspension, propulsion, braking and lateral and longitudinal guidance.

Not until these preliminary investigations have been completed will UMTA consider proposing a major effort to develop a High-Capacity PRT System. (See chart on page PE-67)

In FY 1975, an estimated $2,750,000 will be used in this research. This compares with $1,400,000 budgeted in FY 1974 and $200,000 used in FY 1973.

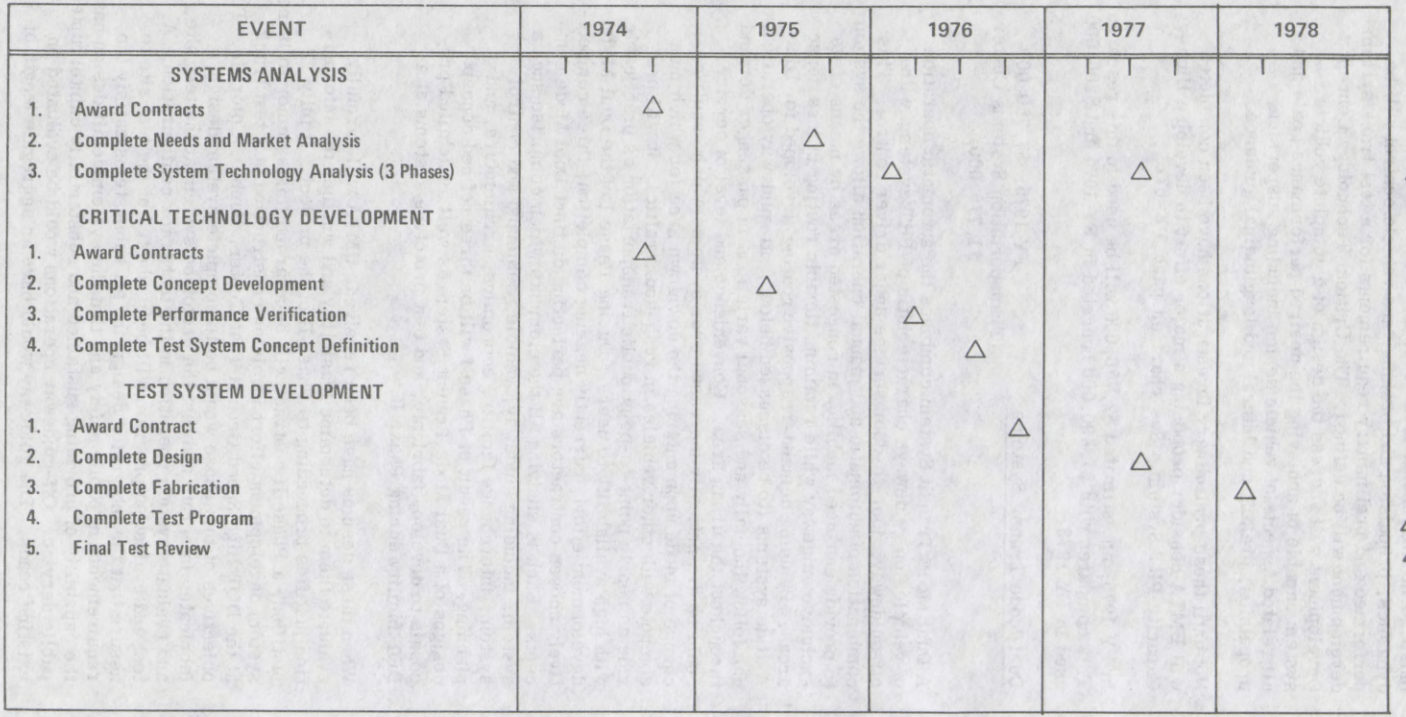
b. Dual Mode Transit Systems — FY 1975: $7,750,000 (Transportation Systems Center $1,775,000)

A Dual Mode Transit System combines the automatic operation of vehicles on guideways characteristic of PRT systems with off-guideway, door-to-door service under driver control. This combination of automatic and manual operation allows the system to provide enhanced mobility in congested areas by means of its exclusive guideway while retaining flexible routing in less dense areas. By using demand-responsive routing developed for Dial-A-Ride systems (to be discussed below), off-guideway operations can follow the daily and seasonal variations in passenger demand throughout the urban area. Convenience and level of service could be dramatically increased over systems which require change of mode upon entering the downtown area (or which must compete with other vehicles in rush-hour traffic). It will provide as nearly point-to-point public transportation as practicable, with high availability to users. During Phase I of the Dual Mode development effort, currently nearing completion, three competitively chosen contractors are perfecting distinct Dual Mode concepts. Each is studying all the elements which comprise such a system, including guideway, vehicle, command and control system, interchange facility, economics, architecture, and planning. The result of Phase I will be three refined concept designs of a Dual Mode Transit System as well as detailed proposals to develop, fabricate, and test prototype systems at a DOT facility during Phase II.

When these designs have been received, UMTA will carefully evaluate them to determine feasibility and whether the information justifies proceeding to Phase II of the project. If fully justified, a Phase II contract will be awarded this summer to launch a system development effort involving construction of a test track at the DOT High Speed Ground Test Center, Pueblo, Colorado. The objectives of this phase would be to complete system design, fabricate, integrate and test the prototype system at the test site, and evaluate system operation in the test track configuration. A test and evaluation program will be conducted at the test site to assure that the integrated design and all subsystems satisfy the requirements of public safety and that the system detail design has the capability of providing sustained and substantially uninterrupted public service. Off-guideway operations would be evaluated on existing roads. The guideway would have an aggregate length of

HIGH CAPACITY PRT SYSTEMS

MILESTONES BY CALENDAR YEAR



about four miles including interchange ramps, bypasses and spurs. A detailed planning case study (now in the process of procurement) will proceed in parallel with the development of the Dual Mode technology to build a capability for planning for Dual Mode systems. Unlike conventional technical studies, the planning study will recognize and account for uncertainities in costs, performance and impacts. The outputs will provide estimates of maximum costs, thus furnishing R&D objectives. Performance characteristics such as maximum headway, minimum average speed and vehicle sizes will be handled similarly. (See chart on page PE-69)

In FY 1975, an estimated $7,750,000 will be used in this research. This compares with $2,750,000 budgeted for FY 1974 and $1,832,000 used in FY 1973.

c. Demand-Responsive Transit (Dial-A-Ride) FY 1975: $1,500,000

UMTA has played a major role in transforming Dial-A-Ride service from an attractive theoretical concept to a working reality. Dial-A-Ride combines effective dynamic scheduling of small vehicles to suit real-time passenger demand. Because the riders share the vehicle, which may deviate from a direct route to pick up and drop off other passengers, vehicle productivity is greater than for taxis. Depending on local labor agreements and local policy toward providing public transportation as a public service, the costs and fares generally fall somewhere in between those for bus and taxi service.

UMTA's primary involvement in Dial-A-Ride development has been in supporting the research which made computerized dispatching possible and in conducting the first major pilot experiment initially involving manually dispatched service, and, more recently, computerized dispatching. The field experiment in Haddonfield, New Jersey, has attracted increased patronage with every increase in the service area. Currently 11 square miles with a population of about 40,000 is served by 19 vehicles. Patronage has grown by 75 per cent in the past year, from 19,254 in January 1973 to 33,456 in January 1974.

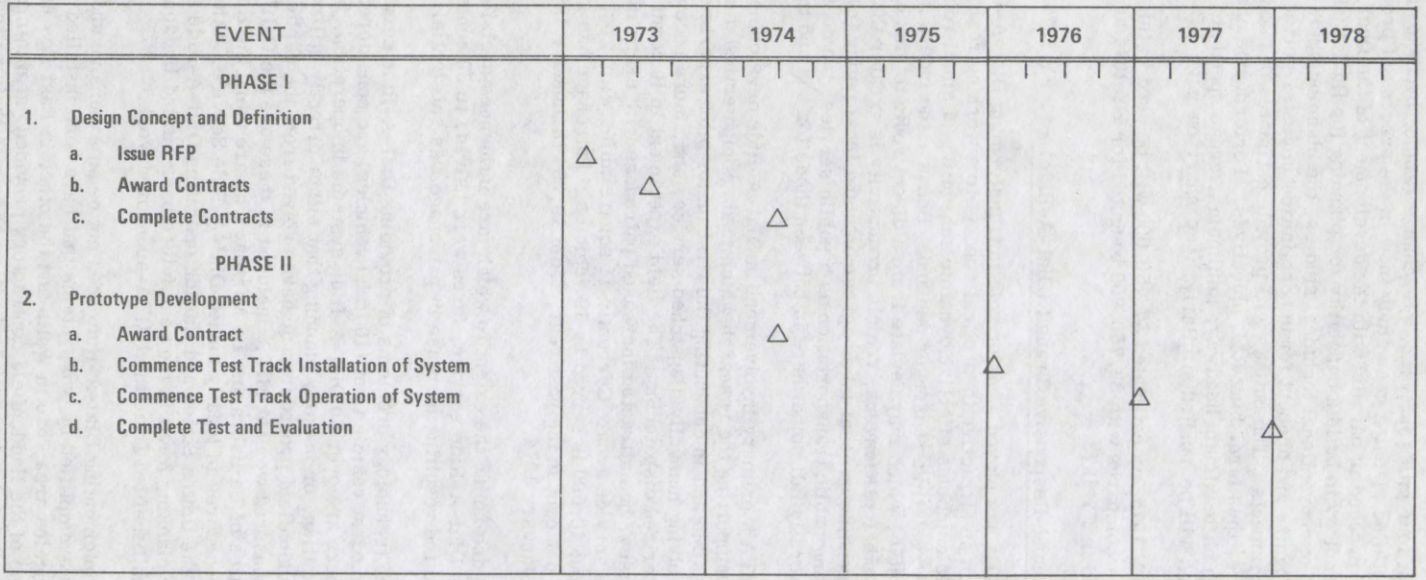
To determine the extent to which fare influences decisions to use the Dial-A-Ride service, fares were halved, to 30 cents per ride, and the resulting increase in patronage was substantial.

The technology problems of providing Dial-A-Ride service with a modest vehicle fleet (10 to 20 vehicles) are considered solved. There are over 50 Dial-A-Ride systems in operation, in preparation, or in early planning that either directly utilize the Haddonfield procedures or have evolved from the earlier UMTA-sponsored work at MIT. Included in these are the California cities of La Habra and La Mirada, who are using the Haddonfield procedures in locally funded Dial-A-Ride Service. Other cities in the United States and Canada operating Dial-A-Ride service or planning for it in the near future have visited Haddonfield and benefited from the UMTA-sponsored work.

Implementing Dial-A-Ride need not be an expensive undertaking as exemplified by two systems that have been installed in the Los Angeles area, one in Watts and the other in East Los Angeles. One of the Haddonfield contractors provided, at minimal cost, the manual scheduling technology and some training to local citizens groups who are now operating the systems themselves.

DUAL MODE TRANSIT SYSTEM

MILESTONES BY CALENDAR YEAR



Within the next several months a detailed cost study of the Haddonfield experiment will be completed. UMTA sponsorship of the Haddonfield service, in cooperation with the New Jersey Department of Transportation, is scheduled to end in October 1974. New Jersey is weighing continuation of the service against heavy demand for Dial-A-Ride in other localities. A decision will be forthcoming within the next few months.

Work in FY 1975 will concentrate on improving the system already developed and in developing the automation needed for larger service areas. Dial-A-Ride's appeal lies in its ability to serve low demand-density areas such as the suburbs, which typically have inadequate public transportation, if any at all.

Current Dial-A-Ride technology, however, will not permit expansion to regional (e.g., county-wide) service without development of new techniques for coordinating longer trips involving transfer to either line-haul bus service or across the boundaries of established Dial-A-Ride service areas. Computer programs are needed for this purpose as well as hardware and computerized backup to enable computer-dispatched systems to recover effectively in the event of a computer malfunction. The Haddonfield system is currently backed up by a manual crew which takes over in the event of computer failure. A larger system would become unwieldly for manual techniques and a computer failure might lead to loss of vital information on trips in progress, location, the destination of vehicles, and the status of requests for service. UMTA will develop and test means of overcoming these limitations. (See chart on page PE-71)

In FY 1975, an estimated $1,500,000 will be used in this research. This compares with $2,200,000 budgeted in FY 1974 and $2,247,000 used in FY 1973.

4. Software Systems — FY 1975: $3,000,000 (Transportation Systems Center $150,000)

Financial Summary

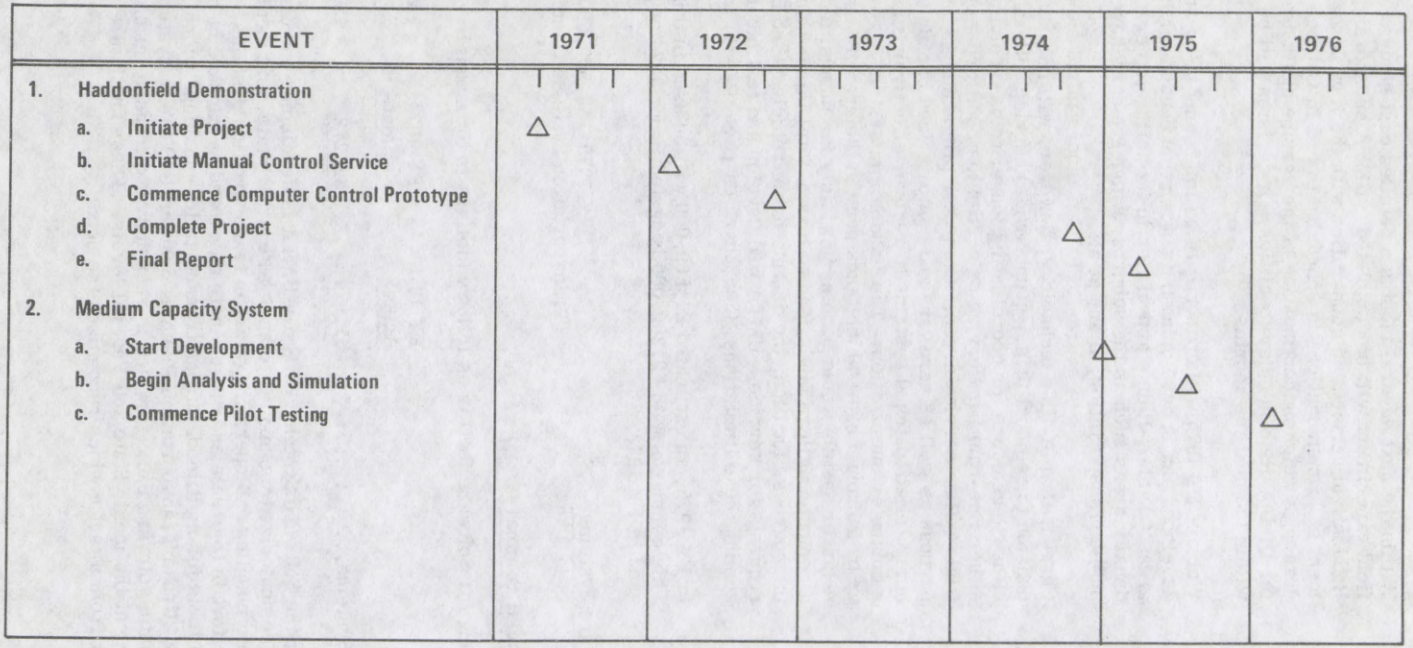
Funding for Software R&D is as follows (dollars in thousands):

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Software Systems.....	$1,974	$2,278	$3,000

Under the Software Systems category UMTA is developing and disseminating new, computerized techniques to assist Federal, State, and local agencies in their planning and operation of urban transportation systems. The goal of this effort is to create and disseminate an expanding package of computer-based tools for multimodal urban transportation planning, which is known as the "Urban Transportation Planning System (UTPS)", a systematic and economic software package which is responsive to transportation decision making at the local, State and Federal levels. These and future products result from a tactic which recognizes the need:

DEMAND RESPONSIVE SYSTEMS (DIAL-A-RIDE)

MILESTONES BY CALENDAR YEAR



1. To continue development of long-range planning tools which allow quick and inexpensive comprehensive evaluation of alternative multimodal transportation strategies;

2. To significantly improve local capability to discover and assess low-cost methods of optimizing the person-movement, convenience and capacity of their existing transportation systems;

3. To integrate the above into a unified UMTA-FHWA urban transportation planning procedure which exploits the capabilities of advanced computing machinery; and

4. To disseminate these procedures to local planners in the most expeditious manner.

In the planning stage, transportation systems are represented parametrically in terms of route alignments, vehicle capacities, headways, delays, station capacities, etc. Effectiveness of a planned system is measured by predicted patronage, costs, benefits, effect on land use, air and noise pollution, energy consumption, etc. Using both computerized and manual approaches to planning, UTPS comprises the most advanced techniques for dealing with these complex factors.

Enthusiasm of UTPS users continues at a high level, as is evidenced by the 30% increase in the number of users in the last year. Presently, more than 130 state and local groups are using UTPS. Four training sessions in the use of UTPS were offered during FY 1974 in various locations throughout the United States, and the number of applicants for these training sessions was three times the number of people that space could accommodate. Newsletters and technical bulletins were furnished to over 1,700 transportation planners who had requested that they be kept informed of all UTPS developments.

During FY 1974, UTPS research and development activities were highly productive. A prototype strategic planning model which permits rapid, cost effective examination of future transportation alternatives has been developed and is in preliminary testing. UTPS's long-range tactical planning tools have been greatly enhanced as a result of research breakthroughs in the areas of network equilibrium and multimodal demand forecasting. In addition, major R&D efforts have been initiated which will yield tools for planning near-term, low-capital improvements and evaluating existing transportation service.

The UTPS software package for evaluating transportation plans was dramatically improved, most notably by a comprehensive highway system analysis program and a flexible multimodal demand model. In addition, improved evaluation measures are now available, including level of service, system cost, air pollution, energy consumption and accident and fatality measures. The present package now contains thirteen programs. Eight of these are new and five are modified existing programs. Attendant new documentation includes tutorial information regarding demand forecasting, network modeling, and system evaluation as well as improved UTPS operating instructions.

UMTA and the Federal Highway Administration have agreed that they should combine their efforts in developing transportation planning tools, and that a single, unified package of computer programs should be jointly developed, distributed and supported. To this end, UTPS software has been revised to accept data in formats output by FHWA software. The combined package will be available to state and local planners in FY 1975.

All of the above products support activities funded by UMTA Technical Studies grants, and UTPS will facilitate both the effective generation and efficient evaluation of Capital Grant applications. Because of the crucial need, near-term benefits, and wide-spread utility of this project's products, it has become an important link in solving the urban transportation crisis. (See charts on pages PE-74 thru 76)

In FY 1975, an estimated $3,000,000 will be used in this research. This compares with $2,278,000 budgeted in FY 1974 and $1,974,000 used in FY 1973.

5. Systems Analysis and Evaluation — FY 1975: $1,000,000 (Transportation Systems Center $270,000)

Financial Summary for Systems Analysis and Evaluation follows (dollars in thousands):

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Systems Analysis & Evaluation.....	$409	$703	$1,000

R&D in Systems Analysis and Evaluation includes contract and in-house efforts related to formulating plans for the UMTA R&D subactivity, analyzing and evaluating ongoing and proposed R&D projects, conducting program design studies, devising and implementing experimental designs, and performing analytical studies needed to support R&D decision making and ongoing or planned projects. Program design studies are intended to provide quantitative cost and benefit estimates and to suggest strategies for conducting R&D projects in promising new areas. Experimental designs established a statistical framework for measuring the attainment of project objectives and permit analyzing the results in such a manner as to elicit and organize information which is transferable to other urban areas.

Subactivity B.

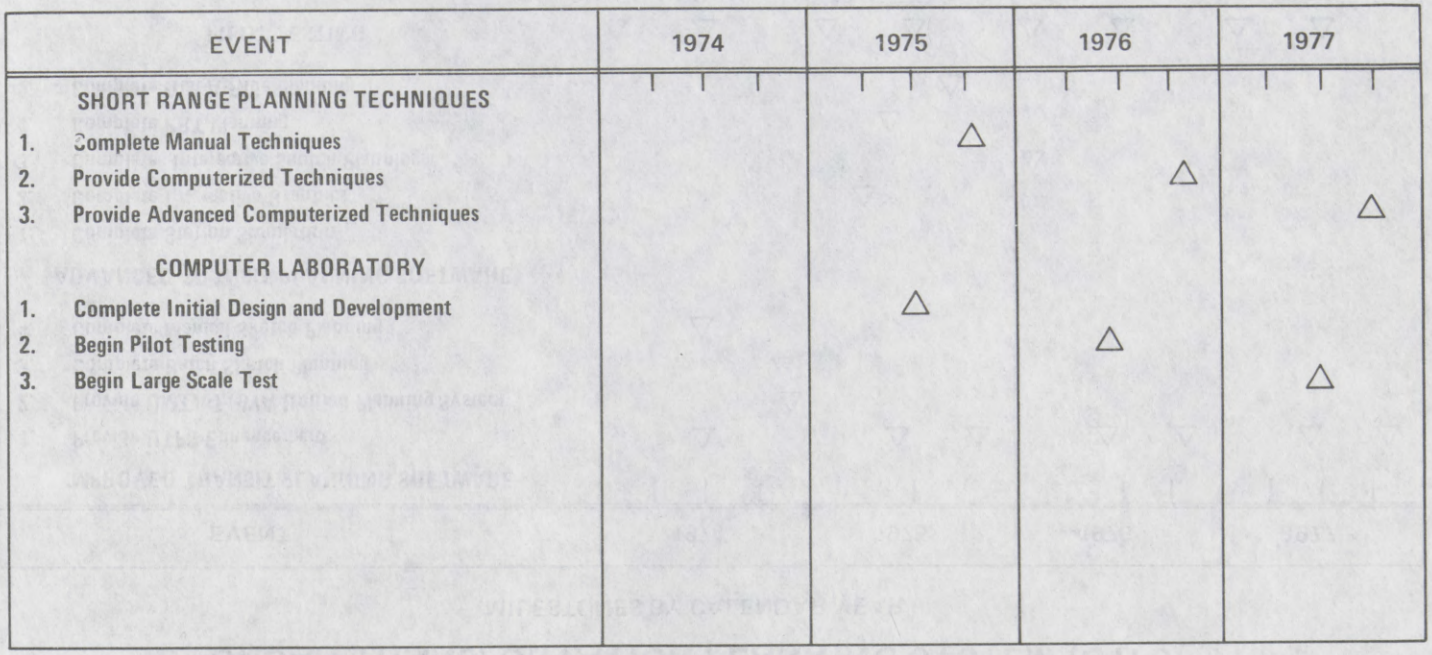
OPERATING DEMONSTRATIONS — FY 1975: $18,750,000

Financial Summary

The Transit Service and Methods Innovations effort includes Research and Development as well as Demonstration projects as follows (dollars in thousands):

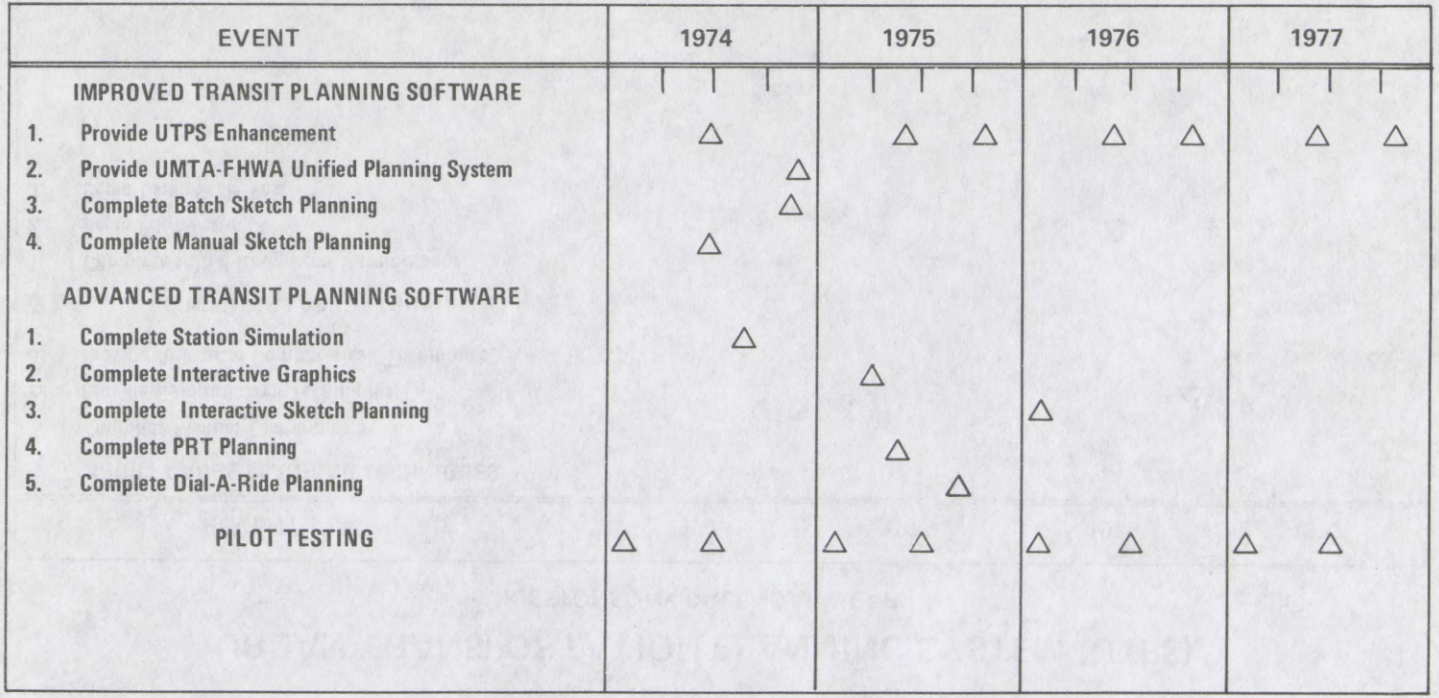
URBAN TRANSPORTATION PLANNING SYSTEM (UTPS)

MILESTONES BY CALENDAR YEAR



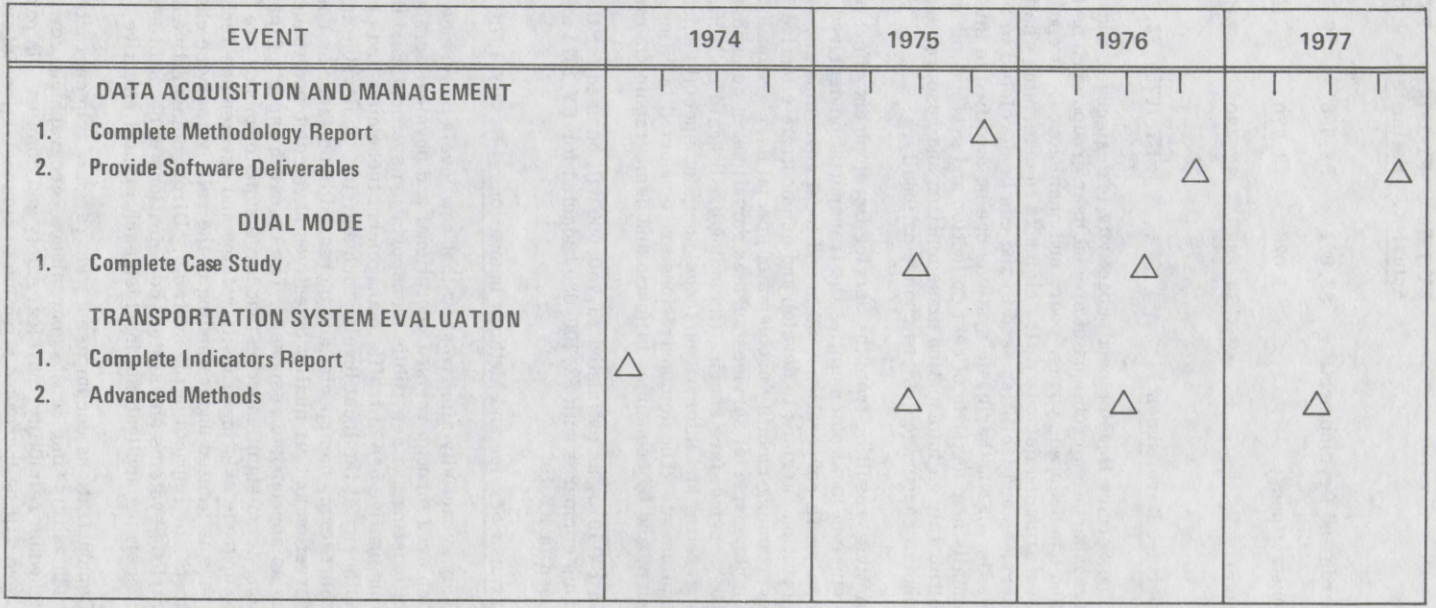
URBAN TRANSPORTATION PLANNING SYSTEM (UTPS)

MILESTONES BY CALENDAR YEAR



URBAN TRANSPORTATION PLANNING SYSTEM (UTPS)

MILESTONES BY CALENDAR YEAR



	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Research and Development...	$2,862	$2,650	$ 450
Demonstrations.....	2,026	4,770	18,300
Total.....	$4,888	$7,420	$18,750

1. Service Development — FY 1975: $3,750,000

The Service Development subactivity is designed to address the transportation problems of special user groups such as the elderly and handicapped, young, poor, and unemployed. It consists of research and demonstration elements to determine whether special services and facilities need to and can be developed to meet their needs, or whether basic systems can be modified to this end. This entails new methods of data collection and systems planning; and ultimately an information dissemination and resource management plan to encourage desired change nationally.

Activity resulting from the Service Development effort brings together in local communities the transportation deprived, private, non-profit corporations, State and local governments, and transportation carriers to develop and demonstrate effective tools for overcoming mobility problems of special user groups. The effort employs special services such as variations of demand-responsive bus service; fare sharing (including credit-card collection methods), marketing and information techniques; and special vehicles and equipment. The demonstrations are conducted in cities classified by size, and by economic, climatic and demographic characteristics.

In FY 1975, an estimated $3,750,000 will be used for this effort. This compares with $2,200,000 budgeted for FY 1974 and $2,862,000 used in FY 1973.

2. Transit Service and Methods Innovations — FY 1975: $15,000,000

This subactivity aims to show that new levels of service can be achieved through revised operational and physical arrangements of existing and new public transportation systems, and through imaginative use of traffic management techniques and pricing authority at the local level. Such activity, achievable in the short term, has special and increased importance as energy conservation and air quality objectives have combined to elevate transit as an appropriate response. The research aspect of the activity has long-term significance in that large sums of money are being spent to upgrade existing transit systems and develop new techniques, while there is limited understanding of the relative service characteristics, costs, or impacts of the systems. Direct comparative data on various systems and system combinations is needed to gain insight concerning applications in which each is most effective.

Demonstrations encompass a wide range of trip characteristics such as trip time, cost, convenience, geographical coverage, schedule reliability, physical safety and comfort. In particular, there will be increased attention to demonstrations of transit trip time reductions relative to trip time by automobile. As

demonstrations reduce uncertainty and test feasibility, showing the utility of things demonstrated, they can become powerful instruments of change in the performance of transit systems.

This subactivity includes two major elements of the current program, operating demonstrations and intermodal integration. UMTA has been conducting a variety of transit service demonstrations designed to identify and "prove out" readily available means for improving transit service, particularly in high-volume traffic corridors in peak hours. One example, the Washington, D. C. area Shirley Highway express bus project has had outstanding success in attracting new transit users to fill to capacity the additional 90 buses added in the project service area. Future efforts will explore the feasibility of operating reserved lanes for use by carpools, as well as buses, and experimentation with improved collection and distribution service to link suburban line haul bus lines with major activity areas downtown.

The types of efforts, described in the past under the category "intermodal integration", will also be subsumed in response to objectives around which service and methods demonstrations will be structured. Such intermodal efforts include the use of conventional modes of urban mass transportation (such as bus and rail), and also para-transit (taxis, shuttles, charters, rental vehicles, jitneys and other flexible firms of urban transportation). Coordination of passenger traffic and urban goods movement by truck or other vehicle is also encompassed in the broader framework.

In FY 1975, an estimated $15,000,000 will be used in this effort. This compares with $5,220,000 budgeted in FY 1974 and $2,026,000 used in FY 1973.

Subactivity C.

TRANSIT MANAGEMENT — FY 1975: $5,000,000 (Transportation Systems Center $650,000)

The Transit Management effort includes Research and Development as well as Demonstration Projects as follows (dollars in thousands):

	FY 1973 Actual	FY 1974 Estimate	FY 1975 Estimate
Research and Development	$ ...	$ ...	$2,500
Demonstrations	2,129	2,920	2,500
Total	$ 2,129	$ 2,920	$5,000

This subactivity supports the newly established UMTA Office of Transit Management, which is responsible for initiating, developing and demonstrating projects that will improve methods of managing transit systems. Activities

of the office will be concerned with conducting and coordinating a safety effort; managing the Transit Research Information Center; managing the Managerial Training Program and providing technical support in manpower and training functions; providing for improvements in operations and maintenance, marketing and product development, and internal management procedures; and maintaining liaison and developing cooperative relationships with state and local transit management. These activities will be implemented through and by gathering and dissemination of information, provision of technical support; conduct of research projects, and conduct and evaluation of pilot tests.

Principal on-going efforts to be continued are: (1) the development of computer-aided management systems; (2) the development of automatic fare collection and automatic passenger counting equipment; (3) improved public information system; and (4) the transit marketing project. New initiatives will be undertaken to improve maintenance practices, internal management procedures in the area of maintenance standards, insurance, marketing, cash management, and accounting and management reporting systems. In addition, projects will be undertaken to aid in improving personnel selection, training, and administration.

In FY 1975, an estimated $5,000,000 will be used in this research. This compares with $2,920,000 budgeted for FY 1974 and $2,129,000 used in FY 1973.

Subactivity D.

PLANNING RESEARCH FY 1975: $1,000,000

This subactivity finances special policy studies, research on planning methods and development of data and techniques for systematic program evaluation. The following projects approved during fiscal year 1973 illustrate the nature of topics involved:

-- Design and analysis of rapid bus alternatives (joint with FHWA);

-- Identify and develop alternative policy responses for dealing with impacts of transportation facilities outside of right-of-way;

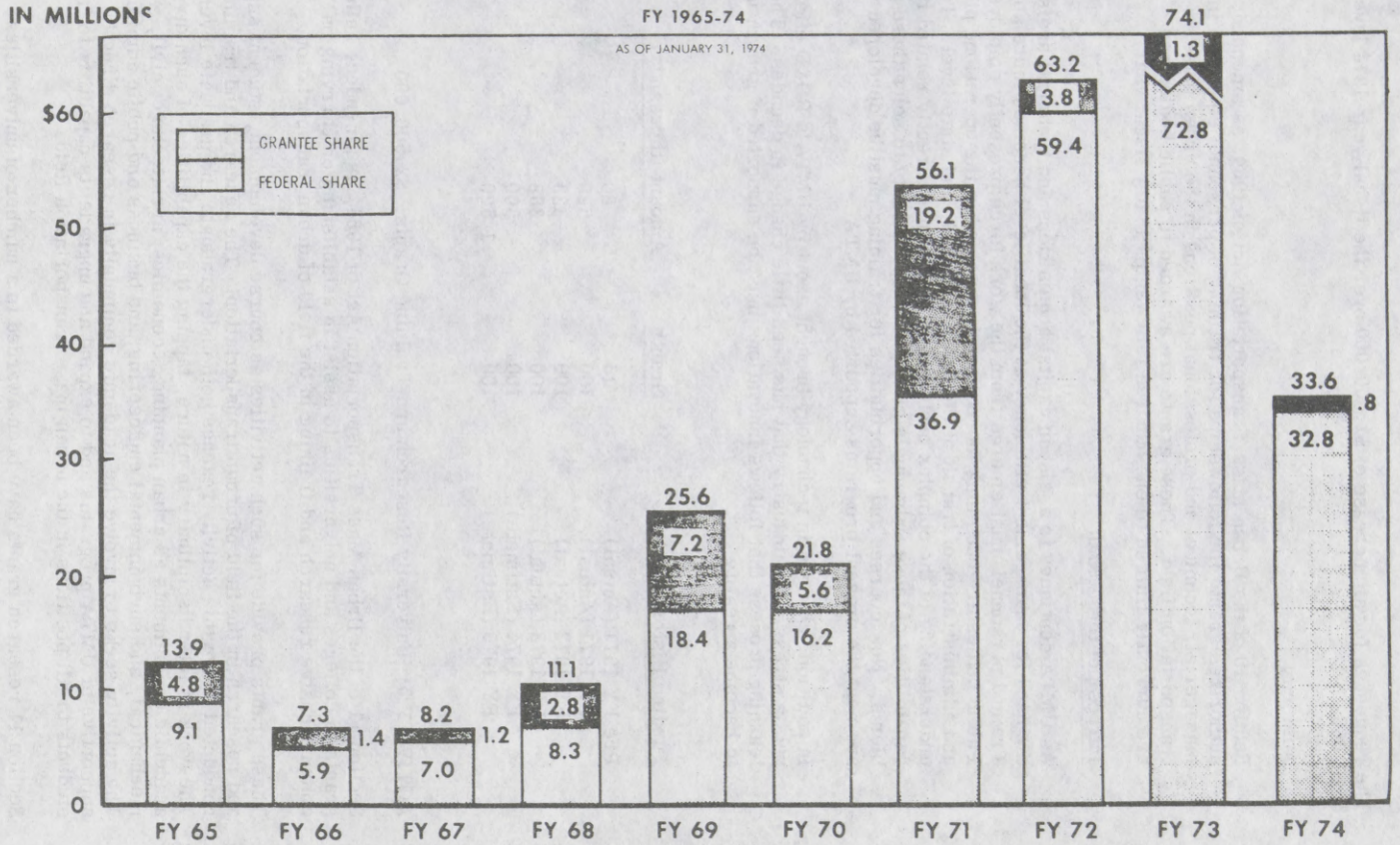
-- Study of extent of authority among existing metropolitan agencies to plan and carry out transportation projects; and,

-- Development of technical plans and the design of analytic techniques to help meet UMTA's information requirements for implementation of the capital grant guidelines, with emphasis on guidelines for replacement of transit equipment and facilities and on mobility requirements of the disadvantaged.

In FY 1975, an estimated $1,000,000 will be used in this effort. This compares with $600,000 budgeted for FY 1974 and $202,000 used in FY 1973.

RESEARCH DEVELOPMENT AND DEMONSTRATIONS

Cost of Projects and Amendments Approved



ACTIVITY 4: Managerial Training Grants--$1,500,000

The request is for an increase of $1,000,000 over the fiscal year 1974 level of $500,000.

Authority

Section 10 of the Urban Mass Transportation Act of 1964, as amended, authorizes grants for fellowships for training of personnel employed in managerial, technical and professional positions in the urban mass transportation field. These grants are awarded to public bodies and are currently limited to one hundred fellowships in any fiscal year.

Purpose of the Grants

As UMTA continues to assist in capital acquisitions and technical assistance, the need for management efficiency at the local level becomes more apparent. Trained personnel must emerge from the work force presently employed. Public bodies are becoming more directly involved in the operation, planning, and administration of transit at the local, regional, and state level. Their understanding of the complex problems of transit are directly related to the capabilities of these individuals given the responsibility to solve these problems. New courses and opportunities for training must be developed to augment the present programs supported by UMTA.

In addition, changes in technology brought about by UMTA's RD&D efforts puts a stress on an industry that has seen little change in decades. The learning process that follows innovations must be supported if growth is to become a reality.

Funding History	Grants	Amount (thousands)
Pre FY 1971 (Actual)	16	$ 80
FY 1971 (Actual)	100	520
FY 1972 (Actual)	100	333
FY 1973 (Actual)	100	368
FY 1974 (Estimate)	100	500
FY 1975 (Estimate)	100	1,500

ACTIVITY 5: University Research and Training Grants: $2,500,000

Section 11 of the Urban Mass Transportation Act of 1964, as amended, authorizes grants to colleges and universities to assist in establishing or carrying on comprehensive research and training in the field of urban transportation.

These grants provide for such activities as course development, student support, and research in the field of urban transportation. The research and training conducted under this activity reaches both undergraduate and graduate levels. The work is interdisciplinary in nature, tapping the capabilities of such diverse academic departments as urban planning, economics; architecture; civil, mechanical, and environmental engineering; and business and public administration. The activity seeks to involve the academic community in research directly supportive of UMTA programs and to expand and upgrade its capability to train students to fill positions in the urban mass transportation field.

Section 11 research grants have been awarded to a number of universities for work directly related to various UMTA programs and additional ones are

under consideration. Examples are grants to the Polytechnic Institute of New York and the University of Illinois-Chicago Circle, to study the rail rapid transit system noise climates of New York and Chicago respectively plus possible noise abatement techniques and effectiveness of such techniques. These efforts support the UMTA Urban Rail Supporting Technology Program. A grant to Massachusetts Institute of Technology is providing support to the PRT program in the area of vehicle/guideway interaction dynamics. Pratt Institute is expected to be given a grant to undertake research on low pollution paratransit vehicles to assist UMTA in its vehicle design and construction program for such a vehicle.

A University Research and Training grant was awarded in FY 1974 to George Washington University to study how UMTA can restructure its relationship with the academic community to better serve both UMTA's needs and those of the nation's urban transportation activities. Its objective was to determine how research and training centers at institutions of higher learning can best be organized to interface their activities with urban transportation policy and program requirements. The final report of this study has been received and is being reviewed by UMTA in terms of its implications for the University Research and Training Program.

Preliminary review indicates that some changes can be profitably made to the present program with beneficial results. Final decisions will be made after intensive study of the report is completed.

ACTIVITY 6: Capital Facilities Loans (no amount planned; however, sufficient authority exists to channel authorities from Activity 1 to loans as required).

General

The mass transportation loan activity was initially authorized by the Housing Act of 1962. The original authorization expired on December 31, 1972, and was subsequently extended to June 30, 1963. The loan activity was then reactivated by Congress in the Urban Mass Transportation Act of 1964 without a terminal date. The 1970 Amendments to the Act (Urban Mass Transportation Assistance Act of 1970) rewrote Section 3 of the 1964 Act which provides the substantive legal authority for the loan activity. Loans under this provision of law have been delineated between two basic purposes: (1) loans to aid in the acquisition, construction, reconstruction and improvement of transit-related equipment and facilities; and (2) loans to aid in the advance acquisition of real property that will be used in the future for transit operations.

Facilities and Equipment Loans

This type of loan activity--started in 1961--is useful in special situations as illustrated by the following examples: (1) where a local public agency is unable to market tax-exempt revenue bonds at reasonable rates because of a poor credit rating, even though the agency is responsible for essential public transit operations, and revenues appear adequate to service debt; (2) where an eligible local public body, which is without resources to provide a local matching grant, must assist a private carrier; or (3) where the mere prospect of a Government loan may favorably affect the private money market resulting in more favorable terms thus making the Government loan itself unnecessary. The loan activity, although seldom used in the past, is occasionally the only means for financially assisting urban communities to meet their mass transportation demands. No such loans are programmed for FY 1975. As of January 1974, there were two approved loans. The loan made to the Rhode Island Public Transit Authority for $3,100,000 had been in arrears since 1969. In the interest of both

parties, UMTA refinanced the entire loan. Under the new loan agreement the amortization is modified to have a multicurtailment of principal with an initial interest payment due on June 30, 1975, at which time an adjustment will be made of principal from $3,075,000 to $3,582,000 (to affect a basis for amortizing unpaid interest) and, thence, beginning a regular schedule of payments which terminates on June 30, 2006. The loan to Passenger Service Improvement Corporation of Philadelphia is current.

The following provides information on the status of these loans (in millions of dollars):

Borrower	Purpose	Amount Loaned	Principal Repayment	Outstanding Balance	Maturity Date
Passenger Service Improvement Corporation of Philadelphia	Purchase 12 Diesel Rail Cars.....	$3.00	$1.80	$1.20	12/1/74
Rhode Island Public Transit Authority	Purchase Assets of Privately owned Bus Company.....	$3.58	...	$3.58	6/30/06

Advanced Real Estate Acquisition Loans

The 1970 revision of Section 3 of the Urban Mass Transportation Act permits loans for real property acquisition if the property is reasonably expected to be required in connection with a mass transportation system and that the real property will be used for that purpose within a reasonable period. Loans made pursuant to this provision are designed to provide the qualified applicant with the resources needed to acquire rights-of-way, parking space; and loans for future facilities needed in extending or building transit systems.

Assets so acquired will be used as a part of planned transit improvement which seem likely to be built (candidates for capital grant assistance) within the next ten years. Congress in passing this Act made a provision that such loans could be retired through the future capital grants. Thus, loans made under the advance real estate acquisition provisions of the Act are forerunners of transit projects that will become elements of the Capital grant activity in future years.

There is one loan outstanding for advanced land acquisition. In fiscal year 1973, Massachusetts Bay Area Transportation borrowed $19 million.

There are five such loan applications currently on hand which request $9.3 million in UMTA funds. There is a possibility that one or more of these loan applications may be approved. Budget schedules do not reflect potential loans since sufficient authority exists to approve loans and the experience in this area is such that there is difficulty in estimating when all conditions precedent can be satisfied.

ACTIVITY 7: Administrative Expenses--$9,300,000, an increase of $2,300,000 over the activity level, and $4,300,000 over the appropriation for 1974.

Summary of Personnel Increases

(Data is conformed to new organization structure)

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Headquarters:				
Office of Research & Development	68	73	80	+ 7
Office of Capital Assistance	52	54	62	+ 8
Office of Transit Planning	30	30	38	+ 8
Office of Transit Management	9	15	19	+ 4
Office of Administration	57	61	65	+ 4
Office of Program Planning	23	26	28	+ 2
Office of the Chief Counsel	20	20	23	+ 3
Office of Civil Rights	15	23	23	...
Office of Public Affairs	6	6	6	...
Office of the Administrator	8	8	8	...
Total, Headquarters	288	316	352	+36
Field Operations	45	45	49	+ 4
Grand Total	333	361[a/]	401	+40

a/ This number is less than the 363 reflected in Senate Report No. 93-346, due to transfer of 2 positions to the Federal Railroad Administration as resources associated with the UTACV project.

General

During FY 1974, the Urban Mass Transportation Administration was restructured to provide centers of concentrated focus on selected program functions. Establishment of two new offices--Transit Management and Transit Planning--strengthens UMTA's ability to apply available resources to aid State and local officials, including officials responsible for furnishing transit services, in seeking solutions to managerial and planning problems.

Transit management techniques have not kept pace with the changes which have occurred both in the transit industry and in the science of management. Attention to the various aspects of management in the transit community has suffered as a result of the industry's general economic problems (e. g., lack of sufficient capital and failure to operate at a break-even point.) The Office of Transit Management, working in cooperation with public and private transit officials will review all aspects of transit management to evolve an approach which will offer improvements in management control techniques, marketing, personnel development, organization, and financing.

Both UMTA and the transit community view this new emphasis as an integral component of providing more economic, efficient, and satisfactory transit services to the urban areas.

Transit planning has long been recognized as essential to transit improvement efforts. Congress, in passing the Urban Mass Transportation Act of 1964, and subsequent amendments, has included provisions which expressly require transit planning in a manner complementary to regional planning. Enactment of the Federal-Aid Highway Act of 1973 (PL 93-87 provided a statutory vehicle to formalize an intermodal planning effort which in the past involved components of the Department of Transportation (UMTA, FHWA, FAA and FRA) working with State and local officials to assure that any modal planning project recognized, and addressed, intermodal implications. To give more recognition to this important activity, it was separated from the capital assistance function and established as a separate office--the Office of Transit Planning. In addition, demonstration activities from the former Office of Civil Rights and Service Development and Research, Development and Demonstrations have been consolidated in this new office, to help ensure that the demonstrations UMTA sponsors are relevant to the needs of urban transportation and that the results of successful demonstrations are quickly disseminated to transit planners in all cities.

Position resources adjustments to accomplish the reorganization were as follows:

Summary of Position Resource
Adjustments for Reorganization

Detail	Fiscal Year 1974 Prior Assignment	Adjustments (+ and -)	Current Estimate
Office of Research and Development	87	-14	73
Office of Capital Assistance (Formerly, Office of Program Operations)	75	-21	54
Office of Transit Planning	...	+30	30
Office of Transit Management.....	...	+15	15
Office of Administration	61	...	61
Office of Program Planning	27	- 1	26
Office of the Chief Counsel.....	20	...	20
Office of Civil Rights (Formerly, Office of Civil Rights and Service Development)	23	...	23
Office of Public Affairs	6	...	6
Office of Morgantown Project	9	- 9	...
Office of the Administrator	8	...	8
Total, Headquarters	316	...	316
Field Operations	45	...	45
Grand Total.....	361	...	361

The detail information and justification for the position estimate in FY 1975 follows.

OFFICE OF RESEARCH AND DEVELOPMENT

Mission

To undertake research and development for the improvement of urban transportation within the context of the UMTA program and objectives. Research and Development activities are directed toward improving facilities, equipment, and methods of urban mass transportation through analysis, experiment, design specification, prototype fabrication, test and evaluation prior to revenue service.

Function

This office is responsible for:

1. Initiating and developing, in coordination with the Office of the Secretary and other operating administrations, a research and development activity in the areas of bus, rail, and innovative transportation systems;

2. Administering approved projects and providing technical direction as needed to assure compliance with contract terms and the attainment of prescribed objectives;

3. Evaluating results of R&D project activities with regard to the efficiency of individual projects, the furtherance of the contribution to the achievement of UMTA's overall goals and objectives;

4. Assembling and analyzing technical and other data related to pertinent aspects of urban mass transportation research and development; and

5. Maintaining liaison and developing cooperative working relationships with the research and development community, various technical groups, and government agencies having interests related to urban mass transportation research.

There follows a tabulation of position resources required for this office:

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Immediate Office of the Associate Administrator				
Associate Administrator	1	1	1	...
Secretary	1	1	1	...
Deputy Associate Administrator	1	1	1	...
Special Assistant	1	1	1	...
Professional	1	1	1	...
Clerical/Stenographic	2	2	2	...
Subtotal	7	7	7	...
Support Staff				
Professional	6	6	7	+ 1
Clerical/Stenographic	4	4	4	...
Subtotal	10	10	11	+ 1

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Systems Analysis and Evaluation Division				
Professional	5	6	7	+ 1
Clerical/Stenographic	2	2	2	...
Subtotal	7	8	9	+ 1
Bus and Rail Systems Division				
Professional	9	9	11	+ 2
Clerical/Stenographic	4	4	5	+ 1
Subtotal	13	13	16	+ 3
Morgantown Division				
Professional	3	3	3	...
Clerical/Stenographic	1	1	1	...
Subtotal	4	4	4	...
New Systems Division				
Professional	9	11	13	+ 2
Clerical/Stenographic	5	5	5	...
Subtotal	14	16	18	+ 2
Software Systems Division				
Professional	6	7	7	...
Clerical/Stenographic	3	4	4	...
Subtotal	9	11	11	...
Research and Evaluation Division				
Professional	3	3	3	...
Clerical/Stenographic	1	1	1	...
Subtotal	4	4	4	...
Total	68	73	80	+ 7

Explanation of Increases

1. One additional professional added to the Support Staff to permit increased attention to details of programming, budgeting, and reporting of R&D projects.

2. One additional professional in the Systems Analysis and Evaluation Division to assist in developing analytical tools which will assist State and local governments in determining needs and evaluating proposals for transit improvement.

3. Two additional professionals in the Bus and Rail Systems Division to coordinate the activities of the Bus and Rail Branches.

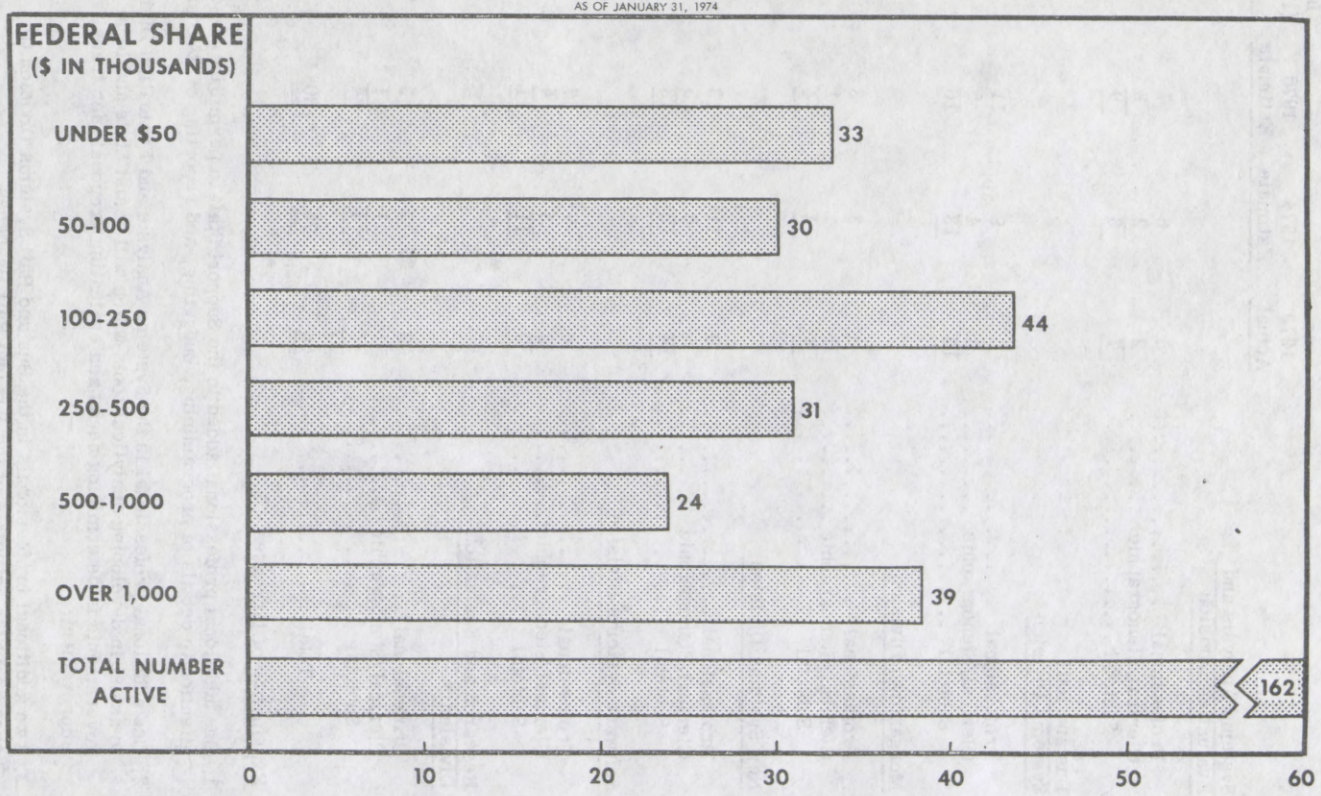
4. One additional clerical/stenographic to support the professional staff.

5. One additional professional in the New Systems Division to assist in supervising grants and contracts involving technology improvements.

RESEARCH DEVELOPMENT AND DEMONSTRATIONS

NUMBER OF ACTIVE PROJECTS

AS OF JANUARY 31, 1974



OFFICE OF CAPITAL ASSISTANCE

Mission

To provide grants and loans to local, public bodies to assist them in acquiring, constructing, and improving facilities and equipment for mass transportation services in urban areas, for advance acquisition of real property for use in planning urban mass transportation systems.

Function

This office is responsible for:

1. Assisting applicants in the development of applications to an approvable form;

2. Supervising approved urban mass transportation projects to ensure grantee compliance with grant-contract terms and the required standards of project management;

3. Supervising relocation programs established in connection with approved projects to ensure compliance with grant-contract terms and relocation policies; and

4. Acting as an advisor on environmental impacts of proposed capital assistance projects.

There follows a tabulation of position resources required for this office:

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Immediate Office of the Associate Administrator				
Associate Administrator	1	1	1	...
Secretary	1	1	1	...
Professional	3	3	3	...
Clerical/Stenographic	2	2	2	...
Subtotal	7	7	7	...
Project Development Division				
Professional	16	17	18	+ 1
Clerical/Stenographic	5	5	5	...
Subtotal	21	22	23	+ 1
Project Management Division				
Professional	15	16	18	+ 2
Clerical/Stenographic	4	4	5	+ 1
Subtotal	19	20	23	+ 3

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Technical Assistance Division				
Professional	4	4	7	+ 3
Clerical/Stenographic	1	1	2	+ 1
Subtotal	5	5	9	+ 4
Total	52	54	62	+ 8

Explanation of Increases

1. One additional professional in the Project Development Division to strengthen ability to review and evaluate capital grant applications in view of further refinement of capital grant guidelines.

2. Two additional professionals in the Project Management Division to review routine specifications and progress reports and to process requisitions.

3. One additional clerical/stenographic to support the professional staff.

4. Three additional professionals in the Technical Assistance Division to (1) provide guidance, direction, and coordination in the areas of environment considerations, transit operations and management, financial analysis, and transportation planning; (2) review capital grant applications that involve large fund requests, complex systems, or system costs; and (3) overview and interpret planning directives and act as internal liaison on planning issues.

5. One additional clerical/stenographic to support the professional staff.

OFFICE OF TRANSIT PLANNING

Mission

To provide assistance in urban transportation planning, engineering, and transit improvement, and conduct demonstrations of advanced transportation systems and techniques in an operational environment.

Function

This office is responsible for:

1. Assisting applicants for assigned grant programs in the development of applications to an approvable form;

2. Supervising approved grant projects to insure compliance with grant contract terms and adequate management by project sponsors;

3. Providing planning assistance to States, local and public agencies, and transit operators regarding the improvement of mass transportation services through grants and staff studies;

4. Evaluating status of comprehensive and transit planning of urban areas and preparing recommendations on planning adequacy for all capital grant and technical study projects;

5. Initiating, developing, and administering, in concert with local and State officials or authorities, projects demonstrating totally integrated transit systems, including the concept of institutional changes needed to promote operational improvements;

6. Administering approved operating demonstration projects and providing technical direction, as required, to assure compliance with contract terms and the attainment of UMTA objectives.

7. Assisting and coordinating, with the Office of Research & Development and the Office of Program Planning, the potentiality of projects contributing to the achievement of UMTA objectives and impact studies of transit improvements;

8. Maintaining liaison and developing cooperative working relationships with State and local planning and operating agencies and other non-public organizations having interests in transit planning and service innovations; and

9. Serving as principal contact and liaison point within UMTA on activities related to planning assistance and involving other offices within DOT, and other Federal agencies, and State and local agencies, in close coordination with the Office of Program Planning.

There follows a tabulation of position resources required for this office:

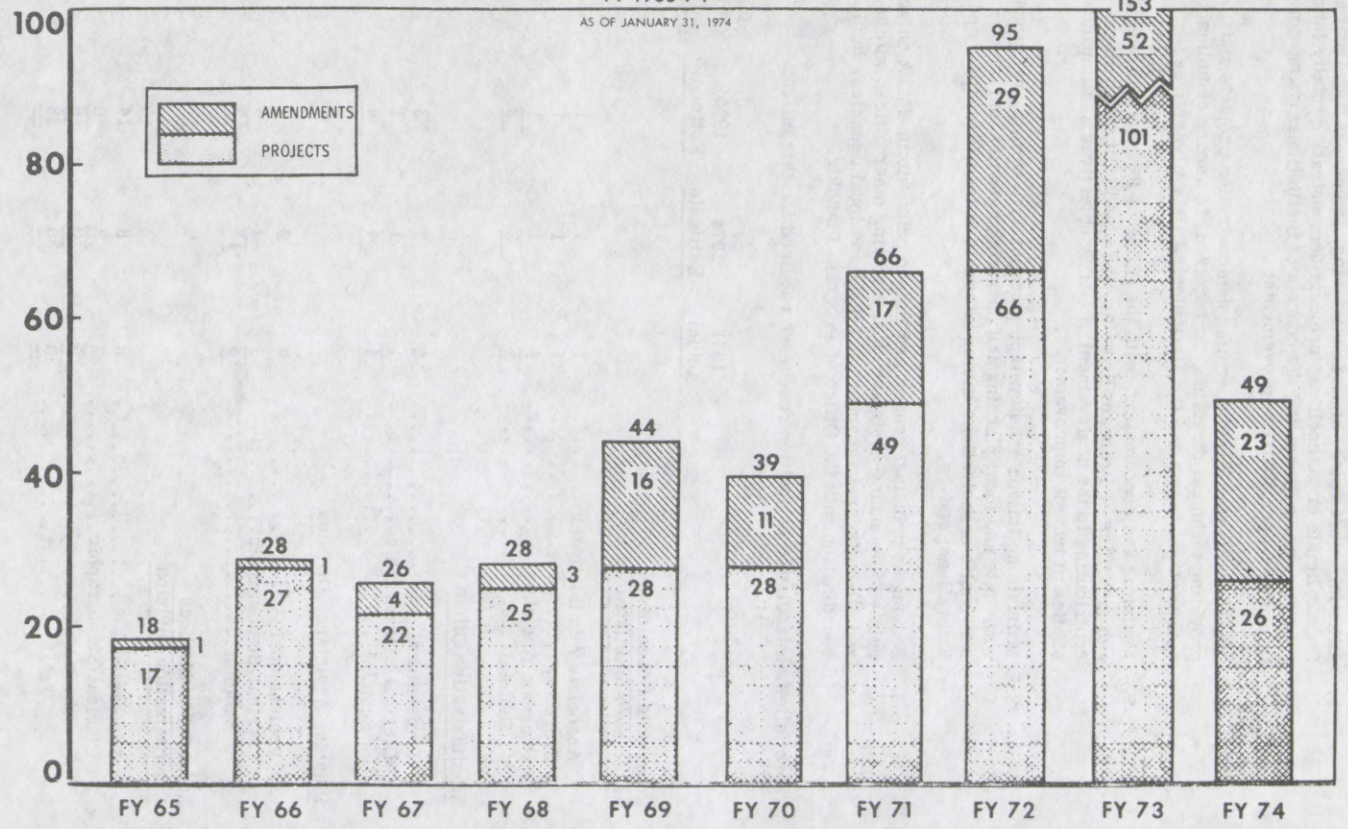
	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Immediate Office of the Associate Administrator				
Associate Administrator	1	1	1	...
Secretary	1	1	1	...
Program Assistant	1	1	1	...
Subtotal	3	3	3	...
Administrative Office				
Professional	3	3	3	...
Clerical/Stenographic	1	1	1	...
Subtotal	4	4	4	...
Planning Assistance Division				
Professional	9	9	9	...
Clerical/Stenographic	4	4	4	...
Subtotal	13	13	13	...
Service and Methods Demonstration Division				
Professional	8	8	14	+ 6
Clerical/Stenographic	2	2	4	+ 2
Subtotal	10	10	18	+ 8
Total	30	30	38	+ 8

CAPITAL GRANTS

NUMBER OF PROJECTS AND AMENDMENTS APPROVED

FY 1965-74

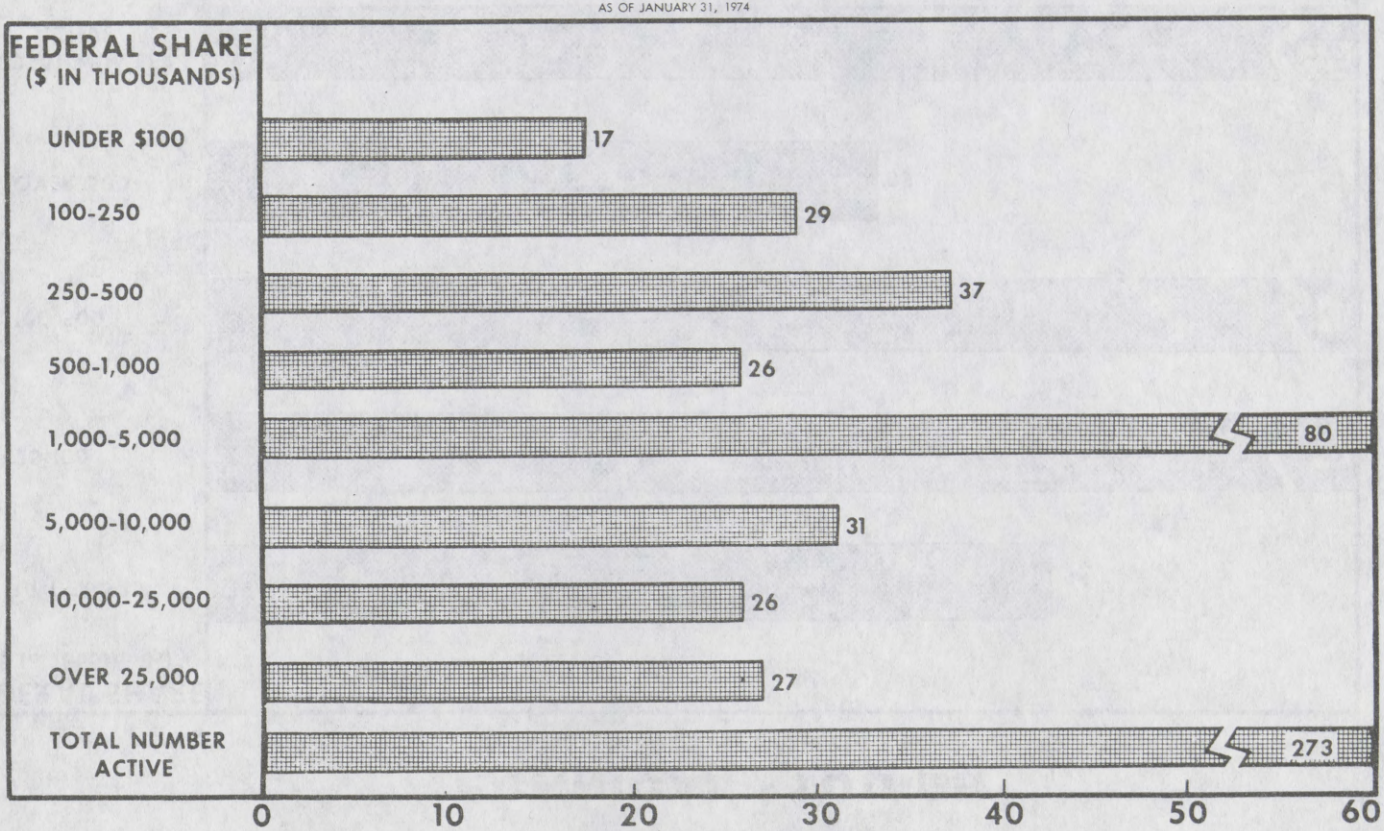
AS OF JANUARY 31, 1974



CAPITAL GRANTS

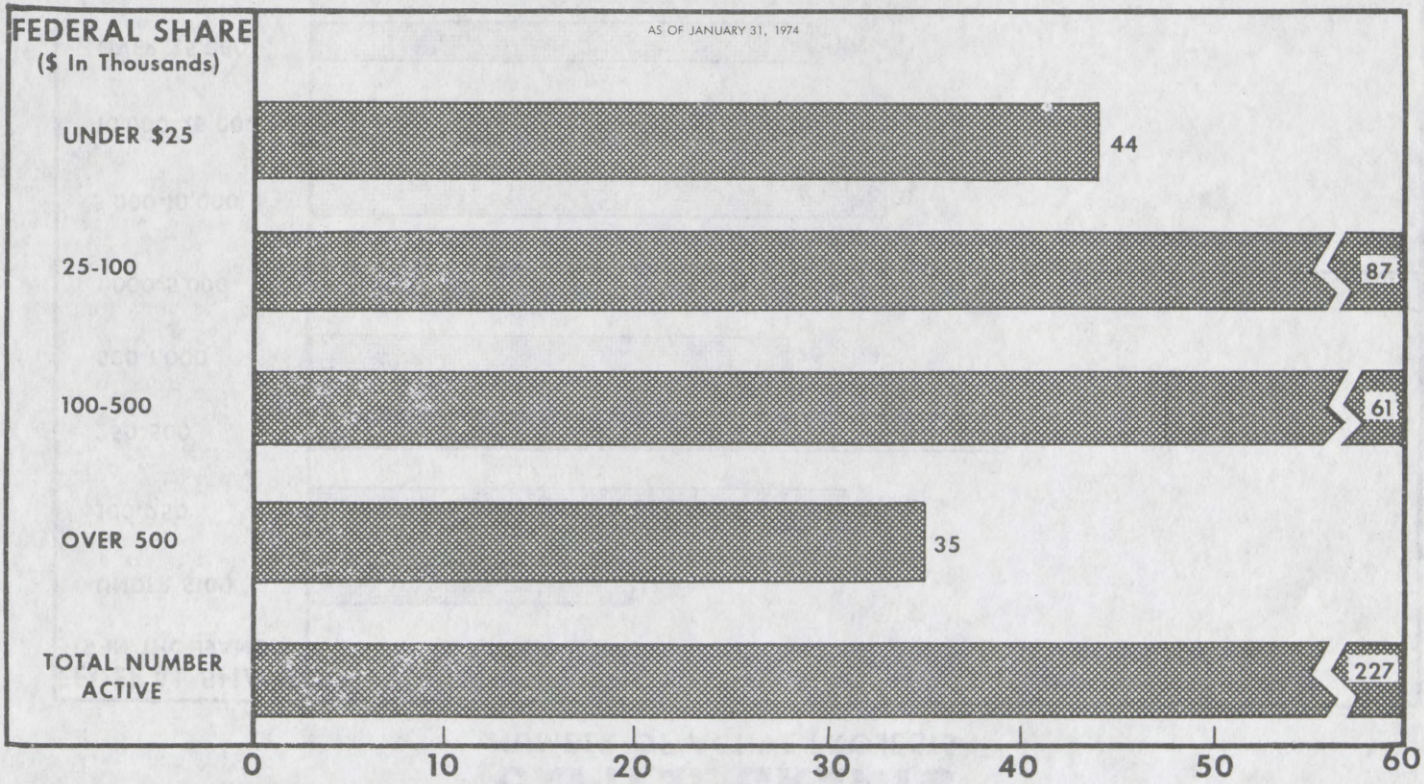
NUMBER OF ACTIVE PROJECTS

AS OF JANUARY 31, 1974



TECHNICAL STUDIES

Number of Active Projects



Explanation of Increases

1. Six additional professionals in the Service and Methods Demonstration Division to increase capability for indepth review and evaluation of grant requests and ongoing projects.

2. Two additional clerical/stenographics to support the professional staff.

OFFICE OF TRANSIT MANAGEMENT

Mission

In cooperation with State and local transit organizations, develops methods to assist in modernizing and improving transit operations, management systems, and to assemble, maintain, and disseminate results of UMTA projects.

Function

This office is responsible for:

1. Initiating, developing and demonstrating projects that will improve existing methods of transit-system management;

2. Planning, conducting, promoting, and coordinating a transit safety program;

3. Managing the UMTA Research Information Center and associated projects for the accumulation, storage, and dissemination of research project information;

4. Maintaining liaision and developing cooperative working relationships with State and local transit organizations and other organizations having interests related to transit management;

5. Providing technical assistance to State and local transit agencies regarding the steps which might be taken to provide aspects of mass transportation management; and

6. Improving managerial abilities of transit operating personnel through managerial training grants and fellowships for personnel employed in urban mass transportation;

There follows a tabulation of position resources required for this office:

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Immediate Office of the Director				
Director	1	1	1	...
Secretary	1	1	1	...
Special Assistant	...	...	1	+ 1
Subtotal	2	2	3	+ 1
Technical Information Research				
Professional	3	6	8	+ 2
Clerical/Stenographic	...	1	1	...
Subtotal	3	7	9	+ 2

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Management/Operations				
Professional	4	5	6	+ 1
Clerical/Stenographic	...	1	1	...
Subtotal	4	6	7	+ 1
Total	9	15	19	+ 4

Explanation of Increases

1. One additional professional in the immediate office of the Director to coordinate administrative and program data of the office.

2. Two additional professionals in the Technical Information Research unit to strengthen capability relative to the accumulation, storage, and dissemination of research information.

3. One additional professional in the Management/Operations unit to strengthen capability of providing technical assistance to State and local transit agencies in improving their transportation management programs.

OFFICE OF ADMINISTRATION

Mission

To serve as the principal advisor to the Administrator on all administrative and management matters as they relate to UMTA missions, programs and objectives; and to provide, or arrange for, administrative and managerial support services for all the elements of UMTA.

Function

This office is responsible for:

1. Providing advice and assistance in all administrative and management areas as they relate to UMTA missions, programs, and goals;

2. Implementing internal administrative policy approved or directed by the Administrator and/or the Secretary;

3. Providing executive direction over organizational elements established to provide specialist services in administration and management;

4. Providing assistance in personnel and training matters for all UMTA employees;

5. Providing principal support for procurement policies to be followed for the conduct of the UMTA program, including evaluation of third-party contracts;

6. Plans and directs the operation of a management analysis program designed to develop or improve management practices, including participation in overall Executive Branch studies;

7. Planning, developing and managing UMTA's logistic and support program in cooperation with OST;

8. Directing UMTA's programs for security and emergency readiness;

9. Specifying requirements and priorities for staff support and services provided to UMTA by other DOT elements, and providing policy guidance, coordination and liaision with appropriate elements in the provision of these services; and

10. Maintaining liaison with counterpart offices within OST as well as with other administrations and agencies.

There follows a tabulation of position resources required for this office:

	Actual	Estimate	Estimate	Increase (1975 over 1974)
Immediate Office of the Associate Administrator				
Associate Administrator	1	1	1	...
Secretary	1	1	1	...
Subtotal	2	2	2	...
Program Audit Division				
Professional	11	11	12	+ 1
Clerical/Stenographic	4	4	4	...
Subtotal	15	15	16	+ 1
Financial Management Division				
Professional	7	9	9	...
Clerical/Stenographic	2	3	4	+ 1
Subtotal	9	12	13	+ 1
Management Information Division				
Professional	6	6	6	...
Clerical/Stenographic	1	2	2	...
Subtotal	7	8	8	...
Grant Management Division				
Professional	5	3	4	+ 1
Clerical/Stenographic	9	6	6	...
Subtotal	14	9	10	+ 1
Personnel Division				
Professional	2	2	2	...
Clerical/Stenographic	2	2	2	...
Subtotal	4	4	4	...

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Staff Coordinators				
Professional	4	3	3	...
Clerical/Stenographic	2	1	1	...
Subtotal	6	4	4	...
Administrative Services Division				
Professional	...	2	2	...
Clerical/Stenographic	...	5	6	+ 1
Subtotal	...	7	8	+ 1
Total	57	61	65	+ 4

Explanation of Increases

1. One additional auditor in the Program Audit Division to increase the audit capacity of the staff.

2. One additional clerical position in the Financial Management Division to manage increased accounting workload voucher examination, and related fiscal duties.

3. One additional professional in the Grant Information Division to assist in the management, coordination, monitoring, and implementation of agency reports, regulations, and procedures.

4. One additional clerical position in the Administrative Services Division to assist in the workload attendant to the central files activity.

OFFICE OF PROGRAM PLANNING

Mission

To serve as the principal advisor to the Administrator on UMTA planning/program activities and objectives; to develop, implement, and coordinate the UMTA planning, programming, and budgeting system; to evaluate the effectiveness of the UMTA program; and to coordinate the development of UMTA policy.

Function

This office is responsible for:

1. Directing and coordinating the planning and programming of the UMTA program and its activities including preparing appropriate long-range plans, directing UMTA responses to the DOT planning, programming, and budgeting system, and developing statements of UMTA program objectives and operational program goals;

2. Directing and coordinating the collection, analysis and dissemination of information required for developing, evaluating and appraising the UMTA program;

3. Appraising program accomplishments and evaluating management and organization effectiveness;

4. Developing UMTA policies consistent with Departmental and other policies, guidelines, and constraints;

5. Developing standards and procedures to ensure the effectiveness of local transportation planning and public transportation programs;

6. Representing or providing staff support for the Administrator on coordinating committees or study groups pertaining to the overall UMTA program, policies, or relationships with other agencies; and

7. Assuring the performance of research or special studies necessary to support UMTA functions.

There follows a tabulation of position resources required for this office:

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Immediate Office of the Associate Administrator				
Associate Administrator	1	1	1	...
Secretary	1	1	1	...
Subtotal	2	2	2	...

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Program Development Division				
Professional	7	7	7	...
Clerical/Stenographic	1	1	1	...
Subtotal	8	8	8	...
Program Evaluation Division				
Professional	4	7	8	+ 1
Clerical/Stenographic	1	1	1	...
Subtotal	5	8	9	+ 1
Planning Coordination Division				
Professional	7	7	8	+ 1
Clerical/Stenographic	1	1	1	...
Subtotal	8	8	9	+ 1
Total	23	26	28	+ 2

Explanation of Increases

1. One additional professional in the Program Evaluation Division to assist in the development of overall national transit and urban transportation needs as part of the Department's overall transportation needs study.

2. One additional professional in the Planning Coordination Division to assist with program review and planning to ensure objective and analytic support for the Administration; and to continue development of a joint UMTA-FHWA program to implement the Federal-Aid Highway Act, 1973.

OFFICE OF CHIEF COUNSEL

Mission

To provide legal advice and support to the Administrator and other UMTA officials, and to coordinate with and support the General Counsel of DOT on UMTA legal and regulatory matters.

Function

This office is responsible for:

1. The legal aspects of program and other activities within UMTA.

2. The legal aspects of legislative and regulatory matters arising in or referred to UMTA.

3. Preparing proposed legislation, legislative reports, and testimony of UMTA officials, in coordination with the Office of Program Planning and other offices of UMTA and DOT.

4. Liaison with the Department of Labor respective to the labor protective provisions of Section 13(c) of the Urban Mass Transportation Act of 1964, as amended; and

5. Protecting the legal interests of UMTA and DOT, specifically including litigation arising out of or affecting the UMTA program, its activities and projects, in coordination with the Office of the General Counsel and the Department of Justice.

There follows a tabulation of position resources required for this Office:

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
Immediate Office of the Chief Counsel				
Chief Counsel	1	1	1	...
Secretary	1	1	1	...
Special Assistant	1	1	1	...
Subtotal	3	3	3	...
Legislative Division				
Professional	3	3	4	+ 1
Clerical/Stenographic	2	2	2	...
Subtotal	5	5	6	+ 1
Opinions Division				
Professional	3	3	4	+ 1
Clerical/Stenographic	1	1	1	...
Subtotal	4	4	5	+ 1
Program Division				
Professional	5	5	6	+ 1
Clerical/Stenographic	3	3	3	...
Subtotal	8	8	9	+ 1
Total	20	20	23	+ 3

Explanation of Increases

1. One additional professional in the Legislative Division to assist in the development of UMTA legislative positions, program, and comments; also to keep abreast of federal and State legislation which affects UMTA's program.

2. One additional professional in the Opinions Division to be responsible for research and policy development relating to issues arising out of the Federal-Aid Highway Act, 1973; and coordination and negotiation with FHWA.

3. One additional professional in the Program Division to assist in the drafting and publishing of regulations with respect to the Urban Mass Transportation Act, 1964, as amended, and the Federal-Aid Highway Act, 1973; and to provide responses/comments on transit regulations issued by other Federal agencies.

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OFFICE OF CIVIL RIGHTS

Mission

To serve as the advisor to the Administrator on civil rights and equal opportunity matters and assure full and affirmative implementation of the civil rights and equal opportunity precepts within UMTA and with recipients of UMTA-sponsored Federal assistance.

Function

Consistent with Departmental policies, programs, standards, and procedures, develops and, as authorized, issues implementing standards and procedures, to assure:

1. Equal opportunity in internal UMTA employment practices (Executive Order 11476 and Civil Service Commission regulations);

2. Equal opportunity in the employment practices of UMTA contractors, subcontractors, and related organizations, (Civil Rights Act of 1964, Executive Order 11246, as amended, regulations of the Department of Labor and Department of Justice);

3. Equal opportunity by recipients of UMTA-sponsored Federal assistance and related organizations (Civil Rights Act of 1964, Executive Order 11246, as amended, regulations of the Department of Labor and Department of Justice);

4. That all UMTA programs and activities affecting housing and urban development are administered in an affirmative manner to further the purpose of the Fair Housing provision of Title VII of the Civil Rights Act of 1968;

5. That investigations of discriminatory practices and compliance reviews are conducted objectively by headquarters or field elements;

6. That technical advice and guidance on civil rights matters receive appropriate distribution;

7. Evaluates implementation by headquarters and field elements of approved policies, programs, standards and procedures;

8. Conducts liaison with the Departmental Office of Civil Rights, Office of the Secretary of Transportation, and develops or coordinates the development of civil rights and equal opportunity reports prescribed by OST; and

9. Ensures technical advice, guidance, and affirmative action in achieving the concept of minority business enterprises and citizens' participation in selected Urban Mass Transportation Administration programs.

There follows a tabulation of position resources assigned to this office. No increases are estimated.

	1973 Actual	1974 Estimate	1975 Estimate
Immediate Office of the Director			
Director	1	1	1
Secretary	1	1	1
Professional	1	1	1
Clerical/Stenographic	...	1	1
Subtotal	3	4	4
External Programs Division			
Professional	3	7	7
Clerical/Stenographic	2	2	2
Subtotal	5	9	9
Internal Programs Division			
Professional	2	5	5
Clerical/Stenographic	1	1	1
Subtotal	3	6	6
Special Programs Division			
Professional	3	3	3
Clerical/Stenographic	1	1	1
Subtotal	4	4	4
Total	15	23	23

OFFICE OF PUBLIC AFFAIRS

Mission

To plan, direct, and conduct a comprehensive public affairs and public information service covering all aspects of the government's urban mass transportation program so as to foster a public awareness and understanding of the mission and role of the Urban Mass Transportation Administration.

Function

This office is responsible for:

1. Providing information to the news media about new and current UMTA projects and grants;

2. Setting up appropriate interviews and press conferences and providing background information for media;

3. Providing information on UMTA programs for trade journals, trade organizations, and business groups, management and labor, State and local governments and domestic and foreign system operators;

4. Providing information and responses to the general public;

5. Providing members of Congress with information requested and assisting in the release of grant and project information through

the Secretary's Office of Congressional Relations;

6. Planning, directing, and assisting in arrangements for field inspection visits and in presentations made in connection herewith by the Administrator and other UMTA officials;

7. Planning, developing and arranging for the production of materials such as brochures, displays, and photographs to complement the entire information program; and

8. Coordinating the release of all materials made available to the public with the Office of Public Affairs, OST.

There follows a tabulation of position resources assigned to this office. No increases are estimated.

	1973 Actual	1974 Estimate	1975 Estimate
Immediate Office of the Director			
Director	1	1	1
Secretary	1	1	1
Subtotal	2	2	2
Supporting Staff			
Professional	2	2	2
Clerical/Stenographic	2	2	2
Subtotal	4	4	4
Total	6	6	6

OFFICE OF THE ADMINISTRATOR

Mission

Directing and controlling all activities of the Urban Mass Transportation Administration.

Function

These activities include, but are not limited to:

1. Financial assistance in the form of grants or loans to public bodies for facilities and equipment to provide mass transportation services pursuant to Section 3 of the Urban Mass Transportation Act.

2. Research, Development, and Demonstration projects in all phases of urban mass transportation pursuant to Section 6 of the Urban Mass Transportation Act.

3. Grants to public bodies for technical studies and for planning, engineering, and designing urban mass transportation projects pursuant to Section 9 of the Urban Mass Transportation Act.

4. Grants to public bodies to provide fellowships for the training of persons employed in managerial, technical, and professional positions in the urban mass transportation field, pursuant to Section 10 of the Urban Mass Transportation Act.

5. Grants to public and private non-profit institutions of higher learning for multi-disciplinary research and training in urban transportation problems pursuant to Section 11 of the Urban Mass Transportation Act.

6. Liquidation of urban mass transportation loans and demonstration grants made pursuant to the Housing Act of 1961.

7. Assures appropriate liaison and coordination with other elements of the Department, HUD, and other governmental organizations with respect to their interests in urban mass transportation policies, plans, programs, and proposed projects in urban areas; The Department of Labor on labor standards, pursuant to Section 13 of the Urban Mass Transportation Act; and other government agencies on the environmental impact of projects, pursuant to the provisions of Section 14 of the Urban Mass Transportation Act.

There follows a tabulation of position resources assigned to this office. No increases are estimated.

	1973 Actual	1974 Estimate	1975 Estimate
Immediate Office of the Administrator			
Administrator	1	1	1
Secretary	1	1	1
Deputy Administrator	1	1	1
Special Assistant	1	1	1
Professional	1	1	1
Clerk/Stenographic	2	2	2
Chauffeur	1	1	1
Total	8	8	8

FIELD OPERATIONS

Mission

To increase the understanding, coordination, effectiveness, development, and execution of UMTA programs and projects among participating States, localities, and public bodies.

Function

The field offices are responsible for:

1. Establishing and maintaining close contact with the Secretarial Representatives; Regional Councils; and State, local, and Federal Government officials relative to project activities, transportation planning, and other significant matters;

2. Disseminating information to the public and local officials to assure accurate understanding of UMTA programs;

3. Assisting, advising, and screening applicants in completing applications;

4. Reviewing applications for compliance with legal requirements, civil rights and equal opportunity policies, and other UMTA/DOT policy requirements; and forwarding applications, with appropriate comment or recommendation, to Headquarters in accordance with established guidelines;

5. Conducting on-site inspections and monitoring project execution for compliance with grant/loan provisions;

6. Establishing requirements for audits and insuring proper execution thereof;

7. Establishing channels of communication with the duly constituted clearinghouses for receipt and transmission of grant information; and

8. Submitting estimates of funding requirements and project evaluations to Headquarters.

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
UMTA Representative.....	10	10	10	...
Systems Planner.....	10	10	11	+ 1
Engineer.....	7	7	7	...
Auditor.....	6	6	8	+ 2
Stenographic/Clerical.....	12	12	13	+ 1
Total.....	45	45	49	+ 4

Field Staffing by Region

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
I. Boston				
UMTA Representative	1	1	1	...
Engineer.....	1	1	1	...
Auditor.....	2[a/]	2	2	...
Clerical/Stenographic	1	1	1	...
Subtotal.....	5	5	5	...

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
II. New York				
UMTA Representative	1	1	1	...
Systems Planner	2	2	3	+ 1
Engineer	1	1	1	...
Auditor	...	...	2 a/	+ 2
Clerical/Stenographic	1	1	2	+ 1
Subtotal	5	5	9	+ 4
III. Philadelphia				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Clerical/Stenographic	1	1	1	...
Subtotal	3	3	3	...
IV. Atlanta				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Engineer	1	1	1	...
Clerical/Stenographic	1	1	1	...
Subtotal	4	4	4	...
V. Chicago				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Engineer	2	2	2	...
Auditor	2	2 b/	2	...
Clerical/Stenographic	2	2	2	...
Subtotal	8	8	8	...
VI. Dallas-Ft. Worth				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Clerical/Stenographic	1	1	1	...
Subtotal	3	3	3	...
VII. Kansas City				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Clerical/Stenographic	1	1	1	...
Subtotal	3	3	3	...
VIII. Denver				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Clerical/Stenographic	1	1	1	...
Subtotal	3	3	3	...

	1973 Actual	1974 Estimate	1975 Estimate	Increase (1975 over 1974)
IX. San Francisco				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Engineer	2	2	2	...
Auditor	2	2	2	...
Clerical/Stenographic	2	2	2	...
Subtotal	8	8	8	...
X. Seattle				
UMTA Representative	1	1	1	...
Systems Planner	1	1	1	...
Clerical/Stenographic	1	1	1	...
Subtotal	3	3	3	...
Total	45	45	49	+ 4

a/ Cover regions I, II, III

b/ Cover regions IV, V, VII

c/ Cover regions VI, VIII, IX, X

Explanation of Increases

1. One additional systems planner in the New York Region to assist in expanded planning activities and responsibilities resultant of the Federal-Aid Highway Act of 1973.

2. Two additional auditors in the New York Region to be responsible for the increased workload and complexity of projects generating in this region.

3. One additional clerical/stenographic to support the professional staff.

NONDEPARTMENTAL WITNESSES

STATEMENT OF HON. ALAN STEELMAN, U.S. REPRESENTATIVE FROM TEXAS

PREPARED STATEMENT

Senator CASE [presiding]. The hearing will convene.

Senator Byrd will be back as soon as he can get away from the floor, and he asked that his West Virginia people, including Mr. Staggers, if they can, wait until he gets here because he wants to see you and hear you.

In the meantime we will go ahead with Mr. Steelman. We are glad to have you here.

Mr. STEELMAN. Thank you.

I talked to Senator Byrd about this and I regret that he will not be here. I will follow up with him further. I will try to see him at a later time.

I appreciate your courtesy and the opportunity to appear here. I know from time to time you get testimony from various Members of Congress who want projects in their districts, and they make various sorts of arguments. I am not here in that sort of role.

I think that this project—in its most cynical sense—this project can fly on its own. Amtrak has in the past found it could fly on its own. It could be a profitable route for them.

I want to take some time to summarize my statement.

Senator CASE. That may be done.

Mr. STEELMAN. What we are talking about is the route which begins in Chicago, comes to Fort Worth, presently goes to Houston by way of Cleveland and Temple. The issue here is rerouting that same train through Fort Worth over to Dallas going south to Houston. The effect of which would be to add Dallas to the existing route.

To bring the committee up to date on where we stand, on February 23, 1973 Amtrak announced it would reroute its Chicago-Houston train, the Texas Chief, through Dallas. The change was scheduled to go into effect June 10, 1973. This was in keeping with Amtrak's March 22, 1971 document, "The Basic National Rail Passenger System" which stated that with respect to the Chicago-Houston service, the routing of the Fort Worth segment initially would be, "via-Temple, to be shifted to Dallas as soon as possible after May 1, 1971." By so doing, two major cities in this heavily populated corridor would be linked with Amtrak service. At the Amtrak Board meeting on February 23, before the line was approved, cost and marketing reports were submitted. The capital cost of upgrading the tracks was placed at $7.9 million, but the marketing analysis reached the conclusion that the expanded new market to be provided would justify the expenditure, so the Board approved the line.

Well, following up on this the dispute arose between the Southern Pacific and Amtrak on the actual cost of track repairs. Amtrak's figure remained at $7.9 million while Southern Pacific's estimate was approximately $12 million. The announced service for June came and went and last fall the dispute was finally referred to the National Arbitration Panel. On October 23, 1973, the two parties agreed that the cost of the program shall be borne equally by the two parties.

An independent consulting firm, Louis Klauder & Associates, surveyed the tracks, and in March of this year, they submitted a figure of $10.8 million and 18 months of repair work, thus placing Amtrak's share at $5.4 million. However, before Southern Pacific and Amtrak could meet to discuss the Klauder report, Amtrak withdrew its application for Dallas-Houston service. This is where we stand today.

This has been a particularly frustrating experience for Dallas. A few years ago, in anticipation of Amtrak service, the citizens enthusiastically showed their support by providing $6 million in a bond issue for refurbishment of the Dallas Union Terminal. City officials viewed Amtrak as part of its commitment to a balanced transportation system in this corridor.

To date, all Dallas has to show for this expenditure is the Inter-American line between St. Louis and Laredo which has been operating since March but only on a triweekly basis. However, in 1 month of operation, April to May, ticket sales in Dallas jumped from $31,521 to $41,125 and have climbed steadily since. Clearly there is demand and potential profitability in Dallas which Amtrak is not meeting.

Amtrak, like any business, must invest funds where there is demand, a growing market and profitability. The corridor between Dallas and Houston meets such prerequisites when one considers factors such as the following:

1. The present level of transportation including 39 flights, 15 buses, and 56,000 vehicles daily from Houston to Dallas.

2. The increasing population, which will double in Dallas County alone by 1990, and business expansion: employment will increase from 664,000 to 1,197,000 by 1990.

3. The citizens' support in the $6 million bond issue.

4. Additional points of service which could be provided such as at "Six Flags"—an entertainment center—where 3.5 million people are expected this summer alone. Service could also be provided to students at Texas A. & M. University with an attendance of 17,500.

5. The success of the Inter-American line through Dallas.

Senator CASE. What is the distance?

Mr. STEELMAN. About 250 miles between those two cities.

6. And, the city of Dallas' plans for the vicinity of the Dallas Union Terminal, which includes a Convention Center, an International Trade Center, and downtown sports complex.

When one takes the above into account, I do not feel it would be overly optimistic to state that with faster equipment in the future, service in this corridor could compare favorably with that presently in the Northeastern corridor.

I should have mentioned, the original choice is Chicago, so we are talking about a mid-point corridor which I think would compare favorably in a short period of time with that very successful Northeastern corridor we heard so much about.

Mr. Chairman, we all want to see Amtrak succeed. In the last few years, rail passenger service has started to firmly take its place in our Nation's transportation system but this is just a beginning. If Amtrak does not take advantage of profitable markets and plan ahead for future demand now, it will lose support and other means of transportation will be developed to take its place. Dallas has shown, by approving $6 million for the terminal, that it wants and will utilize Amtrak. And, just as importantly Dallas and Houston would fulfill the congressional mandate of providing "fast and comfortable transportation between crowded urban areas" as cited in the Rail Passenger Service Act of 1970.

I, therefore, respectfully urge that language specifying an appropriation of funds for Dallas-Houston service be included in the Amtrak appropriations bill so Amtrak can take advantage of this expanding market in the Southwestern corridor.

I will be happy to take any questions or comments.

Senator CASE. Thank you for your presentation. It is most persuasive. Rail service between these two cities goes way back, doesn't it?

Mr. STEELMAN. Yes.

Senator CASE. Southern Pacific was the railroad and it has no present service at all.

Mr. STEELMAN. No present service at all now between these two cities.

Senator CASE. We will certainly take this fully into account, and we are most grateful to you for coming over to help us.

OPENING REMARKS OF SENATOR BYRD

Senator BYRD [presiding]. Earlier today the subcommittee had before it the representatives of the Urban Mass Transportation Administration and went at considerable length into the subject matter with regard to the Morgantown PRT system. Mr. Staggers has upon several occasions talked with me privately about this particular item, so I have known of his very deep interest in the item, and I assured him that at such time as the subcommittee conducted its hearings he would be notified and given an opportunity to appear.

He is here. I very much apologize, Harley, for not being able to be present earlier as long as you have been here this afternoon. We have had two roll call votes in the Senate back-to-back, and then the Leader wanted me to handle some matters immediately thereafter.

I appreciate Senator Case's presiding with the hearing, and it is my understanding that the other Congressman has already testified on another matter.

Also here this afternoon are various illustrious officials from the community of Morgantown, and the University of West Virginia. May I say that they too upon several occasions have expressed to me their concern about this item which we will now hear further about.

I will not take away from Congressman Staggers the privilege of introducing them to the subcommittee, which I would be very happy to do, but not only are they my constituents, but they live in his congressional district and are his constituents likewise.

I think, Harley, that you should have the honor of presenting these people for the record, and then you may be having some roll call votes yourself, and you may wish to make whatever statement you like and then go back to the House.

Stay as long as you wish, of course, here, but the meeting is yours.

STATEMENT OF HON. HARLEY STAGGERS, U.S. REPRESENTATIVE FROM WEST VIRGINIA

INTRODUCTION OF ASSOCIATION

Mr. STAGGERS. Thank you, Senator Byrd.

We of West Virginia here certainly are grateful to you that you would take the time to come down and specially hear this case.

I would like to introduce Dr. Harlow, and have him introduce the rest of those with you in your party.

Senator BYRD. President Harlow, we are happy to have you with us this afternoon.

Mr. HARLOW. With me today is the Hon. Dorothy Comuntzis, mayor of Morgantown, W. Va.; Dr. Sam Elias, assistant to the president of West Virginia University, and Earl Andrews, Board of Regents, representative for PRT project.

Senator BYRD. We appreciate the presence of all those whose names you called. We will give them an opportunity following you if they wish to say anything for the record.

PREPARED STATEMENT

Mr. STAGGERS. I have a prepared statement I will present for the record, if I might.

Senator BYRD. The statement will be placed in the record in its entirety.

[The statement follows:]

July 24, 1974

The Honorable
Robert C. Byrd

Mr. Chairman and Members of the Committee:

Thank you very much for the privilege of appearing here in connection with an allocation of $6.3 million by the U. S. Department of Transportation. This appropriation is for further development of the Morgantown Personal Rapid Transit System at Morgantown, West Virginia.

The House of Representatives recently passed an appropriation bill providing for $6.3 million for further work on this project with the stipulation that West Virginia University sign a modified contract with the Urban Mass Transit Administration. The substance of the new contract is that if the University and the Mass Transit Administration cannot agree upon the next stage of PRT construction, the current proposed appropriation shall be used to demolish the construction already completed.

Such a condition attached to an appropriation item seems contrary to rational procedure. I feel it must have resulted from some misunderstanding.

Early in 1969, officials of West Virginia University came to me requesting assistance in getting Federal aid for construction of some sort of mass transportation facilities for students at the University.

Also, at that time a number of mass transport systems were under study in various communities over the Nation. The Honorable John A. Volpe, who was then U. S. Secretary of Transportation, became interested in one proposal. After extended study by Secretary Volpe and the Department of Transportation, West Virginia University at Morgantown was selected from a number of applicants as the site for the experiment.

As I understand it, a contract was entered into between the Department of Transportation, the City of Morgantown, Monongalia County, the State of West Virginia and West Virginia University. The University would furnish the necessary land for the system, and the Department would develop the cars and the control systems and build the track, test the practicability of the system, and then turn it all over to West Virginia University for operation.

The actual experimental work and the construction was turned over by the Department of Transportation to an airplane company, on the grounds that the proposed transport system would probably use techniques already developed in the air industry. West Virginia University had no part in this development stage, and no control over it.

An original allocation of funds by the Department of Transportation for the project used a cost estimate which had been prepared by the University for its own transport problem. This cost estimate had no relation whatsoever to the project as the Department of Transportation undertook to develop it.

As the work progressed, however, it was found that the cost increased far beyond the University's estimate for its original project. It must be emphasized that the West Virginia University's estimate was for an entirely different project. Yet the University figure was constantly referred to as an expected cost as the PRT project advanced.

With a cost rising much higher than expected, the Department of Transportation apparently became dissatisfied with the project. Further, the Department's efforts to set up efficient local transport systems has been diverted to other problems of major importance, as, for example, the energy crisis. Still further, the airplane contractors who were strongly attracted

by the project in the initial stage have been compelled to give major attention to other problems of immediate interest. It may be doubted that they have been able to give the project the time and attention it needs.

Another factor which must be considered is that the Morgantown PRT Project was meant to be an experiment. An experiment is hardly an experiment if all the requirements for making it an operating success are known. The experimenter must be prepared to carry out his experiment to completion. West Virginia University and the City of Morgantown can in no way be held responsible for the difficulties encountered on the way. If West Virginia University and Morgantown had not been selected for this experiment, it is highly probable that some other site would have been selected, in which case the same difficulties would likely have been met.

It is my feeling that these considerations justify the conclusion that the Morgantown project be carried on to completion under the original agreement. The problem of local mass transportation is not going away. On the contrary, it is increasing day by day. The Nation must find a solution before the tangle of traffic clogs our streets much more. It does not seem logical to throw away the money which has been invested in this project, and then begin at some new site.

In consequence, we urge that the appropriation item in the House bill be amended by the Senate so as to delete the requirement for a new contract between the Department of Transportation, West Virginia University and the City of Morgantown.

Respectfully submitted,

Harley O. Staggers

HARLEY O. STAGGERS

SUMMATION OF STATEMENT

Mr. STAGGERS. I will try to summarize what I said there.

I might say to those of you from West Virginia that it is an honor that Senator Byrd would take time off from his duties on the floor to come down and preside at this West Virginia project. I appreciate it because I know the time and effort that you expend on the floor, and that it is necessary for you to be there most of the time. I know to come down here is an effort that you had to make some arrangements so you could do it. I appreciate it, and I am sure all the West Virginians with me do appreciate it.

I think it is a very serious matter we are here on this afternoon and one that I feel very strongly about. I might briefly review the project if I might as I know it. I was contacted by the president of the university saying that he understood there was to be some mass transit or PTRs erected throughout America, and perhaps West Virginia University might be one of the places for an experiment. So I set up an arrangement for him and his group to come down and meet with the Secretary of the Department of Transportation. Mr. John Volpe was Secretary at the time.

Mr. Volpe listened very attentively. They were asking for a grant. It was a very modest sum, only $13 million, although they were going to put up $5 million from the university, and the State, and the town, the city and the county.

After he had listened to this for some time he said that he thought this might be an appropriate place for the Government to step in and take over and try their experiment as to what results they could get from that for the rest of the Nation because of the climate, the terrain, and the other conditions there that might be ideal. This took time. I think it took several months for them to finally make a decision that they wanted to do it because they thought it would be the ideal spot.

As I recall instances from time to time, Dr. Harlow and his group and the board of regents and others, and the State of West Virginia had to be part of this agreement, and the city of Morgantown, and the county officials, that they would be willing to enter into an agreement with the Department of Transportation and allow them to bring this in as an experiment to do their research and development on this project so they could work out any system that might be worthwhile for the rest of America.

Well, the university and all the officials agree to this, and finally there was an agreement drawn up between the Department of Transportation and Dr. Harlow and the board of regents and others, but this reached beyond that. This reached into the State of West Virginia. The taxpayer there put up a certain amount of money.

The city of Morgantown contributed a great deal, and so did the county of Monongalia. As I say, it involved the taxpayers' money of the State.

Well, the agreement was reached and the people were thinking about the original plans West Virginia had which were nothing compared with what the Federal Government had. They immediately abandoned the plans that West Virginia had drawn up and selected another group to draw up their plans and those plans amounted to two or three times what West Virginia's plans had been to start with.

This was an entirely different system because they wanted to experiment. Well the project went along until 1972, and in October of 1972 a small segment of it was ready to at this point be taken over, and I believe the Senator was there at the time and took a ride on those first cars.

Senator BYRD. I took up for Patricia Nixon in front of that bunch of demonstrators. I came to the defense of a lady, and I would have done it for any lady. I did not like the idea of the daughter of the President being harassed, but we went into that this morning.

Mr. STAGGERS. Anyhow, we came up to that point and the research and development had not been completed. I think the research and development at this time has been completed, and up until this time a lot of people said why wasn't the rest of it completed? The research and development had not been completed.

As I understand it now, and they presented, and the members of the board of regents, and the mayor is going to testify here to straighten the record out if I make any mistakes, but we had come to a situation where it looked like it was going to cost more money than the Government originally though it would, so they wanted to revise the contract and perhaps only build three stations and leave the other three hanging fire, or let them into the future, which let them hanging in limbo. The university did not think this was right because this was not the original understanding. It was not the understanding of anybody in Morgantown, the city or the county, or the State of West Virginia that I know about.

It was originally that it would be six stations. When you go through to Morgantown at rush hour when the students are changing from one campus to another, and the people from one section are moving to another—it is still that same way today, and would still be the same way if you only complete three stations. It would not alleviate the situation one bit as the Government promised them they would do.

Unfortunately, the House put a little part in their report saying that unless the university would revise their contract with them within 30 days that $6.3 million should be used to tear it down. There has been a lot of money spent there. Fifty-some million, and they have completed all the research and development and they need to go ahead and certainly America is not going to know much about it unless they complete this experiment and then try it out, run it for a time.

It will make it much less expensive for the university to run if they complete the six stations because they will be carrying more students. They do not only carry students. This carries the people of the area, the city, and the county from one section to another. So it is just not only for the university, but they are mainly the ones that are concerned.

As I have understood from reports, if it stopped at the three stations it would only carry about three, and maybe three and one-half—less than 4 million people per year. If they complete the six stations it would carry over 14 million, which is actually needed to alleviate the congestion.

Morgantown will be just as congested as it ever was with three stations. It needs the six in order to do the job. They will still have the same problems. They will not have tried the system out to see whether it does the job they thought it would in the first place, and which they promised they would do.

I am here to ask the Senator and the Senate to delete or to amend the House report to knock out that section that says that the $6.3 million shall be used to tear down the system if there cannot be a new contract written.

It is a little bit to me like my first business venture after I got out of college. I came to my own home town and I had to go to the bank and borrow money. It was depession days, and the banker thought I would not be able to pay him back. He said one thing a person should always remember is to pay their obligations even if it takes the shirt off their back.

I always remembered that. I always thought the Government ought to keep their word and their obligations which I think they solemnly made in the years that John Volpe was Secretary of Transportation.

I believe if John Volpe were here today he would agree to this. That it was the agreement that the six stations would be completed. That it was purely an experiment on the Government's part. They had to chose some place in America to cary out the experiment, and Morgantown was selected as the place, and it was his intention that six stations should be completed.

I think the Federal Government at this time should do this without any reservations. I think it is a solemn obligation.

I think it needs to be done. I think that if you in your wisdom and your committee can write in something into the Senate report that will obviate or knock out the House provision, I think this would be a wise decision, and one that needs to be done by our Government and by the Representatives of our Government.

That will complete my statement, Senator Byrd, and again I want to thank you for coming down and being here personally to be with these people, because it means so much not only to Morgantown but to Monongalia County, and to the State of West Virginia, because the taxpayers' money of the State of West Virginia has gone into the project. It is just not the university, because even the university money is State money.

The city of Morgantown has contributed greatly in helping with the right of way, and buildings, and so forth that have been taken away, and the county of Monongalia contributed a lot to this.

So we have the taxpayers—the university is only the agent trying to get a job done that will be helpful to the city and to the county there, and to the university, of course.

With that I want to say thanks again to you and say that the ones that are here from West Virginia should be honored that you came down from the floor. He is our leader on the floor of the Senate and keeps things running. We are honored to have you with us.

Senator BYRD. Thank you very much, Congressman Staggers. The record was pretty thoroughly gone into earlier today as I have already indicated, and I think that the information that was elicited from the representatives of the agency will go a long way toward counteracting some of the information they gave to the House committee and which was possibly repeated on the floor of the House at the time this bill was debated in the House.

The committee report language of the House cannot be changed, as you know. Nothing we can do to that language itself. If the Senate committee does not elect to write language into its report as well that

will contravene the House language or offset it, and if the conference itself then did not write language into the conference report doing that, the agency would be bound to follow the mandate of the House committee language, but as you have indicated to me upon several occasions, you feel that the Senate committee ought to consider writing into its report language that will give the agency flexibility and freedom to act in a judicious and feasible way, because the moneys of the taxpayers are involved not only of West Virginia but of the whole country.

The agency has the responsibility, as you say, to live up to whatever obligation it made, and whatever commitments were made. The Congress is interested in seeing justice done.

It will be my desire to work with you and with Secretary Brinegar in writing some language, and with the UMTA officials, in writing language that will be appropriate and will be justified, and will enable the agency and the Secretary to carry out their responsibilities under the law, and to act wisely in their stewardship of the taxpayers' money.

So before the subcommittee meets to mark up this bill you can be assured, Mr. Staggers, that you will be given the opportunity to visit with me and talk with Mr. Brinegar, either in my office or on the telephone, so that we can devise appropriate language to meet the objectives that are desirable.

As to the money that is in the budget, I will support that appropriation because it has been requested by the President. As I stated for the record this morning, I have been somewhat neutral on this project from the beginning. Normally, I try to get everything for West Virginia that I can get that is justified, and that is needed, and that will constitute a wise expenditure of taxpayers' moneys.

On this particular project I have always supported the budget request. You have talked to me from time to time when the House would delete them, and you wanted them restored, or when the House did not meet the full budget request, and I have always supported the budget request. That is not to say I have been against the project. I have been, as I indicated, somewhat neutral on it. I have not opposed it.

It is in your area. You know far more about the project than I do, but I shall do as I said. I will support the budget request, and I will endeavor to work out some language that meets with your approval, and we will meet with Dr. Harlow and Secretary Brinegar, and I will do the best I can.

Mr. STAGGERS. I want to thank you very kindly, Senator. That is my objective in coming over.

Senator BYRD. I suppose I should add a postscript to the word "neutral." I am not an engineer, and I was never sure this project would work from a technological standpoint. That is why I did not throw myself into it, but I have been assured by UMTA officials here today that it will work.

I have been very much put out about this astronomical cost, as I know you have been by the failure of the people downtown who are engineers, and who are supposed to be able to come somewhere within the ballpark in their estimates. I have been very much chagrined that those estimates have been far from the mark, and that they miscalcu-

lated the cost, and that the result has been writeups in national periodicals giving Morgantown and the university a black eye, West Virginia a black eye, and in the final analysis UMTA will get a pretty big black eye—but if it works perhaps the money will have been well spent in the long run.

Having said that now I won't detain you any longer. I appreciate, Congressman Staggers, your statement, both your prepared statement and your extemporaneous one. You can rest upon the assurances I have given.

Mr. STAGGERS. Thank you kindly. I might remain a few moments if I might.

MORGANTOWN PERSONAL RAPID TRANSIT

STATEMENTS OF:

HON. DOROTHY COMUNTZIS, MAYOR OF MORGANTOWN, W. VA.

DR. JAMES HARLOW, PRESIDENT OF WEST VIRGINIA UNIVERSITY

EARL ANDREWS, BOARD OF REGENTS, REPRESENTATIVE FOR PRT PROJECT

SUPPORT FOR PROGRAM FUNDING

Senator BYRD. President Harlow, why don't you take a chair here at the table, and Mayor Comuntzis, would you grace our table with your presence. And the city manager will have a chair also.

Mr. Andrews, I have had correspondence from you. You read my postscript on that letter. If you will come over and have a chair.

President Harlow, you proceed in any way you desire, just go right ahead.

Mr. HARLOW. Mr. Chairman, I would like to give my own thanks and those of my colleagues at the university for the time you have invested in this. We know your obligation and we appreciate your spending time with is.

I am here to speak on behalf of the Morgantown Personal Rapid Transit experiment, and specifically to urge that the Senate, in its consideration of the House proposal for funding of the project, allocate the funds proposal, but that it remove the condition that the allocation be made contingent upon determination of the future of the project within 30 days of the passage of the appropriation.

I have read the report of the hearing on the experiment held before the House subcommittee, and also the report of the proceedings of the House as it considered the further financing of the project. To me, both were rather unusual, especially since, in the committee hearing, much was made of "the university" without the presence of a spokesman for the institution. On that account I thank you all very much for this opportunity to be heard as you begin your consideration of the funding of the project.

Because of your direct concern with transportation, I am certain of your awareness of the general feature of the Morgantown effort and of the recent publicity accorded it. The publicity has in my view been damaging to UMTA, to the university, and to the project itself, and I believe figured strongly in the House action. In addition, the publicity has in several of its aspects seriously distorted the actual

situation, and it is the true situation which I hope to lay before you during the next few minutes.

First, the experiment is viable and continuing normally so far as I can tell for a project of its magnitude, and it shows every promise for engineering and economic success if it is completed with six stations as originally designed. Some writers recently have sought to make much of the fact that the system is not yet carrying passengers, but most such comment seems traceable to the October 1972 dedication, which some media handled as if the system were operative, when in fact it was not.

Senator BYRD. Incidentally, I have had some indications that the escalation in costs were attributable in part to the effort to meet a deadline in order that that particular ceremony might be conducted on time, and I went into that this morning and the suggestion was not rejected out-of-hand.

Mr. HARLOW. We believe, of course, the university has not been a full participant in the financial planning. We have had very little information, really, on the details of the financial contracting which went on between UMTA and its prime contractor, and of course under the situation there is no real reason why we should have been involved. That is no one's fault.

The engineering aspects of the present three-station installation appear encouraging, but its economic aspects so far are not. In any case, it most certainly is neither a boondoggle nor a fiasco, as some writers have stated.

Second, the project has indeed cost a substantial sum of money. I understand it to be $59 million to date if the appropriation before you is made, and this sum is certainly much greater than the $37 million estimate by the Jet Propulsion Laboratory, UMTA's first systems manager. In addition, apparently some $35 million to $50 million will be needed to complete the other three stations. Some measure of the engineering research effort involved can be judged by the fact that I am told by Mr. Art Hitsman, the Boeing senior manager for the Morgantown effort, that $25 million to $35 million of the money expended so far has gone into R. & D. activities. The system is indeed new, and promises a significant breakthrough in transportation. I do not know what an appropriate cost for a breakthrough effort of this magnitude is, but based on some first-hand contact with the NASA effort and upon what I read of new developments in air transportation, a total cost of $125 million does not seem excessive to me. This sum, incidentally, is only slightly higher than 1 year's operating cost for West Virginia University, and is miniscule in comparison with many Government R. & D. allocations. I am sure that each of you is fully aware that genuine invention cannot be made by the dollar and by the calendar.

Sentor BYRD. I think the problem lay in the fact that the original estimates were quite low, $13 million, $16 million or $18 million, and then it became $43 million, and that is the thing that sort of made, and rightly so, I think, and expectedly so, people blink their eyes.

Mr. HARLOW. I gather from your conversation you got to the bottom of that this morning pretty well.

Senator BYRD. We got down into the bottom.

Mr. HARLOW. The main factor in it is the system which has been installed is not the system on which we requested funding for. It is radically different. It was designed from the start. We had one in mind that was about five quarters already designed. The present one had to be designed from scratch, built from scratch, and is a very different system indeed. A much more sophisticated installation than the one contemplated when we asked for the grant. The only comparable figure is the $37 million on the JPL original estimate.

Senator BYRD. Was there an agreement—you may be getting to this in your statement. Senator Mansfield wanted me to come up to the floor and I will run up there briefly and come back. But let me ask you one question at this point. Was there an agreement in writing that there would be six stations? We have the copy of the contract but if you could elaborate on that a bit either at the end of your statement or here.

Mr. HARLOW. I think I can provide chapter and verse for this and I will be happy to.

I can provide for the record a chronology of the events which took place, and the first of these was a proposal for a feasibility study which was submitted to UMTA on June 2, 1967, and then as a result of the meeting which Congressman Staggers referred to with Secretary Volpe and his associates the project was funded in 1969.

Then the study was concluded and a report was presented to DOT in 1970. The proposal to design and construct a six-station system was submitted to the Department of Transportation on August 5, 1970, and shortly thereafter around August 24, the Urban Mass Transit Association decided to take over management of the project from the university. But Secretary Volpe announced the Department had chosen Morgantown and would build a project there.

Shortly thereafter UMTA abandoned the university contractor, which was the Holden Co. of Massachusetts, and this produced the redesign which I was mentioning to the Senator as you came in.

When the decisions were made by UMTA the university requested in turn assurance that the fiscal system would be one that in fact met the intent of the university's proposal and UMTA proposed a three-part management approval procedure, which was rather complicated, and this management arrangement lasted only about 6 months. Then a contract was proposed and delivered by UMTA to the board of regents during the month of March 1971. This proposed six-station, 3.6 miles of guideway and 100 cars, and there was to be a joint acceptance.

Senator MANSFIELD. Six stations?

Mr. HARLOW. Yes, sir. And there were conditions that you would guess.

The board executed this contract on July 16, 1971, but at that point UMTA refused to sign it and said that the JPL cost of $37 million was too high. Then UMTA proposed building the system in two steps: Phase 1 under the R. & D. and R. B. & D., and phase 2 under the capital grant budget. The board of regents signed the new contract, phase 1, September 1, 1971. There was no question then as to UMTA's commitment to the total project.

The same commitment was repeated and approved in 1974, House budget hearings on page 809.

Senator MANSFIELD. Did that contain the figure of six stations?

Mr. HARLOW. That contained six stations. JPL in their role was directed by UMTA to design the system and Boeing Aerospace was awarded the contract. JPL remained in the role of system manager until August 1971, when it withdrew because of several disagreements with UMTA, and was replaced by Boeing, and Boeing immediately rejected JPL's cost estimate and proposed new higher estimates. This is where the cost problem began to take off.

Ground breaking was in October 1971. Dedication of the portion of phase 1 was in October 1972, and the rest of it has been in the newspaper.

In September 1973 UMTA asked WBU to submit a capital grant application for phase 2 and at that point the university requested help from Boeing in providing pricing and then when phase 2 costs were proposed by Boeing to be around $49 million UMTA said it could not fund phase 2 because its plan allowed for spending only $35 million. And at this point UMTA also wanted to change the existing contract by dropping the clause giving the regents the right to request removal of the system and by agreeing that the board would accept the system when UMTA requested it, and they wanted to remove any system testing with passengers.

The limitations of the present phase 1 system is approximately what Congressman Staggers said. The dollar figures I can report and will, and if you please, Mr. Chairman, I would be happy to file this summary with the supporting documents for the perusal of the committee. It is a bit bulky to go into the record.

Senator MANSFIELD. I think it would be a good idea. This is more important.

Mr. HARLOW. I think certainly the chronology might be useful.

So we say that, and I think we can support this accurately, that until very recently UMTA has been fully committed to a six-station system. It was committed to a six-station system at the outset. It said finally it could not build six stations with the money available to it so it proposed to build and do the engineering testing on three stations and then build the remaining three with a capital grant.

Senator MANSFIELD. The remaining three with a capital grant?

Mr. HARLOW. Yes. Since then there has been some feeling expressed it should be terminated at the three-station system and there has been a good deal of discussion concerning that.

I might go on if I may with the statement that I have here.

The location of the project in Morgantown makes excellent sense. All the necessary rights-of-way were made available free to UMTA, the projected operating revenues are secure locally, the terrain, the climate, and the user population are sufficiently variegated to provide a good test of the concept, and experimentation can be continued and extended through the broad engineering skills and social research facilities available at West Virginia University. The project is a city-county-university system, serving all population groups. It is not, as some recent articles have asserted, merely an intercampus shuttle system for university students.

As a matter of fact, right-of-way was contributed by the city of Morgantown, by Monongalia County, by the Monongalia County Schools, by the State of West Virginia, and of course by the West

Virginia Board of Regents for the university. Several hundreds of thousands of dollars were expended by the regents and a similar sum was expended by the county to acquire its right of eminent domain to acquire two other pieces. I doubt whether, as Senators, you have seen many equally successful efforts to support a Federal experiment.

It is true, of course, that the Morgantown group, through the regents and the university, is pressing for completion of the remaining three stations of the system. There is sentiment in some quarters to terminate the experiment at this point, but aside from considerations of maturity of the engineering R. & D. work, and the formal promises of the U.S. Government to the citizens of the area, the PRT concept cannot be tested with the present installation. The automobile intercepts simply are not there, and the principal sociological aspects of such a concept simply cannot be observed.

In extension of this comment, there is a question about whether or not people will use this kind of transportation. There is little question now that it will work in an engineering sense. There is some question about public acceptance. Each of us here have friends who won't ride automatic elevators and who won't ride airplanes. And the question of whether or not they will ride remotely controlled automatic vehicles on the ground remains to be seen.

It also remains to be seen whether this kind of transportation will indeed have the very broad spectrum of public appeal, whether it can really compete with an automobile.

On the financial side, present installation will generate only about 3½ million passengers per year, and to require $500,000 annual subsidy, while the six-station installation is expected to generate 14 million passengers per year and should be financially self-supporting. To terminate at this point would be merely to throw away the sums already expended. Nevertheless, it is not true, as publicly alleged, that the university is threatening to have the present installation removed. I can certify that no such threat has been made by me, by Mr. Earle Andrews, or by Dr. Elias, for whose absence I apologize. The last time we heard from him he was on standby at Athens trying to get here for this hearing.

Despite the contract clause which gives the regents the authority to refuse the installation, we remain committed to the experiment.

Finally, to us it makes no sense whatever to require a decision on the future of the present installation within the next 60 days or so. The R. & D. work on the vehicles has only recently been sufficiently completed to permit regular vehicle production, the computer software required to operate numerous vehicles has not been developed, and of course there is no significant operating experience whatever, either with the system itself or with its costs. The data on which such a decision should be based simply are not available.

In closing, gentlemen, again I point out that the Morgantown PRT remains a challenging concept, an idea and an effort worthy of the United States of America, and most certainly one which should be pressed forward to completion. It is a bold experiment, reaching deeply into one of the Nation's most serious problems. The fact that it will, if successful, help a university and a small city with serious traffic problems is a side benefit, though the hope for this benefit has made

the experiment possible by making it possible for the several agencies to provide free rights-of-way. The experiment is paramount. Obviously the regents and the university could not have entered into arrangements such as those governing this effort without the promise of substantial research returns of more than local consequence.

I hope you will decide to fund the present installation, without forcing a decision for which neither engineering nor financial data are adequate, and that you will urge UMTA to press forward with completion of the entire experiment.

Senator MANSFIELD. Thank you, Mr. Harlow.

You mentioned in your statement that you have had contact with Secretary Volpe and that he in effect encouraged you to proceed.

Mr. HARLOW. That is right.

Senator MANSFIELD. Have you had the same contact with Secretary Brinegar?

Mr. HARLOW. I have had no contact with Secretary Brinegar. We have talked with Frank Herringer.

Senator MANSFIELD. Have you ever considered the possibility of a meeting with the Secretary to discuss this on the same basis as you discussed it when you were in touch with former Secretary Volpe?

Mr. STAGGERS. First I just want to say that it is the first time I have ever seen the two most powerful men in Congress sit before a meeting here.

I want to tell you how thankful we are and how honored we are.

I have had many meetings with Secretary Brinegar. He has been to my office several times. We talked about this. He is sympathetic. I am sure the rest of the UMTA people are now because they have an obligation. They made an agreement and a contract for the State of West Virginia and the university, and I say they ought to carry it out. It is an experiment.

Most of the money has been spent so far on research and development, and most of that research and development is practically over with now, and they need to go ahead and complete this project.

Senator MANSFIELD. Wasn't it considered an experiment when it was first undertaken?

Mr. STAGGERS. All the way.

Senator MANSFIELD. They must have been aware when they undertook a research and development project you are going to find bugs and it is going to take time. I would assume on the basis of what Mr. Harlow has said that there is a commitment on the part of the Government to fulfill its word even though it did not sign that contract, after agreeing, I would assume verbally, to a six-station proposal.

Mr. HARLOW. A six-station contract, Senator, was sent to us for approval and we signed it and then they withdrew from it.

[The letter follows:]

WEST VIRGINIA UNIVERSITY,
Morgantown, W. Va., February 10, 1971.

Mr. C. C. VILLARREAL,
Administrator, Department of Transportation, Urban Mass Transportation Administration, Washington, D.C.

DEAR MR. VILLARREAL: I'm writing this note to confirm my understanding of our telephone conversation of February 10.

As I understand it, the decision facing DOT with respect to guideway construction does not involve whether or not the complete system is to be built under this

project: it merely involves the mode of financing to be used. I further understand that the decision cannot be made until a better cost estimate is available.

I would like to reiterate my strong feeling that any decision to limit construction to merely a part of the guideway should quickly be relayed to us and to Congressman Staggers, because of the very high public interest and expectation which has been generated.

Cordially,

JAMES G. HARLOW,
President.

STATEMENT OF MS. COMUNTZIS

Senator MANSFIELD. May I say in response to what Congressman Staggers has indicated, that on this committee I work under the leadership of the Senator from West Virginia, Mr. Byrd. He is a good man to work with.

Madam Mayor, are you the next witness?

Please proceed.

Ms. COMUNTZIS. Recognizing that I am not speaking for anyone other than those people at the grassroots, I appreciate the opportunity to be here and I have been most gratified to discover Congressman Staggers here, Senator Byrd and yourself.

As I am speaking for those people who are involved with the grassroots I think that every one of us, whether we are elected to office or citizens next door, recognize the fact that there is great concern among the citizens in Morgantown. We have been most concerned about the success and implementation of PRT and so as I speak perhaps some of these very homely and familiar phrases will recall for all of us the grim obligations that we are under, and the stresses under which we work.

In the past we have seen the persistence of great men such as Edison, Bell, Einstein, Ford, the Wright brothers, and others who have made contributions none can deny. The benefits of their determination and the existing evidence of results achieved benefit our lives in ways even the contributors may not have dreamed possible.

There is little doubt that they, too, experimented, built and rebuilt, combining new equations, but they prevailed against failure, rebelled against defeat and reached their goals.

Since those men brought forth their respective discoveries and inventions we have learned of the accompanying problems and it is with some of those that we, today, must cope. The Wright Brothers surely would be amazed at the aircraft flying the skies even venturing into rocketry and outer space beyond the pull of gravity and exceeding the speed of sound. Today we are much concerned with what is earthbound even as you and I.

Cities are literally strangling on traffic, creating dirt, noise, and air pollution. The cost of continuous preparation of highways, feeder routes, access roads, beltways and truck routes has risen astronomically and still is not enough.

Cities, already, inundated by the overpowering number of vehicles, are further plagued by the necessity of providing parking spaces. Private transportation systems such as buslines are finding the cost exceeding the margin of profit. Since World War II our total traffic and transit problem has mushroomed with few new ideas forthcoming to alleviate the situation.

From the seminars of the 1960's to the funding for a feasibility study in 1969; the preliminary design study of 1970; the awarding of a re-

search and engineering contract and others in 1970 and 1971, each step in the advancement of the personal rapid transit has held hope and inspired the imagination.

The man on the street, the taxpayer, has believed that the goal as established by the participants on Federal, State and local levels would be reached.

Even now, despite much commentary to the contrary, public opinion is strongly in favor of completion of the transit system. The taxpayer is not the only one interested in this experiment in transportation for other nations are also vitally interested in the completion of the PRT.

Traffic congestion and the accompanying ills are not solely the possession of cities within the United States. The PRT is not, as some have indicated, for the sole benefit of the people of Morgantown, W. Va., although admittedly upon completion it would serve them well.

Morgantown was chosen as the site because, "if this system can work in Morgantown, W. Va., it will be suitable in almost every city in the country."

With this statement I concur. Because of the limited land space, varied climatic conditions and rugged terrain Morgantown was, and is, an ideal site in which to conduct this experiment in transportaton.

Viewed by visitors from other countries the PRT has also been observed and closely scrutinized by our own populace with ever-increasing interest. Members of the Transportation Committee of the Southern Growth Policies Board declared the Personal Rapid Transit as "the most innovative system in the southern region" which is composed of 15 States, Maryland through Texas.

There seems little doubt that the visitors and guests who have seen the PRT agree that the system is not only a vast step forward in transit systems but that advantages and possibilities are not yet fully explored for future use.

In the attempt to solve the Nation's traffic problems we can all view bus systems and airlines with hope but the fact remains that aircraft requires miles of runway, bus systems miles of hard surface roadway, both insufficient to remove in-city traffic to any great degree. Any substantial reduction of the in-city traffic must be accomplished through means other than those with which we have been familiar.

The personal rapid transit system has many advantages such as a minimal use of valuable, irreplaceable land. Utilizing space above ground level there is less land loss thus preserving land for garden plots, roadways and it does not obstruct or interfere with waterways or pedestrian traffic.

There is no noise pollution for the PRT affords passengers with a safety of conveyance incomparable with other modes of transportation. Environmentally the PRT is almost perfect.

The park and ride proposal presented by the Urban Mass Transportation Authority is one of the finest plans for congested cities yet presented. It is sound and if put to use problems of in-city traffic could be drastically reduced.

However, to reduce such vehicular traffic an alternate means or conveyance must be present. We are a mobile Nation with much of our external strength relying upon internal mobility. The PRT provides that mobility and is particularly well suited to the park and ride proposal of UMTA.

Anyone experiencing the rush-hour traffic of Chicago, Denver, St. Louis, Los Angeles and even this fair city must surely recognize that the PRT looms very large indeed as the answer to problems of traffic across the Nation.

Sometime ago it was said:

Because the system probably will be the most advanced of its kind in the world it is very difficult at this time to predict the total cost of the project.

My question must be, by what yardstick do we measure? The dollar? The needs of now? The advantages to the future? What shall the cost mean and how measured?

We have profited much by the experience of others and have built upon their knowledge to make better those things which we all enjoy. If we had not profited by past experience we might still be rubbing two sticks together to build a fire or pondering the worth of the wheel.

We have gone to the moon and beyond surely we can reach the finished goal of the PRT; a completed, thoroughly tested experiment to which we can all point with justifiable pride and go on to meet other challenges of the future.

This message, I bring to you directly from the taxpayer in Morgantown, W. Va., and throughout the State.

I would sincerely hope that all of you review what has been presented and proceed so that we can help the Nation become disentangled from its problem of inner traffic, in-city traffic, and I would hope, too. that we all become such great optimists that we can do it in the very near future.

Senator BYRD. Thank you, Mayor Comuntzis for a very fine statement.

At this point in the record we will insert the cost data of the right-of-way donated by Morgantown for this project.

Right-Of-Way For Phase I Of
The Morgantown Personal Rapid Transit System

The right-of-way for Phase I of the Morgantown Personal Rapid Transit System, consisting of 30 separate parcels of land and/or easements on and over privately owned property, and property owned by the State of West Virginia, the County of Monongalia, the City of Morgantown, the School Board and the West Virginia Board of Regents were appraised in February of 1972 by two separate appraisors. Their personal opinion of the fair market value of the above mentioned right-of-way at that time was as follows:

Mr. James K. Hayes $3,844,825.00

Mr. Hugh G. Runner $3,303,026.00

The description of properties appraised are attached herewith.

Specific properties purchased by West Virginia University during the acquisition of this right-of-way and the purchase price are as follows:

Field's Scrap Yard, Parcel X, $250,000.00

Sam Chico, Aerial Row, Parcel G, $2,500.00

Paul Tarasuk Property, Parcel H, $35,120.00

In addition to these, Monongalia County purchased, for a downtown PRT station, a lot (Parcel A) for $185,000.00.

Also, an aerial right-of-way along the B&O Railroad was obtained by the West Virginia Board of Regents using

its power of eminent domain. Latest estimates of the cost of this right-of-way are approximately $65,000.00.

In addition to the above mentioned right-of-way, two additional parcels were purchased during the acquisition of this right-of-way. An aerial right-of-way bordering the St. Francis School property was purchased for $17,850.00 and a house located on Birch Street (the Bartimoccia property) was purchased for $25,000.00. These last two properties are not included in the 1972 appraisal.

In regard to the fair market value of this property today, inflation has undoubtedly increased the value of the property considerably during the past 2 1/2 years.

Segment Title	Dimension Length	Width	Sq. Footage	Reference Maps*	Description
A. Walnut Station	186	125	23,250	F.R. Harris Drawing No. 7-C312/14-15 Revision A 11-20-71	A rectangle plot boarded on NE by Walnut St., on SE by Chestnut St., on SW by Court St., and on the NW by Lee Tire and Salvation Army Property.
B. Guideway - Walnut Station to University Avenue	150	23	3,450	Same as above	A 23 foot wide aerial ROW over the SW curb of Walnut St. with the center line parallel to and 3 ft. NE of the curb, extending from the SE curb of University Ave. in a SE direction for 150 feet.
C. Crossover - University Ave. at Walnut	40	23	920	Same as above	A 23 foot wide aerial ROW crossing University Ave. as a straight line extension of Segment Title B from SE curb to the NW curb of University Avenue.
D. Guideway - University Ave. to Board of Education Lot	220	23	5,060	Same as above	A 23 foot aerial ROW over the SW side of Walnut St. as a straight line extension of Segment Title C for 106 feet from the NW curb of University Ave. then proceeding to curve northward to the south edge of the Board of Education Lot.

*All F.R. Harris drawings are those prepared for the Morgantown PRT Project under contract to Boeing.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
H. Guideway - Paul Tarasuk Property	Irregular		5,850	Tax Map Morgantown Corp. District No. I Map 26	A parcel of land at the SW side of the NW end of Hough St. bordered by Hough St. on the NE, B&O railroad on the NW, Sam Chico property on the S, and Harrison property on the E.. $33,000 was paid to purchase this parcel.
I. Crossover - Hough St.	15	23	345	Same as above	A 23 foot aerial ROW as an extension of Segment Title H beginning at N edge of Tarasuk property and crossing over Hough St. to the Industrial Arts Building property.
J. Guideway - Industrial Arts Building	Irregular		14,720	Same as above	A parcel of land bordered by Beechurst Avenue on the E, the Field House on the N, B&O railroad property of the W, and Hough St. on the S.
K. Crossover - Beechurst Ave. at Industrial Arts Bldg.	45	40	1,800	Same as above	An approximate 40 ft. aerial ROW crossing Beechurst Ave. as a straight line extension of Segment Title J from the W curb of Beechurst Ave. to the E curb of Beechurst Ave.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
E. Guideway - over Board of Education Lot	125	43	5,375	F.R. Harris Drawing No. 7-C312/14-15 Revision A 11/20/71	A 43 foot wide aerial ROW over the NW end of Board of Education lot as a curved extension of Segment Title D to the NW corner of Board of Education Lot.
F. Guideway - Board of Education Lot to Chico Property**	900	23	20,700	Same as above plus F.R. Harris Drawing No. 7-C312/13-14 Revision A 12/18/71 and F.R. Harris Drawing No. 7-C312/12-13 Revision A 12/18/71	A 23 foot wide aerial ROW over the B&O railroad property as an extension of Segment Title E beginning at a point 36 feet SE of railroad station 2275 + 70 to a point 32 feet left of railroad station 2266 + 22.
G. Guideway - Sam Chico Property	65	25	1,625	F. R. Harris Drawing No. 7-C312/12-13 Revision A 12/18/71	A 23 ft. wide aerial ROW as an extension of Segment Title F crossing the NW corner of the Sam Chico property at 75 Beechurst Ave. and extending to the south edge of the parcel of land formerly owned by Paul Tarasuk. $2,500 was paid for aerial rights to this parcel

**These parcels are on the B&O right-of-way which is being condemned. A fixed price will be set by court.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
L. Beechurst Station	Irregular		60,672	Tax Map Morgantown Corporation District #I Map 26	A parcel of land on WVU property directly across Beechurst Ave. from the Old Field House. This parcel is boardered by Beechurst Ave. on the W, Brooks Hall on the N, Armstrong Hall on the E, and Hodges Hall on the S.
M. Crossing - Beechurst Ave. at Tennis Courts	55	23	1,265	F.R. Harris Drawing No. 7-C312/11-12 Revision A 12/18/71	A 23 foot (approx.) aerial ROW crossing Beechurst Ave. in a NW direction heading towards the WVU Tennis Courts extending from the E to W curb of Beechurst Ave.
N. Guideway - Beechurst Ave. to Tennis Courts	370	23	8,510	Same as above	A 23 foot aerial ROW in an approximate straight line extension of Segment Title M to a point 370' from the W curb of Beechurst Ave. The 23 ft. ROW borders the Steam Plant beside the Old Field House.
O. Guideway - Adjacent to Tennis Courts**	310	23	7,130	Same as above	A 23 foot wide aerial ROW on B&O property continuing as an extension of Segment Title N and ending at a point 15 feet E of railroad station 2256.

**These parcels are on the B&O right-of-way which is being condemned. A fixed price will be set by court.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
P. Guideway - Tennis Courts to 4th Street**	560	23	12,880	F.R. Harris Drawing No. 7-C312/11-12 Revision A 12/18/71 plus F.R. Harris Drawing No. 7-C312/9-10 Revision A 12/18/71	A 23 ft. aerial ROW over the B&O railroad property as an extension of Segment Title O beginning at a point 15' E of railroad Station 2256 and extending to the edge of 4th St. at railroad Station 2244 + 90.
Q. Crossover - 4th Street	40	23	920	Same as above	A 23 foot aerial ROW crossing 4th Street as a straight line extension of Segment Title P from S curb of 4th St. to the N curb of 4th St. at railroad Station 2244 + 50 (approx).
R. Guideway - 4th St. to 4½ St.**	120	23	2,760	Same as above	A 23 ft. aerial ROW over the B&O Railroad property as an extension of Segment Title Q beginning at a point 7 ft. NE of railroad Station 2244 + 50 and ending at a point 7 feet NE of railroad Station 2242 + 20

**These parcels are on the B&O right-of-way which is being condemned. A fixed price will be set by court.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
S. Crossover - 4½ St.	25	23	575	F. R. Harris Drawing No. 7-C312/11-12 Revision A 12/18/71 plus F.R. Harris Drawing No. 7-C312/9-10 Revision A 12/18/71	A 23 ft. aerial ROW crossing 4½ Street as an extension of Segment Title R and ending at a point 7 feet NE of railroad Station 2241 + 90.
T. Guideway - 4½ St. to 6th St.	480	23	11,040	Same as above	A 23 foot aerial ROW over the B&O Railroad property as an extension of Segment Title S and ending at a point 7 feet NE of railroad Station 2237 + 10.
U. Crossover - 6th Street	50	23	1,150	Same as above	A 23 ft. aerial ROW crossing 6th St. as an extension of Segment Title T and ending at a point 7 feet NE of railroad Station 2236 + 80 (approx.)
V. Guideway - 6th St. to 8th St.**	665	23	15,295	Same as above plus F.R. Harris Drawing No. 7-C312/8-9 Revision A 12/18/ 71	A 23 ft. aerial ROW over the B&O Railroad property as an extension of Segment Title V and ending at the S curb of 8th St. or at a point 15 feet NE of railroad Station 2230 + 15/

**These parcels are on the B&O right-of-way which is being condemned. A fixed price will be set by court.

Segment Title	Dimension Length	Width	Sq. Footage	Reference Maps	Description
W. Crossover - 8th St.	40	23	920	F.R. Harris Drawing No. 7-C312/8-9 Revision A 12/18/71	A 23' aerial ROW crossing 8th St. as an extension of Segment Title V and ending at a point 20 NE of Railroad Station 2229 + 80.
X. Maintenance Yard	Irregular		192,600	Same as above plus F.R. Harris Drawing No. 7-C312/7-8 Revision A 12/18/71 also F.R. Harris Drawing No. 7-C312/6-7 Revision A 12/18/71	An irregular dimensional parcel bordered by 8th St. on the S, Monongalia Boulevard on the E, B&O Railroad property on the W, and a line perpendicular to Railroad Station 2219 + 20 or the N.
Y. Guideway - Maintenance Yard to Radius Area	2,205	43	94,815	F.R. Harris Drawing No. 7-C312/6-7 Revision A 12/18/71	A 43 ft. ground ROW bordered by a line perpendicular to Railroad Station 2219 + ? on the S a line perpendicular to Highway Station 79 + 60 on the N, an imaginary lir 10 feet E & W of guideway as shown on Map Reference.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
Z. Guideway - Turning Radius Area near Boulevard	Irregular		40,100	F.R. Harris Drawing No. 7-C312/6-7 Revision A 12/18/71	An irregular dimensioned parcel bordered by a line perpendicular t Highway Station 79 + 6 (Map Reference 7-C312/6-7) on the an imaginary line 10 feet from W s of guideway on the W, Monongahela Boulevard on the E, and ending at point where the boulevard meets th imaginary line.
AA. Crossover - Monongahela Blvd. at Triangle	65	23	1,495	F.R. Harris Drawing No. 7-C312/5-6 Revision A 12/18/71	A 23 foot aerial ROW crossing Mono Boulevard as an extension of Segme Title Z. The crossover starts at Station 14 + 55 and extends to PRT 13 + 90.
BB. Guideway - Monongahela Blvd. to Creative Arts Triangle	200	43	8,600	Same as above	A 43 foot ground ROW starting at P Station 13 + 90 on the S, bordered an imaginary line 10 feet from the and W edge of the guideway and stc at PRT Station 12 + 07 on the N.

Segment Title	Dimension Length	Dimension Width	Sq. Footage	Reference Maps	Description
CC. Guideway - Triangle					
Ramp CB	60	10	600	F.R. Harris Drawing No. 7-C312/5-6 Revision A 12/18/71	A 10 foot wide ground ROW starting at PRT Station 9 + 90 and ending at PRT Station CB1 + 74.
Ramp BC	145	10	1,450	Same as above	A 10 foot wide ground ROW starting at PRT Station 12 + 07 and ending at PRT Station BC1 + 85.
Ramp CE	100	10	1,000	Same as above	A 10 ft. wide ground ROW starting at PRT Station CE0 + 60 and ending at PRT Station CE1 + 60.
Ramp EC	75	10	750	Same as above	A 10 ft. wide ground ROW starting at PRT Station EC + 1 and ending at PRT Station EC1 + 60.
Main Guideway	620	23	14,260	Same as above	A 23 ft. wide ground ROW starting at PRT Station 12 + 07 and ending at PRT Station 5 + 87
DD. Engineering Station	Irregular		113,384	F.R. Harris Drawing No. 7-C312/5-6 Revision A 12/18/71	An irregular ground ROW bordered by Evansdale Campus Drive on the S, an imaginary line starting at a point approximately 22 ft. N of the cente line of guideway at PRT Station 5 + and bordering the main guideway and guideway at a distance of 10 ft. tc PRT Station B3 + 60, and an imagina line connecting points B3 + 60 and A4 + 30 extended to the E edge of Evansdale Campus Drive.

STATEMENT OF EARL ANDREWS

Senator BYRD. Mr. Andrews.

Mr. ANDREWS. Dr. Harlow knows, Senator, I was away when I received notice of this hearing. I just got back to my office late last night and I really don't know whether I should submit a prepared statement. I have some notes here, some supplemental information to what Dr. Harlow has given you regarding costs and I might make some selected reference to it, and if I am permitted, I will edit this and file it.

Senator BYRD. Very well.

Mr. ANDREWS. You referred to the difficulties that have arisen because of the greatly escalated costs of the project from its inception, and Dr. Harlow touched on one of the principal things. This is one of the points that I thought might be a matter that required some emphasis for clarification.

With regard to the disparity and cost estimates the Morgantown PRT plan upon which the university based its original request for capital funding, or a similar concept of the present system regarding capacity and geographic delineation anticipated small cars carrying fewer passengers operating on a closed headway and requiring much less substantial and much less costly guideway.

This proposed system for which the $16 million first estimate was generated—this cost estimate was based on a firm quotation for equipment and construction. At the time we had some misgivings. I felt myself this cost estimate was too low. Before we would have completed our arrangement for financing and our arrangements with UMTA the Board of Regents would have employed through the university consulting engineer to provide and prepare plans from which a satisfactory cost estimate could be projected, but the essence of this is this $80 million proposed system of the general concept that was of substantially smaller caliber.

The second element creating cost estimate disparity was the danger of UMTA not being able to develop engineering plans for an integrated system from which reliable cost estimate could be derived and from which significant construction on the project could be undertaken.

A third element contributing to high cost of the project was development of unreasonable conservative design criteria which resulted in significant unnecessary expense especially in the guideway, and other structural construction.

I examined this myself with experts.

The fourth element contributing excess cost was the adherence to a time schedule requiring considerable overtime work to comply with the requirements. This so-called political time schedule. It is not my purpose to criticize anyone who has been associated with this project.

Senator BYRD. Do you know how much of the cost can be attributed to that one item? The last item you talked about.

Mr. ANDREWS. I don't know. But these figures are determinable. It would not be difficult. I did not mention politics in this. Of course it was a political schedule.

Senator, it is not my purpose to criticize anyone. I hope my remarks will be considered as explanatory and the nature of a critique rather

than criticism. However, I want to emphasize in most instances the results that ensued from the manner in which the project has been registered.

I think this statement and the new statement I just made in addition to the amount of money that is pure research and development expense in the project accounts for the apparent escalation in the cost of the project from a small amount of money to a project that is going to cost over $100 million.

This of course I am sure has been one of the difficulties in trying to advance the interest of the project both in Congress and especially as a result of unfavorable publication it has had.

This next point also emphasizes something that Dr. Harlow referred to. The system contemplated no less than six stations. While you were out, Senator Mansfield discussed this phase with Dr. Harlow, and Dr. Harlow presented some data there showing chronological development which I think will be helpful. The system was broken in two phases by UMTA to adjust to fiscal year funding. It contemplated the first phase development funds and second stage financing capital funding. Subsequent unexpected cost estimate increases resulting from evolutionary development of the project pressured UMTA to the existing three-station system. This is the position we are in now.

I don't know, Senator, that there is anything further I have in this short report that would be helpful. If I may I will edit this when I go back.

Senator BYRD. If you would edit that and mail it to me, I will see that it is put in the record.

Mr. ANDREWS. I will suggest here just one thing more, Senator. Last fall, late last year when UMTA was considering the matter of their procedures for completion of this phase 1, they requested us to agree to operating and cost limitation figure in dollars and cents to revise the general statement we had in the contract. Also they asked us to accept the revised specifications which were accompanying their contract with Boeing. They asked us to initiate a capital grant application for phase 2 to provide for the completion of the six-station system. These were presented to us and conditions upon which they would proceed with completion of phase 1.

I would just like to say we agreed with them. We complied with them.

PREPARED STATEMENT

Senator BYRD. We will insert your statement in the record at this point.

[The statement follows:]

STATEMENT OF EARLE T. ANDREWS

Mr. Chairman, Members of the Committee:

My name is Earle T. Andrews. I am a member of the West Virginia Board of Regents which is charged with the governance of the public institutions of higher education in that State. I was president of the Board at the time the existing contract with the Urban Mass Transportation Administration of the Department of Transportation was negotiated relative to the Morgantown PRT system. I am the officially designated officer of the Board to represent it and act on its behalf in matters with regard to the PRT.

I would like to address my remarks to three issues which I believe require clarification and critical comment. First, the disparity between original estimated costs and subsequent results; second, the scope and status of the project; and third, the Regents' position with regard to the project and related matters.

(1) With regard to the disparity in cost estimates.

The Morgantown PRT plan upon which the University based its original request to UMTA for capital funding, while of similar concept to the present UMTA system with regard to capacity and geographic delineation, anticipated the use of small cars carrying fewer passengers, operating on a close headway, and requiring a much less substantial and less costly guideway and appurtenant structures. This was the proposed system from which the $18 million ($13.5 million grant funds) cost estimate was generated. This cost estimate was based on firm quotations for equipment and construction. At the time, I felt that this estimate was too low; however before we would have completed our arrangements for funding, the Regents would have employed, through the University, competent consulting engineers to prepare sufficiently definitive plans from which satisfactory cost estimates could be

projected. The original estimate submitted to UMTA by the University carried the following subscript: "Due to the size of the project, and the fact that final design has not been completed yet, these are approximate figures which will be re-evaluated and submitted no later than 6 months after project approval."

This difference in calibre between the proposed WVU system and the resulting UMTA system is the first causal element in the disparity between the original $18 ($13.5) million estimate and the current projection of $100 million plus to complete the full system concept.

The second element creating the cost estimate disparity was the failure of UMTA to develop definitive engineering plans of the integrated system from which reliable cost estimates could be derived and before which significant construction on the project should not have been undertaken. To do otherwise violates sound engineering and economic principles.

A third element contributing to the high cost of the project was the development of unreasonably conservative design criteria which resulted in significant unnecessary expenditure especially with regard to the guideway and other structural components.

A fourth element contributing excess cost was the adherence to a time schedule requiring considerable overtime work to comply with its requirements.

A fifth element contributing to the cost of the project is the expenditure for research and development. However, it would be difficult without a detailed analysis to differentiate between research and development expense which should relate to areas of uniqueness, and normal engineering development expense. A reasonable judgment would indicate the former could be in the order of $10 million or approximately 17% of the cost through Phase I.

The foregoing are the principal elements that have burdened the original $18 million estimate. It is not my purpose to imply criticism of anyone who has been associated with the project. I trust, rather, that my remarks will be considered as explanatory and in the nature of a critique. However, in most instances the results that have ensued from the manner in which the project has been managed should have been readily foreseen.

(2) Scope and status of the project.

(a) The Morgantown PRT was designed as a six station 3.6 mile experimental system to constitute a viable transportation entity in order to test and demonstrate its potential in the resolution of one of the nation's more difficult transportation problems.

(b) The project was broken into two phases of endeavor by UMTA to align it with fiscal year funding; a first phase to be funded under the Research, Development and Demonstration Budget and the second phase to be financed by capital grant funding.

(c) Subsequent unanticipated cost increases resulting from the evolutionary development of the project pressured UMTA to redefine Phase I into a Phase I-A with the consequent introduction of Phase I-B to complete the three station segment of the system.

(d) Phase I-A was completed in June 1973 and Phase I-B, for completion of which UMTA has requested an appropriation of $6,380,000, is under construction.

(e) A draft application for capital grant funds for construction of Phase II, filed at UMTA's request, has not, so far, received approval. The application includes an estimate of $49 million to complete the system. Efforts are underway to determine if design modifications can effect reduction of this figure without unduely restricting the efficacy of the system. However,

with the current rapid escalation of construction costs, such saving might be moot.

(f) Phase I by itself will not provide a viable transportation service on the West Virginia University campus complex or in the Morgantown area. It will constitute a viable and competent research vehicle through which UMTA and the University in cooperation can determine the engineering and operational feasibility of the specific Morgantown PRT concept.

(3) Regent's position with regard to the project.

(a) Phase I was not designed as a viable transportation entity. Its cut-off near the mid-point of the system was not designed as a terminal. Even if it were, it is not feasible to interface it with some other mode of transport to continue service over the remaining design route. Nor is it reasonable to assume that such an articulated system, requiring passenger interchange midway, would appeal to potential users. The University would be required to maintain its full bus service and the greater convenience of the automobile would continue to impose and enhance its impact upon area traffic.

There is no foreseeable means of producing significant revenue to cover Phase I operating cost, currently estimated at $850,000 per year. Subsidies will be required to finance its operation until it becomes an integrated part of the full 6 station system. Our position regarding the three station segment of the Morgantown PRT--its significance as a research vehicle and its ultimate integration into the complete 6 station configuration--has been unchanged from the start of the project and is a matter of record.

(b) The real objective of the Morgantown PRT project--to determine and demonstrate the potential of the Morgantown concept, under actual operating conditions involving passenger participation and response, to assist in solving

an important segment of the nation's transportation problem--can only be accomplished through completion of the full 6 station system.

(c) The existing contract between UMTA and the West Virginia Board of Regents covers only the three station segment now under construction. However, the Board would not have subscribed to the existing contract had it not been clear to all parties involved at the time that the three station approach was simply a first step, tailored as such to meet fiscal year funding problems, toward completion of the full system.

The understanding that the scope of the Morgantown PRT project would include the entire six station, 3.6 mile configuration is supported by the record and by the evidence of participants in the negotiations and can be substantially documented.

(d) The protective provisions in the current contract between UMTA and the Board of Regents which have been so widely commented upon and criticized by the press and others, became obviously necessary during our discussions and negotiations with UMTA because of the indefiniteness of the parameters of the project. They are not self serving but are in the best interests of the State and the Nation. We have constantly endeavored to make it clear to UMTA that we could not afford to operate Phase I as an isolated transportation entity because of its limited usefulness and projected high operating cost.

There is no justification for the impression that seems to be prevalent that the University is being arbitrary. UMTA asked us to accept as an amendment to our contract, the revised specifications for the project which accompanied their contract with Boeing. We mailed the Board's acceptance of such an amendment to the Administrator late in February. However, this amendment was then rejected by UMTA because we would not agree to further modifications of the contract which would have made the Board's acceptance of the three

station system mandatory upon UMTA's certification that the system met the technical requirements of their specifications. It is obvious that our assumption of such a condition would have been an abrogation of our responsibilities to the University and to the State of West Virginia. We have made and will continue to make every effort to cooperate with UMTA in order that the real objectives of the project can be attained. There is no question but that the project has national significance; however, that national significance can only be evaluated by making the project operative in the aura of reality in which it has to be proven.

(e) Despite reports from the press and implications that have arisen in the House Subcommittee on Appropriations, no official spokesman for either the Board of Regents or the University has indicated in any manner a desire to have the existing installations dismantled. In our considered judgment, it would be an unwarranted imposition on the taxpayers of this country if the Phase I of the system is not completed and thoroughly tested for technical competency and feasibility in view of the approximately $60 million which has already been committed. This can not be accomplished if the restriction presently proposed by the House on the use of the $6,380,000 is operative with regard to the final appropriations bill which issues from Congress. In my opinion, it would be impossible at this time for the Board of Regents to arrive at an agreement with UMTA regarding the disposition of the future of the PRT project, in the absence of the definition of many necessary parameters.

Thank you for the opportunity of presenting this statement.

UNDERSTANDING BETWEEN UNIVERSITY AND UMTA

Senator BYRD. Dr. Harlow, do you have anyone else who wishes to make a statement?

Dr. Harlow, what was the understanding between the university and UMTA in the beginning as to how many stations would be completed?

Give us your best recollection of the understanding in its entirety.

Mr. HARLOW. Mr. Chairman, I have before me a chronological statement which I am filing for your reference. It is a bit bulky for the record, but I think perhaps a sequence might be well.

A proposal for a "Feasibility Study of an Integrated City and University Transportation System" was submitted by the university to the U.S. Department of Housing and Urban Development, which was in charge of urban transportation, on June 27, 1967.

As a result of a meeting between U.S. Secretary of Transportation, John A. Volpe, and a Morgantown-university delegation, the Department of Transportation, which became responsible for urban transportation, funded the study on July 1, 1969.

The study was concluded and a report was presented to DOT in August 1970.

A proposal to design and construct a 6-station, 3.6-mile guideway and approximately 100-vehicle system was submitted by the West Virginia Board of Regents to the Department of Transportation on August 5, 1970.

The proposal was based on a comprehensive system designed by Alden Sefl-Transit Co.

The total cost was $18 million. Only $13.5 million was requested from DOT.

West Virginia University had a firm bid from Alden, which was to be backed by a bond as a condition for awarding the contract.

Senator BYRD. The estimate of $18 million was based on that study?

Mr. HARLOW. That is right. And this is the one to which Mr. Andrews referred a few moments ago.

Shortly thereafter, around August 24, 1970, the Urban Mass Transportation Administration, UMTA, of DOT, decided to take over the management of the project from the university " * * * to insure the reproducibility and utility of the system in nationwide locations * * *" (1972 House budget hearing, pp. 471 and 455).

Secretary Volpe announced in Morgantown that the Department had chosen Morgantown as the site for the first PRT. That was on September 2, 1971. At that time the Department announced that it would build the system for $13.5 million.

Senator BYRD. The Department, that is.

Mr. HARLOW. Yes.

Senator BYRD. What was envisioned, the three-station system or the six-station system?

Mr. HARLOW. The six-station system.

Senator BYRD. In other words, the Department stated that it would build it for a cost of almost $5 million less than your estimate?

Mr. HARLOW. That included real estate and some other things that the university was putting up. The request for the grant was $13.5 million.

Shortly thereafter UMTA decided to abandon Alden in favor of the open bid approach. Alden, which since September 15, 1970, was under contract to the Jet Propulsion Laboratory, or JPL, the first system manager for the PRT project was notified on September 29, 1970 of the contract cancellation. This was a very critical action with far-reaching implications because (*a*) it meant that the system, which UMTA proposed to develop, had to be designed from A to Z rather than acquiring one already operating as a prototype; (*b*) being the first of its kind this decision resulted in extensive planning, delayed the schedule considerably, and required the expenditure of very large sums of money, and (*c*) the university was barred from attending meetings or becoming involved in decisions that dealt with cost.

When the decisions were made by UMTA to take over the project's management, the university requested in turn assurance that the final system would be one that in fact meets the intent of the university's proposal. UMTA proposed a trimanagement approval procedure by a project manager from JPL, a project manager from UMTA, and a project manager from the university. This arrangement lasted approximately 6 months, resulting in approval of the System's Requirement and Constraints Document December 17, 1970, and route plans, December 17, 1971.

UMTA then dropped this arrangement, explaining that it wanted full control of the project, and in turn it proposed to sign a contract with the West Virginia Board of Regents giving the board the right to require that the system be removed after its completion if it did not meet the intent.

A contract was proposed and delivered by UMTA to the board during the month of March 1971, which generally stated:

The system was to include 6 stations, 3.6 miles of guideway, and approximately 100 cars.

A joint acceptance test for system performances to be conducted by JPL, UMTA, and WVU.

A live demonstration and evaluation program then shall be conducted to last 24 months.

The board may request removal of the facilities if they do not meet the performance specifications.

Although the contract was signed by the board on July 16, 1971, UMTA refused to sign it and cited these reasons:

JPL's cost estimate of $37 million.

Such funds were not available in UMTA's research, development, and demonstration budget.

UMTA proposed building the system in two steps—phase 1 under the research, development, and demonstration budget and phase 2 under the capital grant budget.

The board of regents signed the new contract, phase 1, in September 1971. There was no question then as to UMTA's commitment to the total project. The same commitment was repeated and appeared in the 1974 House budget hearings, page 809.

Senator BYRD. The bill committing to six stations?

Mr. HARLOW. Yes, sir.

Senator BYRD. By the same person?

Mr. HARLOW. This one I think may have been 1974. That was 2 years later. That one might have been by Mr. Herringer. If you will wait a moment I will check and see.

This piece of the reference is not complete with respect to the person who is testifying. It is page 909 and it refers to the original conceived at a 6-station, 100 vehicle configuration. R. & D. funding construction and detailed engineering evaluation caused the program to be redefined as follows.

Phase 1–A, construction, of a three-station, five-vehicle system and then there is some explanatory step.

Phase 1–B construction of additional 40 vehicles. Provision and demonstration of three-station revenue service in July 1973.

Phase 2, expansion of system to a six-station, 100-vehicle configuration by means of capital grant. This is a Xerox of the proceedings.

This is a report which is contained—this is only one relevant part.

Senator BYRD. When UMTA said that they wanted to divide this in two stages did not at that point indicate that they did not want to proceed with the second stage?

Mr. HARLOW. No, sir, the page I just read you from the record cited the intent to complete phase 2 with the capital grant.

Senator BYRD. At what point did UMTA indicate that it did not want to proceed with its commitment?

Mr. HARLOW. In all honesty—and I have written this in a letter to the editor of Business Week which has not appeared yet; perhaps it won't. That is the only letter to an editor that I ever wrote. But I pointed out that UMTA has never really said it would not finish it. There has been much talk since about the conditions under which it was to be finished. There has not been a flat statement that it will not be completed.

I have asked Mr. Herringer whether there was a fixed figure set by the Secretary. Mr. Herringer said no. There have been efforts on the part of the UMTA staff to persuade us to reduce the system, specifically that two stations should be added rather than three. We have resisted that, though we reluctantly accepted it—mainly because we think the system won't work.

You know Morgantown very well, and if you remember the layout the system essentially starts at the medical center and at the coliseum.

The typical persons lookinng at it, because of what has been built and because of the downtown congestion thinks of it as starting downtown and going out to the medical center and the coliseum. But the coliseum station has 1,400 parking places and the medical center will have something like 2,500. The system really is expected to work in reverse. It is expected to pick up people at these two huge parking places and deliver them to the campus and downtown so that when one begins to talk about trimming off the coliseum station one talks about a very serious reduction in the capacity of the system. You lose the 1,400 parking places so people coming into Morgantown from the Interstate 79 which will remember is only 5 minutes from there, whether or not they will have a readily available place.

Maybe they can be persuaded to use the parking area for medical center but I don't know. But it removes a great deal of the usefulness of the system.

Again, the idea was that we could provide that the system would provide a quiet, speedy on call transportation system which would compete favorably with driving one's automobile into Morgantown and fighting for a parking place.

Senator BYRD. What you are saying is without phase 2 the usefulness of the system would be greatly undermined.

Mr. HARLOW. Yes, sir, from around 14 million passengers a year to 3.5 million passengers a year.

Senator BYRD. Is Mr. Herringer continuing his conversation with you in an effort to resolve this matter?

Mr. HARLOW. Oh yes, we talked last week and I understand he has a letter in the mail to me now. I have not seen it. He told me just a few moments ago.

Senator BYRD. A copy of the letter was submitted by Mr. Herringer at my request this morning. I would like for you to read it—it is only four paragraphs—and react to it if you will, for the record.

While Dr. Harlow is reading the letter, Mayor Comuntzis, what contribution has the city of Morgantown made to this project?

Ms. COMUNTZIS. Land and rights-of-way, predominantly. We did this in conjunction with the board of education and the county and the university. We are really most concerned, Senator, simply because we recognize the fact that, as Dr. Harlow pointed out, that the portion which is finished—indeed the third station is not even completed.

Senator BYRD. But that would be completed with the expenditure of the $6 million that is in the budget, would it not?

Mr. HARLOW. No, the $6 million goes almost entirely for vehicles, as I understand it, and computer software.

Senator BYRD. What is the dollar value of the real estate and right-of-way and other contributions of the kind?

Ms. COMUNTZIS. I don't have these figures with me but I can see that you get them.

Senator BYRD. If you will, please, let us have those figures.

Mr. HARLOW. There is an attachment which is not there, Senator. You will notice that proposes the study and I do not have that to respond to and that is really the meat of the letter. This is a transmittal letter that says a proposal for a study is attached or coming along later. Without that I would hesitate to respond.

Senator BYRD. If you respond, though, within the next week would you give us a copy for the record?

Mr. HARLOW. Yes, sir.

Senator BYRD. Do you have anything else, Dr. Harlow?

Mr. HARLOW. No, sir, except again to express my gratitude to you personally in your responsibility as chairman of this committee to give us a chance to be heard. We have found it difficult to get on the record.

Senator BYRD. You are entitled to that chance to get on the record. I am delighted we had that opportunity today.

Mayor Comuntzis, do you have anything further to add?

Ms. COMUNTZIS. No, only I am most appreciative of your consideration, Senator, and Senator Mansfield and Mr. Staggers. We are very grateful to have been permitted to appear at this time.

Senator BYRD. Thank you very much for your testimony.

Congressman Staggers, do you have anything else?

Mr. STAGGERS. Nothing except what I said in your absence, that it is unique that the two most powerful men in Government would come down to listen to this group. I think you are very gracious and these people should be very honored.

Senator BYRD. You are overly generous.

Insofar as I am concerned, I am chairman of the subcommittee and I have a duty to chair it. I do, as much as I can, appear at the hearings. Sometimes I have to get other Senators to carry on for me while I am on the floor.

We will do the best we can and I think you have made a good case.

Mr. ANDREWS. Senator Byrd, I would like to off the record make a comment.

Senator BYRD. Off the record.

[Discussion off the record.]

Senator BYRD. Make that statement on the record.

Mr. ANDREWS. A three-station system in phase 1 is not and will not be a viable transportation entity serving the needs of the university at Morgantown. It is and can be used as a competent research tool for engineering research and development but unless the full six-station system is developed the money which has been spent substantially has been spent uselessly.

The six-station system is the minimum system which can render a useful service to the university at Morgantown and be a competent vehicle for test of such type of system in public use.

Senator BYRD. What would be the reaction of the people at the university and the citizens of Morgantown to the destruction of this project?

Mr. HARLOW. Senator, there certainly would be great disappointment. As someone said the other day, we probably could put bleachers across the river and get a pretty good price for the seats while it is coming out.

Mr. ANDREWS. I don't think the demolition could be touched for $6 million. I think it would probably cost $18 million for the removal and to restore the grounds to the original condition.

Ms. COMUNTZIS. Speaking for the people in that proximity, I think they might be making mumbling noises about secession. We are an old city and we have had a lot of things happen, and we have survived a lot of things, but I doubt if we could survive this one. It would really be a blow.

Senator BYRD. Would the city sustain any permanent losses from the destruction of this project?

Ms. COMUNTZIS. I am not convinced—should we reach that point—that it would be any small thing to try to remove it inasmuch as the supports at the present time are much greater than they were initially intended, from the initial design. The guideways are much heavier. It will take a lot of heavy explosives to blow away something reinforced with steel. It is in the downtown area where we have a lot of old buildings, some of which have great historical value.

I would be concerned for the city.

Senator BYRD. What would be the time involved in the demolition of this project? Have you been informed?

Ms. COMUNTZIS. We have not been informed. Mr. Andrews has done a considerable amount of work in explosives utilization. He can probably speak with some accuracy.

Mr. ANDREWS. It would take a good while, I would say. It would require a year to return the existing facilities to their original condition. I honestly don't believe it can be removed for less than $25 million. I think a substantial amount of money would be required to remove it.

Senator BYRD. Thank you, President Harlow.

Mr. HARLOW. Thank you, Senator.

ULTRASYSTEMS INC.

STATEMENT OF P. J. STEVENS, PRESIDENT OF ULTRASYSTEMS, INC.

PREPARED STATEMENT

Senator BYRD. The next witness is Mr. P. J. Stevens, president of Ultrasystems, Inc.

Mr. Stevens, would you take a seat at the table, please.

Following Mr. Stevens the subcommittee will hear Mr. Sumner Katz, assistant general counsel of National Association of Regulatory Utility Commissioners, and then the next witness will be Mr. Carl V. Lyon of the American Association of Railroads. Then there are additional witnesses whose names will be called at the appropriate time.

Mr. Stevens, I apologize for the delay we have caused you and I hope that you will not feel that the subcommittee wishes to rush you in any way. You are entitled to take as much time as you feel necessary to make your presentation, so go right ahead.

Mr. STEVENS. Thank you, Mr. Chairman.

Mr. Chairman and members of the Subcommittee on Transportation. I sincerely appreciate the invitation to appear before you today concerning a matter of vital importance to our corporation and to many other independent testing laboratories who are engaged in business activities related to the field of automotive safety.

I have provided a prepared statement.

Senator BYRD. The statement will be included in the record at this point. You may read it or give the highlights.

[The statement follows:]

Mr. Chairman and Members of the Subcommittee on Transportation, I sincerely appreciate the invitation to appear before you today concerning a matter of vital importance to our corporation and to many other business enterprises which are engaged in business activities related to the field of automotive safety.

This matter is concerned with a proposal which has been made by the Department of Transportation to obtain $4,200,000 for the development of an Automobile Compliance Test Facility. As you know, this proposal was deleted from the Department of Transportation's budget by the House of Representative's Appropriations Committee and has been submitted to the Senate Appropriations Committee on an appeal basis.

I must say initially that I do not favor the Department of Transportation's proposal to build a new Automotive Compliance Test Facility on the basis that I feel that such a facility would clearly represent an unnecessary expenditure of taxpayer's money, that it would be duplicative of facilities which presently exist in the private sector and which are operating substantially below capacity, and that it is potentially damaging to the growth, development, and possibly the very survival of numerous business enterprises which are presently performing the exact work which the proposed new Compliance Test Facility would conduct.

To better understand why we feel so strongly that such a facility is not required, I believe it would be helpful to understand what our firm does and to briefly describe various types of automobile compliance tests.

Our firm, Ultrasystems, Inc., has developed what is generally considered to be the most advanced, independent automobile test facility in the nation. A photograph of our facility is included along with the text of my prepared statement. Our company is a diversified high-technology research and development corporation which is actively involved in various aspects of the field of safety engineering. The field of automotive safety represents the largest single element of our business.

We have been conducting automobile compliance tests for the government, as have other independent test organizations, since the first Federal Motor Vehicle Safety Standards were established some five years ago.

Our engineers are seasoned veterans in conducting these compliance tests which range from very simple tests of windshield wipers, door latches,

and defrosters, to very complex and sophisticated tests involving full scale automobile crash tests into a barrier at a speed of 30 mph. These complex compliance tests contain instrumented anthropomorphic dummies and are used to evaluate the adequacy of passenger restraint systems, the structural retention of the windshield, the integrity of the fuel system, and the structural deformation of the steering column in a crash environment.

We and other business enterprises who are involved in this type of automotive safety test work feel very strongly that a new government-financed compliance test facility is neither appropriate nor required for the following reasons:

1) Unnecessary Expenditure of Taxpayer's Funds:

First, the initial expenditure of $4,200,000 in taxpayer's funds for equipment, facility leasing costs, and personnel for the new compliance test facility seems highly inappropriate from a need standpoint, inasmuch as at the present time at least ten qualified corporations are available in the United States and have a proven capability for conducting automobile compliance tests for the Department of Transportation.

Nation's Capacity Far Exceeds Demand

With the availability of these ten testing companies, the nation's capacity for conducting automobile compliance tests at the present time far exceeds the present or anticipated future demand for conducting automobile compliance tests.

For example, during the past 12 months our firm, Ultra-systems, Inc., which is probably the leading organization in the nation in conducting automobile compliance tests of the most complex type, has conducted a total of 27 full-scale 30 mph crash tests as part of the Department of Transportation's Compliance Test Program.

Our company alone has the capacity to not just double or triple the number of compliance tests which we ran during the past twelve months, but to increase the number of tests by a factor of 50.

When one considers that the other nine compliance test corporations have similar excess capacity for compliance

testing, the building of a new government-sponsored facility to further expand the nation's compliance testing capacity does not appear warranted.

2) "Fast Reaction" Compliance Testing Capability

It has been suggested that a new Automobile Compliance Test Facility is needed in order to permit the Department of Transportation to have a "fast reaction" capability to conduct compliance tests or defect investigations.

I submit to you that a "fast reaction" capability presently exists in industry to conduct the required tests. For example, simple compliance tests can be performed within hours after authorization to proceed is received. The most complex and sophisticated compliance test, the 30 mile-per-hour barrier impact test, can be conducted within three days after the Government issues authorization to proceed, a time which is much shorter than any indicated need.

When one analyzes the delays in the system, I believe that it would be clearly shown that any delays which exist in the present system are procedural in nature, rather than of any fundamental time-consuming nature. Specifically, we believe the delays are often associated with procurement processing delays in the system. The procurement people within the Department of Transportation have recently streamlined the contracting approach to permit an immediate authorization to proceed with any high-priority or emergency testing requirements.

For example, yesterday, we received authorization to proceed with the conduct of a defroster compliance test on a British-manufactured automobile. We initiated the test on the same day and completed it today, immediately reporting the test results back to the Department of Trans-

portation. This fast action response is indicative of how quickly things can be accomplished by industry.

It appears that the need for a new compliance test facility funded by taxpayer's money does not seem to be warranted on the basis of a need for a "fast reaction" capability. The newly streamlined system is currently operating in a fast-response mode and the Department of Transportation's procurement people have really stepped up their procurement actions on such tests.

3. "Hands On" Government Testing

It has also been suggested that the new compliance test facility is required to permit the Government to have a "hands on" testing capability to directly conduct compliance tests.

I can fully understand the desire for such a capability, but honestly cannot appreciate the need for such a capability when independent, highly-qualified testing agencies such as our firm have spent millions of dollars in developing the professional expertise and providing the facilities necessary to conduct compliance tests. This expertise and extensive facilitization does not presently exist in the federal government; it would take years to develop, it would be costly to achieve--and most importantly it does not appear to be required in order to get high-quality, low-cost test results which are presently available from the private sector.

The Government's desire to have a "hands-on" capability to conduct the compliance tests in order to have a first hand feel for what it's like to crash a car or conduct a specialized test appears to be contrary to a fundamental precept of letting American Industry do those things which it can do well and reserving for Government those things which industry cannot do. Automobile compliance testing is not an item which falls into the domain where industry cannot deliver high-quality low cost results in a timely

manner, and we therefore feel that for this reason, the Government should avoid getting into the business.

4) The "Conflict of Interest" Myth

It has been suggested that a "conflict of interest" could be avoided if Government performed the automobile compliance tests rather than industry.

I would like to say that this justification for building a multimillion dollar facility is in my opinion totally unsubstantiated and unjustified. I can categorically say that there has never been a conflict of interest in any work which we have performed, nor to my knowledge has there ever been any conflict of interest among any of the other reputable independent compliance testing organizations presently supporting the Department of Transportation's automobile compliance test program.

When one examines the "conflict of interest" theme for justifying a new government-funded compliance test facility, the theme is found to be unsupportable.

First, our corporation is not in any way owned, partially-owned, or even has one share of stock owned by any part of the automobile manufacturing industry. We and the other independent testing organizations represent high-integrity professional groups who take pride in their independence and freedom.

It is also important to understand that compliance testing is a very exacting and precise engineering endeavor based upon measurements which are not subject to opinion or judgement.

For example, all of our instruments used in compliance tests are calibrated against Bureau of Standards equipment for accuracy. Heavy camera coverage is utilized to permit comprehensive photographic documentation of what happens during the test. In addition, Government representatives

are often present and are always welcome to observe the test, oversee any aspect of the test, and examine the test data immediately following each test. In addition, the Federal Motor Vehicle Safety Standards are definitive and exact in establishing compliance requirements for comparison against test results. The determination of compliance is a straight-forward matter of fact, not opinion.

For example, a windshield must not pop out of its frame when a car is crashed into a barrier at 30 mph. Did the windshield pop out or not? Did an air bag deploy or not? Did the steering column collapse more than 5 inches in a head-on barrier crash or not? These are not matters of bias or opinion, but are matters of readily accessible fact.

I submit to you that the myth of a conflict of interest is not supported by fact---that there is no evidence or even any indication that any conflict of interest has ever occurred, to the best of my knowledge, on any compliance test ever conducted by any of the independent testing organizations presently supporting the nation's compliance testing program.

It hardly seems appropriate that an initial $4,200,000 investment of taxpayer's money would be authorized for a compliance test facility on the basis of a hypothetical, unsupported, supposition that a conflict of interest might possibly occur if independent testing laboratories are permitted to continue to conduct compliance tests.

5) Cost-Benefit Considerations

Before concluding, I would like to address the cost-benefit aspects of the proposed facility. At the present time compliance tests are conducted very economically by industry. Costs range from only a few hundred dollars for the simpler compliance tests to approximately $6,500 for the most complex of tests.

The proposed first year expenditure of $4,200,000 includes $700,000 for 41 new full-time positions presumably required to support the compliance facility, plus $790,000 for the initial year's lease cost. This means that $1,490,000 would be expended annually for labor and the land lease, excluding the $2,710,000 for the initial purchase of equipment.

The first year's cost of setting up the Compliance Test Facility alone would permit the Government to purchase some 600 of the most complex 30 mph automobile crash tests from industry. This is a significant number since during the past year only about 30 crash tests were conducted in total. If, for example, only 100 crash tests were conducted at the proposed facility during the next three years, the unit cost of each test would be approximately $71,800 per test (assuming no increase in staff and amortizing the test equipment over a three-year period). This cost of $71,800 compared to the $6,500 unit cost for industry conducting the same test is really of substantial concern.

Clearly, the cost effectiveness of the proposed facility is a matter of serious doubt for there is little question that industry has a demonstrated record of conducting the required tests in an extremely low-cost basis compared to what Government would have to pay for the same test.

In summary, I would like to say that as a taxpayer, I strongly feel that the expenditure of $4,200,000 in taxpayer's funds to build a new duplicative and redundant compliance test facility is inappropriate and unnecessary.

As a businessman, I find it very disconcerting that when the private sector has built up a national capability for conducting compliance tests and delivered a demonstrated record of high-quality, low cost performance, the Federal Government is now threatening to develop a competitive governmental facility which could easily usurp the limited

work which is available to an industry which is presently operating far below its potential capacity.

In closing, I would like to say that is a rare occurrence in the world today for a small businessman who has a major difference of opinion with as powerful an organization as the Department of Transportation to be able to honestly, openly, and candidly discuss that difference of opinion with the top management of that organization as I have done, and to be able to present his views to the highest representatives of the Congress for their objective judgement as I am doing today---and to do all of that without fear of repression or punitive actions which could adversely affect the very survival of his business. This speaks very highly of our system of government and of my assessment of the integrity and character of the management and leadership within the Department of Transportation.

Thank you very much for the privilege of addressing the subcommittee today.

AUTOMOBILE COMPLIANCE TEST FACILITY

Mr. STEVENS. This matter is concerned with a proposal which has been made by the Department of Transportation to obtain $4,200,000 for the development of an automobile compliance test facility. As you know, this proposal was deleted from the Department of Transportation's budget by the House of Representatives' Appropriations Committee and has been submitted to the Senate Appropriations Committee on an appeal basis.

I am here to urge the Senate Subcommittee on Transportation to disapprove the Department of Transportation's request for funds to build a new automotive compliance test facility on the basis that I feel that such a facility would clearly represent an unnecessary expenditure of taxpayer's money, that it would be duplicative of facilities which presently exist in the private sector and which are operating substantially below capacity, and that it is potentially damaging to the growth, development, and possibly the very survival of numerous independent testing laboratories who are presently performing the exact work which the proposed new compliance test facility would conduct.

To better understand why we feel so strongly that such a facility is not required, I believe it would be helpful to understand what our firm does and to comment briefly on automobile compliance tests in general.

Our firm, Ultrasystems, Inc., has developed what is generally considered to be the most advanced, independent automobile test facility in the Nation. A photograph of our facility is included along with the text of my prepared statement. Our company is a diversified high-technology research and development corporation which is actively involved in various aspects of the field of safety engineering. The field of automotive safety represents the largest single element of our business.

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Our engineers are seasoned veterans in conducting these compliance tests which range from very simple tests of windshield wipers, door latches, and defrosters, to very complex and sophisticated tests involving full-scale automobile crash tests into a barrier at a speed of 30 miles per hour. A sample photograph of such a crash-test is provided along with the text of my statement. These complex compliance tests contain instrumented anthropomorphic dummies and are used to evaluate the adequacy of passenger restraint systems, the structural retention of the windshield, the integrity of the fuel system, and the structure deformation of the steering column in a crash environment.

We and other independent testing laboratories who are involved in this type of automobile safety test work feel very strongly that a new Government-financed compliance test facility is neither appropriate nor required for the following reasons:

1. Unnecessary expenditure of taxpayers funds:

First, the initial expenditure of $4,200,000 in taxpayer's funds for equipment, facility leasing costs, and personnel for the new compliance test facility seems highly inappropriate from a need standpoint, inasmuch as at the present time at least ten qualified corporations are avialable in the United States and have a proven capability for conducting automobile compliance tests for the Department of Transportation.

Nation's capacity far exceeds demand:

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For example, during the past 12 months our firm, Ultrasystems, Inc., which is probably the leading organization in the Nation in conducting automobile compliance test of the most complex type, has conducted a total of 27 full-scale 30 mile per hour crash tests as part of the Department of Transportation's compliance test program.

Our company alone has the capacity to not just double or triple the number of compliance tests which we ran during the past 12 months, but to increase the number of tests by a factor of 50. We conducted all those 27 tests in 1 week and we could do 50 times that if the requirement were there to do so.

When one considers that the other nine compliance test corporations have similar excess capacity for compliance testing, the building of a new Government sponsored facility to further expand the Nation's compliance testing capacity does not appear warranted.

2. Fast reaction compliance testing capability:

The Government has suggested that a new automobile compliance test facility is needed in order to permit the Department of Transportation to have a fast reaction capability to conduct compliance tests or defect investigations.

I submit to you that a fast reaction capability presently exists in industry to conduct the required tests. For example, simple compliance tests can be performed within hours after authorization to proceed is received. The most complex and sophisticated compliance test, the 30-mile-per-hour barrier impact test, can be conducted within 3 days after the Government issues authorization to proceed, a time which is much shorter than any indicated need.

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3. "Hands on" Government testing:

The Government has also suggested that the new compliance test facility is required to permit the Government to have a "hands on" testing capability to directly conduct compliance tests.

I can fully understand the desire for such a capability, but honestly cannot appreciate the need for such a capability when independent, highly-qualified testing agencies such as our firm have spent millions of dollars in developing the professional expertise and providing the facilities necessary to conduct compliance tests. This expertise and extensive facilitization does not presently exist in the Federal Government; it would take years to develop, it would be costly to achieve—and most importantly it does not appear to be required in order to get high-quality, low-cost test results which are presently available from the private sector.

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4. The conflict-of-interest myth:

The Government has suggested that a conflict of interest could be avoided if Government performed the automobile compliance tests rather than industry.

I would like to say that this justification for building a multimillion dollar facility is in my opinion totally unsubstantiated and unjustified. I can categorically say that there has never been a conflict of interest in any work which we have performed, nor to my knowledge has there ever been any conflict of interest among any of the other reputable independent compliance testing organizations presently supporting the Department of Transportation's automobile compliance test program.

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It is also important to understand that compliance testing is a very exacting and precise engineering endeavor based upon measurements which are not subject to opinion or judgment.

For example, all of our instruments used in compliance tests are calibrated against Bureau of Standards equipment for accuracy.

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5. Cost-benefit consideration:

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Clearly, the cost effectiveness of the proposed facility is a matter of serious doubt for there is little question that industry has a demonstrated record of conducting the required tests on an extremely low-cost basis compared to what Government would have to pay for the same test.

In summary, I would like to say that as a taxpayer, I strongly feel that the expenditure of $4,200,000 in taxpayers' funds to build a new duplicative and redundant compliance test facility is inappropriate and unnecessary.

As a businessman, I find it very disconcerting that when the private sector has built up a national capability for conducting compliance tests and delivered a demonstrated record of high-quality, low cost performance, the Federal Government is now threatening to develop a competitive governmental facility which could easily usurp the limited work which is available to an industry which is presently operating far below its potential capacity.

In closing, I would like to say that it is a rare occurrence in the world today for a small businessman who has a major difference of opinion with as powerful an organization as the Department of Transportation to be able to honestly, openly, and candidly discuss that difference of opinion with the top management of that organization as I have done, and to be able to present his views to the highest representatives of the Congress for their objective judgment as I am doing today—and to do all of that without fear of repression or punitive actions which could adversely affect the very survival of his business. This speaks very highly of our system of government and of my assessment of the integrity and character of the management and leadership within the Department of Transportation.

Thank you very much for the privilege of addressing the subcommittee today.

Senator BYRD. Thank you for appearing before the subcommittee. We appreciate your fine statement.

REGULATORY UTILITY COMMISSIONER

STATEMENT OF SUMNER J. KATZ, ASSISTANT GENERAL COUNSEL OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, APPEARING ON BEHALF OF ELIZABETH V. HALLANAN, SECOND VICE PRESIDENT, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, AND A COMMISSIONER, WEST VIRGINIA PUBLIC SERVICE COMMISSION

Senator BYRD. Mr. Katz, Mr. Sumner Katz, assistant general counsel of the National Association of Regulatory Utility Commissioners.

Go ahead, Mr. Katz.

Mr. KATZ. Mr. Chairman, I have a statement that I would like to submit for the record, and with your permission I would like to read some highlights.

Senator BYRD. I will be pleased to let you do that now.

Mr. KATZ. My name is Sumner J. Katz. I am assistant general counsel of the National Association of Regulatory Utility Commissioners, commonly known as the NARUC. I am presenting this statement on behalf of Elizabeth V. Hallanan, second vice president of the NARUC and a commissioner of the West Virginia Public Service Commission.

The NARUC is a quasi-governmental nonprofit organization founded in 1889. Within its membership are the governmental agen-

cies of the 50 States and of the District of Columbia, Puerto Rico, and the Virgin Islands engaged in the regulation of utilities and carriers. Our chief objective is to serve the public interest by seeking to improve the quality and effectiveness of public regulation.

The members of the NARUC appreciate the opportunity you have given me as their spokesman to make their views known on appropriations to the Department of Transportation, DOT, for the 1975 fiscal year, July 1, 1974 to June 30, 1975.

The members of the State regulatory agencies across the Nation vigorously support:

(1) An appropriation in the amount of $1.8 million for inclusion in the 1975 DOT budget to fund in part the grant-in-aid program to the States as authorized by section 5 of the Natural Gas Pipeline Safety Act of 1968, (49 U.S.C., sec. 1674); and

(2) An appropriation in the amount of $3.5 million for inclusion in the 1975 DOT budget to fund in part the grant-in-air program to the States as authorized by section 206 of the Federal Railroad Safety Act of 1970 (45 U.S.C.A., sec. 435).

The Natural Gas Pipeline Safety Act of 1968 and the Federal Railroad Safety Act of 1970 established essentially Federal programs to improve gas pipeline and railroad safety. In achieving these important public goals, the acts rely heavily upon a strong Federal-State cooperative effort.

Section 5(a) of the Natural Gas Pipeline Safety Act (49 U.S.C.A., sec. 1674(a)) and section 206(a) of the Federal Railroad Safety Act (45 U.S.C.A., sec. 435(a)) contain the so-called certification concept which permits a State to participate in the national safety programs if it can do an effective regulatory job.

Under this concept, a State agency, which has the ability to effectively enforce Federal safety regulations, is permitted to administer comprehensive gas and rail safety programs within that State. The criteria for this State participation are congressionally prescribed, and administrative discretion is restricted to determining whether or not the congressional criteria have been satisfied.

State enforcement of the Federal regulations is reflected by a State agency submitting to the Secretary of Transportation an annual certificate accompanied by supporting information depicting each of the State programs. If the Secretary of Transportation finds, through surveillance procedures, that a State agency has an inadequate enforcement program, he is authorized to reject the certificate and assert direct Federal regulation. When the Secretary questions the adequacy of State enforcement, the burden of proof is upon the State agency.

In order to complement the certification concept and to broaden the opportunity for State participation, section 5(b) of the Natural Gas Pipeline Safety Act and section 206(c) of the Federal Railroad Safety Act contain the agreement concept. In those cases where a State agency is unable to satisfy the congressionally prescribed criteria for administering a gas or rail safety program pursuant to certification, the Secretary of Transportation is empowered to enter into an agreement with such State agency authorizing it to provide all or any part of the inspection service necessary to obtain compliance with Federal safety regulations.

Section 5(c) of the Natural Gas Pipeline Safety Act and section 206(d) of the Federal Railroad Safety Act provide that those State agencies requiring financial assistance to conduct comprehensive gas and rail safety programs, under either certification or agreement, may receive Federal funds up to 50 percent of the cost of the programs if approved by the Secretary. To be eligible for a grant, State expenditures under a program must "not fall below the average level of such expenditures for the last 2 fiscal years" preceding the effective date of the act involved.

The provision of such financial assistance to State agencies, on a matching basis, will reduce the need for establishing a large Federal field staff and thereby permit the Congress to implement its national safety programs for far less than what it would otherwise cost for the Federal Government to assume the entire financial burden. In other words, the use of matching funds would in effect pull State money into the Federal programs. Moreover, it provides incentive for the States to sponsor more comprehensive enforcement programs in support of the Federal scheme.

DOT in its 1975 budget has requested an appropriation of $12 million for its grant-in-aid program to the States for gas pipeline safety, and an appropriation of $1 million for its grant-in-aid program to the States for railroad safety.

Although we believe these requested amounts are substantially inadequate, we do strongly indorse that part of the budget request to permit any grant-in-aid funds appropriated to remain available until expended. This is particularly important because the States are participating in ongoing safety programs which continue from year to year.

GAS PIPELINE SAFETY

I am pleased to report, that all 50 States, the District of Columbia and Puerto Rico are now involved in the gas pipeline safety program playing a vital partnership role with the Federal Government. All of these States have not requested matching grant funds from the Federal Government.

Those that have, have submitted estimates of their funding requirements to us and also to the Office of Pipeline Safety and a State-by-State breakdown of those estimates accompanies my testimony under the heading of the appendix.

If you would glance at the appendix, you will see the States' safety needs for fiscal year 1975 are $1.7 million. In addition to this we have two newly participating States whose estimates are not reflected in the appendix figures. Their participation would bring the total needed by the States to effectively carry out this important program to $1.8 million.

Mr. Chairman, this money is urgently needed for an essential purpose that bears directly on the public good. I cannot stress too vigorously the need for adequate State safety programs in the field of natural gas pipelines.

The headlines in the daily newspapers put the case far more eloquently than I can. On last April 23 a gas explosion quite literally wrecked a 24-story office building in New York City.[1]

[1] "Office Tower Blast Near U.N. Injuries 70," New York Times, Apr. 23, 1974.

The blast injured 70 persons, 3 of them critically, left hundreds of persons in nearby apartment buildings temporarily homeless and did 10 million dollars' worth of damage. Miraculously the explosion occurred shortly before the building filled up with its daily complement of office workers. Otherwise the carnage would have been obscene.

I suppose that means, gentlemen, that those people were lucky. Luck, however, should not be a factor that determines whether people live or die as a result of gas explosions. The States and the Federal Government should eliminate that factor by providing their citizens with a vigorous, meaningful safety program.

In the Washington, D. C., metropolitan area alone in the past months the toll of gas explosions has been frightening.

Only several weeks ago, on June 10, 1974, a massive gas explosion from a ruptured pipe occurred in northern Virginia, only 40 miles from Washington. The explosion took place in a cornfield, leaving behind a crater 120 feet long and 7 feet deep and a vast expanse of scorched earth. Fortunately, no one was hurt, but 150 families had to be evacuated from the area. Representative Macdonald of Massachusetts, chairman of the House Commerce Subcommittee on Communications and Power, noted that it "could have been a major catastrophe" if it had occurred 20 miles closer to Washington.[2]

Late in 1972 a gas explosion and fire killed three persons and destroyed two homes in Fairfax County, Va. On November 15, 1972, three persons were injured in a gas explosion that demolished a home in East Riverdale, Md. In June of last year three persons were killed in a gas explosion and fire at a home in Bowie, Md. That same month an unoccupied house in Columbia, Md. blew up in a gas explosion. The following month a gas explosion at an apartment complex in Annandale, Va., caused a fire and severe property damage and 2 days later there was a gas explosion at a restaurant in Arlington, Va.

In January of this year a 14-member task force composed of Prince Georges County, Md., officials and utility representatives formed to investigate gas pipeline leaks reported that the State public service commission was understaffed for the purpose of accomplishing all of its legal responsibilities.

Last April seven persons died when an El Paso, Tex., apartment building was demolished by a gas explosion.[4]

In its August 4, 1973 issue, Business Week magazine reported the Office of Pipeline Safety as having tabulated 461 major gas distribution system accidents for the first 6 months of that year resulting in 39 deaths and 218 injuries.[5] This compared with 28 deaths and 294 injuries for all of 1972.[6]

In 1972 two Ohio gas pipeline accidents resulted in the deaths of eight citizens, seven of them in the Cincinnati area.

On February 21, 1973, in Coopersburg, Pa., a contractor working on a municipal sewer project was excavating with dynamite. A blast cracked open an underground gas pipeline, apparently at a welded joint, and gas flowed into the nearby six-unit apartment building. Five

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[2] The Washington Star-News, June 11, 1974, p. B–4.
[3] The Washington Post, Jan. 23, 1974.
[4] Business Week Magazine, Aug. 4, 1973, p. 50.
[5] Ibid.
[6] Ibid.

died and 16 were injured in the subsequent explosion that demolished the apartment building.[7]

On November 17, 1972 an operating engineer ran a bulldozer over a gasline in Lake City, Minn. Forty feet away the basement of a store filled with gas. An employee smelled the odor and, entering the basement, he snapped on the light switch. Six people were killed in the explosion that followed.[8]

In May 1968 a construction crew Hapeville, Ga., accidently broke a gas service line outside a day nursery filled with children. Gas seeped along the outside of the buried pipe into the building. Seven children and two adults were killed in that explosion.[9]

These examples, shocking and horrible to contemplate as they are, are just a few of the many such incidents that occur each year. The seriousness of the situation is not simply that these awful things happened, but also that worse disasters might occur if we don't soon breathe fresh life into the entire program of gas pipeline safety.

As evidence of this I ask you to consider just one of a number of "near-miss" type occurrences that have prompted thoughtful observers such as John H. Reed, chairman of the National Transportation Safety Board, to say, "We have come very, very close to a major catastrophe. So far we have been lucky." [10]

On December 9, 1970, in Franklin County, Mo., 756 barrels of liquefied propane gas spewed from a pipeline break and detonated with the force of 100,000 pounds of TNT. Nearby homes were literally wiped off the face of the earth, windows were smashed 12 miles away and the impact registered on a seismograph in St. Louis, 55 miles away. Fire raged in the valley for 12 hours.[11]

Think what the loss of life and property damage might have been if the leak had occurred further down the line in the city of St. Louis.

RAILROAD SAFETY

Far more serious, I believe, is the situation of railroad safety. The depressing record of railroad accidents in this country with the attendant loss of life, injuries and property damage is fast becoming a national scandal.

In the 3 months of 1973 between May 1 and July 31, 488 people lost their lives in railroad accidents and 4,408 were injured. For the same period of time in 1972 the total was 479 persons killed and 4,424 injured.[12] For the calendar year 1973 the statistics are grim indeed: 1,913 dead and 17,718 injuried.[13]

Only several days ago, on July 19, 1974, a massive tank car explosion rocked the city of Decature, Ill., killing four persons and injuring 140 others. Damage to railroad property alone was estimated at $8.72 million. In addition, a newly built high school was destroyed and thousands of buildings were damaged.[14]

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[7] Gas Explosions: The Rising Roll, by William Hoffer, The Washington Post, March 1973.
[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] Ibid.
[12] Department of Transportation, Federal Railroad Administration preliminary report of railroad accidents and resulting casualties, May, June and July 1973.
[13] Department of Transportation, Federal Railroad Administration, preliminary report of railroad accidents and resulting casualties, December 1973.
[14] Washington Post, July 23, 1974.

On June 29, 1974 a 43-car freight train loaded with chemicals derailed and exploded in flames near Nacogdoches, Tex. The derailment was apparently caused by an explosion in cars carrying vinyl chloride and antiknock motor fuel. Fires were burning for more than 2 days.[15]

In February of this year two 22-year-old newsmen from Oneonta, N.Y., on assignment to cover a train derailment, were seriously injured, along with 54 other people when three of the derailed cars, containing propane gas, erupted in an awesome explosion.[16]

The National Transportation Safety Board (NTSB) recently distributed a publication entitled "Broken Rails: A Major Cause of Train Accidents" which shows in a graphic manner the need for a vigorous nationwide program of track inspection.

The NTSB report states,

> The rate of rail failures is almost double the rate of increase in average car weights. The frequency of reportable train accidents increased at a rate approximately four times the rate of increase of rail failures per track-mile. From 1962 to 1970 the rail failure rate increased 44 percent while train accidents increased 177 percent and reported property damage increased 278 percent. Therefore, the probability of an accident occurring because of rail failure has increased drastically.

Thus far most derailments have been freight trains, but we have no guarantee we will always be this lucky. For instance, as recently as April 30 of this year Amtrak's "Floridian" train derailed near Winimac, Ind., injuring 29 of the 121 persons on board.[17] It is ironic to note that at the time of the accident the train had been running 6 hours late because it had earlier been rerouted around another derailment in Florida.

During the first 4 months of this year there were 12 accidents involving Amtrak trains, injuring 88 and killing 1. In all of 1973 there were 11 Amtrak accidents, injuring 189 persons and killing 3.[18]

Last fall the Washington Star-News carried a story headlined "B. & O. Accidents Are Increasing on D.C.-Baltimore Lines."[19] The story noted that in the first 6 months of last year there were six accidents on the same stretch of track, all derailments, all involving freight trains and three attributed directly to track conditions.

The story quoted Mac E. Rogers, FRA Associate Administrator for Safety, as saying that:

> He had "been aware that things weren't peachy rosy" in B. & O.'s Baltimore-Washington line, but that his agency has 6 engineers and 12 track inspectors to examine the nation's 333,000 miles of track.[20]

No loss of life occurred in those particular accidents but such is not always the case. Consider the following headlines taken from the Washington Post which represent a mere sampling of others too numerous to list here:

"Train Crash Kills Two"—Cobden, Ill., December 3, 1973; "Two Killed in Three Train Collision"—Bartlett, Ill., November 24, 1973; "Twins, 11 Killed by Train"—Montgomery County, Md., October 28, 1973; "Two Railroad Crewmen Killed in Fire as Truck, Train Collide"—Martin City, Mo., September 16, 1973; "Six Killed in Explosion

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[15] Washington Star-News, July 1, 1974.
[16] Broadcasting, Feb. 25, 1974, p. 49.
[17] Washington Star-News, May 1, 1974.
[18] H.R. Report No. 93-1083. Report Accompanying H.R. 15223, June 6, 1974, p. 3.
[19] Washington Star-News, Sept. 6, 1973, by Stephen M. Aug.
[20] Ibid.

of Tank Car"—Kingman, Ariz., July 6, 1973; "Five Crewmen of Birmingham Southern RR Killed as Train Derails"—Birmingham, Ala., July 15, 1973; "40 Hurt, Two Killed in N.Y. Train Crash"—Mount Vernon, N.Y., June 9, 1973; "D.C. Woman Dies of Injuries in N.C. Train Crash," March 15, 1973; "Auto-Train Crash Kills a Trucker," March 14, 1973; "Three Crewmen Die in Tucson Wrecks"—Tucson, Ariz., January 7, 1973; and "Three Die as Trains Sideswipe in La."—Killona, La., February 22, 1973.

These are just the tip of the iceberg. There are many other incidents. For instance, on January 15 of this year the paper reported theree derailments. One in Ardmore, Okla., resulted in 30 passengers being injured. In McGregor, Tex., a freight car loaded with volatile petrochemicals derailed and exploded, and in White Haven, Pa., two tank cars filled with deadly chlorine gas overturned and ruptured. Families within a radius of one-half mile had to be evacuated.

Derailments of tank cars carrying chlorine gas and other poisonous chemicals have become almost commonplace. For instance, on February 6, 1973, a freight train derailment resulted in the spilling of 20,000 gallons of sulfuric acid in Dowingtown, Pa. As a result 1,500 people had to flee their homes.[21] Since January 1, 1973, there have been 124 rail accidents in which hazardous materials carried aboard the train were involved. Seven persons were killed and 159 injured.[22]

Other newsstories carry details of derailments involving up to 50 freight cars with property damage reaching half a million dollars. Last year two trains carrying munitions blew up, one in California, and another in Arizona.

Perhaps the most telling headline of them all was the one carried in the April 27, 1973, editions of the Washington Post which heralded a story about a report made by the National Transportation Safety Board following an investigation into a railroad collison that derailed 18 cars and locomotives in Arlington County, Va. It said, "Inattention, Defective Rail Blamed in Arlington Wreck."

"Inattention," Mr. Chairman, is exactly what the States are trying hardest to precluded by a meaningful railroad safety program mounted nationwide.

The FRA, in December 1973, finally issued regulations prescribing the procedures and standards for State participation in a national safety program as authorized by section 206 of the Federal Railroad Safety Act of 1970. The States are in the process of submitting applications to the FRA to participate in the program and are otherwise "tooling up" to play a greater role in rail safety. State efforts in the rail safety area are vital to the future success of any safety program.

We have examined the question carefully and are of the opinion that Congress should appropriate $3.5 million in matching grant funds in order to help make such a program a reality.

The House, on June 24, 1974, passed H.R. 15223, which among other things, authorizes the appropriation of $3.5 million for fiscal year 1975 for the State rail safety grant-in-aid program.

Grant-in-aid funds would be used by the States for participation in training programs established by the Federal Railroad Administration. They could also be used to meet other high priorities the States

[21] The Washington Post, Feb. 6, 1973.
[22] H.R. Rep. No. 93–1083, Report Accompanying H.R. 15223, June 6, 1974, p. 15.

have in the rail safety area. These priorities can be expected to differ from State to State, given the wide variety of local conditions in a country as large and diverse as ours.

CONCLUSION

Obviously the intergovernmental partnerships envisioned by these acts cannot work at an acceptable level of efficiency unless there is at least a minimum level of grants-in-aid to States requiring such assistance. The Federal enforcement staffs in the gas and rail safety programs are woefully inadequate. Therefore, the public safety clearly demands that these Federal staffs be supplemented by all available State enforcement officers and they, in turn, are dependent on the grants-in-aid authorized by the acts. Moreover, our proposed grants-in-aid are in accordance with the goals of President Nixon as enunciated in his "New Federalism" concept.

This philosophy of intergovernmental relations was also reflected in the "Creative Federalism" of President Johnson and in this State of the Union Address of 1967 when he announced his objective of achieving a "total working partnership" between the Federal and State governments.

In conclusion, we believed that grants-in-aid here proposed would be a sound investment for the Congress to make toward strengthening the national gas and rail safety programs and would fulfill for 1975 its grant-in-aid commitments under the acts.

Once again, Mr. Chairman and members of the subcommittee, I want to thank you for this opportunity to make the views of the NARUC on this vital subject known to you.

Thank you for your attention.

Senator BYRD. Thank you, Mr. Katz.

[The appendix follows:]

APPENDIX

THE AMOUNT OF FEDERAL ASSISTANCE REQUIRED BY STATE AGENCIES TO AID IN FINANCING THEIR GAS PIPELINE SAFETY PROGRAM UNDER SECTION 5 OF THE NATURAL GAS PIPELINE SAFETY ACT OF 1968 (49 U.S.C.A., SEC. 1674)

STATE	1975
Alaska	$ 12,650
Arizona	13,136
Arkansas	32,810
California	63,354
Colorado	19,525
Connecticut	27,450
Florida	75,197
Georgia	37,143
Hawaii	12,500
Idaho	18,086
Illinois	25,000
Indiana	40,297
Iowa	36,100
Kansas	63,446
Kentucky	69,813
Maine	20,835
Maryland	5,650
Michigan	69,205
Minnesota	30,215
Montana	20,900
Nebraska	27,266
Nevada	11,909
New Hampshire	14,769
New Mexico	30,591
New York	369,894
North Carolina	49,041
North Dakota	10,975
Ohio	53,950
Oregon	21,667
Pennsylvania	123,500
Rhode Island	15,573
South Dakota	11,896
Tennessee	56,446
Utah	15,675
Vermont	12,905
Washington	22,500
West Virginia	58,167
Wisconsin	33,020
Wyoming	43,359
Puerto Rico	27,000
TOTAL	$1,703,415

STATEMENT OF CARL V. LYON, AMERICAN ASSOCIATION OF RAILROADS

PREPARED STATEMENT

Mr. Carl V. Lyon of the American Association of Railroads.

Mr. LYON. Mr. Chairman, I am Carl V. Lyon and we will file for the record a statement of Mr. Stephen Ailes, president of the Association of American Railroads, and the statement of Dr. William J. Harris, vice president of the Research and Test Department. Dr. Harris will give a brief summary of the statements.

Senator BYRD. The statement will be included in the record in its entirety.

[The statement follows:]

STATEMENT OF STEPHEN AILES, PRESIDENT

ASSOCIATION OF AMERICAN RAILROADS

My name is Stephen Ailes. I am President of the Association of American Railroads (the AAR), which is a voluntary, unincorporated, non-profit organization composed of member railroads operating in the United States, Canada, and Mexico. Its members operate 97 percent of the railroad mileage and produce 97 percent of the revenues of all United States railroads.

Practically all of the wide ranging activities in which the Federal Railroad Administration (FRA) is engaged in some way or another affects the private railroad companies I represent. For this reason we are vitally concerned with FRA's development, funding and overall ability to perform its mission.

We want FRA to continue to grow in stature, professionalism, and prestige. We want FRA to become a still more effective voice within the Government. Government is vitally involved in rail transportation and its problems -- and I think it is fair to say that Government shares responsibility for many of the problems. These matters and others will continue to demand attention of Government and we would hope that FRA may assert growing influence and leadership in this respect. FRA's ability to do so, of course, depends upon adequate program and budgetary support.

Accordingly, the purpose of my statement is to express our general support for the FRA request bearing in mind, of course, that we do not thereby endorse all the specific regulations or indeed all programs that FRA has seen fit to prescribe or promote. Dr. William J. Harris, Vice President of the AAR's Research and Test Department, will present testimony directed to specific parts of the FRA request.

When FRA was created in April 1967 by the Department of Transportation Act, 80 Stat. 931, (1966), concurrently with the establishment of the Department of Transportation, Section 2(b)(1) of the Act declared that:

> "The Congress therefore finds that the establishment of a Department of Transportation is necessary in the public interest and to assure the coordinated, effective administration of the transportation programs of the Federal Government; to facilitate the development and improvement of coordinated transportation service, to be provided by private enterprise to the maximum extent feasible; to encourage cooperation of Federal, State, and local governments, carriers, labor, and other interested parties toward the achievement of national transportation objectives; to stimulate technological advances in transportation; to provide general leadership in the identification and solution of transportation problems; and to develop and recommend to the President and the Congress for approval national transportation policies and programs to accomplish these objectives with full and appropriate consideration of the needs of the public, users, carriers, industry, labor, and the national defense."

The Federal Government and thus the Department of Transportation has become increasingly involved in rail transportation matters. This has been at the highest official levels in the Department but the focal point for rail oriented technical, scientific, economic and business knowledge is in FRA. This is as it should be. We in the rail industry want FRA to be in a position to attract and retain excellent professional and other personnel and we want it to be fully equipped with resources that will enable it to carry out its responsibilities in the most professional way. Much of what FRA is called upon to do requires development of data, information, and knowledge and submitting it to critical analysis.

Before FRA was established the Federal Government had virtually no rail research program except for the beginning of the high speed ground transportation project in the Department of Commerce. In reporting the DOT bill on July 15, 1966, notably absent from the House Committee on Government Operations' comment was any mention of government spending for a rail system. The Committee said:

> "Transportation employment and services, for the most part, are the responsibilities of private enterprise. Nevertheless the Federal Government supports or regulates almost every means of transportation. The Director of the Budget testified that in the current fiscal year the Government expects to spend $5 billion on the highway system, $879 million for aviation, and

$740 million for our merchant marine including the Coast Guard." [H. Rept. No. 1701, p. 15, 89th Cong. 2d Sess.]

A review of the comparative Federal budget for transportation purposes covering the current fiscal year, with which the Subcommittee is entirely familiar, shows a growing awareness of the public interest in the Nation's rail system; but it certainly does not indicate any problem of overemphasis on the rail mode.

It is of great importance that whatever FRA undertakes whether developing safety regulations, recommending remedial legislation or other activities, it should have an adequate basis upon which to act. A prime example of such a need has been in the development of safety standards and regulations pursuant to the Federal Railroad Safety Act where there simply has not been enough fundamental, reliable, carefully assembled knowledge about rail equipment or track. This leaves too much room for conjecture, opinion, and application of criteria other than established data proven by research. There is a need for subjecting many proposals, on their face perhaps worthwhile, to demonstration in actual service or controlled experiment to determine their feasibility and effectiveness. This should include cost/benefit analyses in most instances.

Like the FRA, we and many others are of the firm view that railroads possess the potential to perform a growing share of the Nation's transportation business in the future thus making substantial savings in energy supplies. Accomplishment of such a goal carries a high priority. FRA activities in this regard have been helpful and we believe this to be an area where it can make a much greater contribution.

In conclusion, let me again express general support for the FRA budget request for Fiscal Year 1975 and to express confidence that through a continued, coordinated, and cooperative development program much can be accomplished toward achieving a truly balanced transportation system in the United States.

STATEMENT OF WILLIAM J. HARRIS, VICE PRESIDENT, RESEARCH AND TEST DEPARTMENT, ASSOCIATION OF AMERICAN RAILROADS

RESEARCH AND TEST DEPARTMENT

Mr. HARRIS. My name is William J. Harris and I am vice president of the Research and Test Department of the Association of American Railroads (the AAR). The AAR is a voluntary, unincorporated, nonprofit organization composed of member railroads operating in the United States, Canada and Mexico. Its members operate 97 percent of the railroad mileage and produce 97 percent of the revenues of all U.S. railroads.

The Research and Test Department of the Association of American Railroads is currently managing a research program utilizing funds from the AAR budget and funds in cooperation programs contributed from railroads or the supply industry. Furthermore, the AAR is carrying on some research on a cooperative basis under Federal Railroad Administration contracts.

AAR research and development programs are directed at improving the safety of railroad operations in insuring an adequate response to environmental concerns in regard to the railroad industry and to support improving the effectiveness of the rail mode of transportation in the public interest. They are also directed at solving critical and timely problems by providing improved performance specifications for equipment, improved guidelines for operations and other related activities. In addition, the programs are designed to provide an ever-broader technological basis in order that the industry can be in position to anticipate change more effectively and to avoid unnecessary dislocations as requirements for improved transportation service become greater.

While the industry is in position to support work directed at many of its problems, there are more fundamental issues that require a base of technology that it is appropriate for the FRA to undertake. Therefore, on behalf of improved rail transportation in the United States there is a very important role for the FRA to play in the field of research and technology.

It is important to the railroad industry to have an effective staff in the FRA who are concerned with research. Accordingly, we support the plans of the FRA to expand its railroad research and development function and to increase the allocation within the staff of FRA for this purpose. In order to have an effective relationship between the railroad industry and the FRA it is essential that there be individuals who can cover very specific areas of technology; but in view of the broad range of issues of concern to the railroad industry and the number of fields of science, engineering and economics that are related to problems of the industry, a rather large staff of competent scientists engineers and economists is an essential ingredient of an agency so important to the future of the railroad industry as is the FRA.

We believe that the consolidation of the railroad research and development program into a single major appropriation avoids what has been a relatively artificial separation between railroad research and high-speed ground transportation research and development of the past.

That activity of FRA directed toward analysis of industry problems represents the cornerstone of its overall research program. By careful and thoughtful analysis of the nature of the railroad transportation function, its relationship to the national economy, and its emerging structure in response to the changing pattern of demand, the FRA can provide a basis for a wide range of governmental decisions as well as assist the railroad industry in determining how to best achieve its overall objectives.

About 2 years the railroads established in the AAR a new office of staff studies which directs itself primarily to analysis and study of economic and financial problems of the industry. The work of this office has been most helpful in industry efforts to plan, forecast and meet developing problems. But the nature of the required research is such that it is difficult for any individual railroad company or for an association of companies to address the wide range of socioeconomic issues that warrant study in view of the dynamic changes in the national economy and the requirements for a railroad industry that is truly responsive to the national needs. To that end FRA can provide a singular contribution by effective research on industry problems; and accordingly, adequate funding in this area is highly desirable.

Some of the techniques required for analysis of the industry require the development of analytical approaches which are somewhat speculative in character and, therefore, not as feasible for the industry to approach as they are for Government to develop. In general, governmental research can address higher risk issues than any industry research program can afford to attack. Therefore, I support with enthusiasm a substantial program by the FRA in the field of industry problems and look forward to appropriate cooperation in these studies where such cooperation is mutually beneficial.

The effective utilization of the national freight car fleet is a matter of profound concern to individual railroad companies and to the industry in general. A wide range of specific activities are in progress on each railroad and in the AAR which are directed at attempts to improve care utilization. Coordination of this effort with the FRA is essential toward achieving the goal of FRA as well as the railroads in insuring an effective and responsive rail transportation system. Thus, programs in progress within the industry can benefit substantially from, and make an important contribution to, programs contemplated by the FRA which have to do with freight car management.

One of the great tragedies of research in some fields sponsored by some Government agencies is that they result only in reports that summarize the findings of the program, but have not found application. It is the intention of the AAR and the railroad industry to make use of every possible output from the FRA that has some potential for making a contribution toward improving the railroad industry's ability to serve in the national interest. Thus, the cooperative efforts in progress can go far to insure effective utilization of research performed by the FRA.

In the track-train dynamics program, planned by the AAR and initiated by the industry, the support of the FRA has been invaluable. Its contractors have made significant technical contributions; its funding has added about a third to the total investment in the program; and it has therefore extended the scope in this effort directed

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at providing the scientific underpinning for improving train operations and, ultimately, for the design of improved equipment and track structures.

While the railroad industry has a relatively extensive program directed at improving safety of equipment by improving the design of components, there are certain inspection techniques where a more fundamental scientific development is required that is within the range of FRA support, but outside that which is feasible for the industry to support. Here the interaction between a major governmental investment and an eager desire by the industry for improved technology represents an ideal potential for interaction.

The railroad industry is committed toward effective utilization of the Pueblo Test Center. One track designed for dynamic evaluation has already been in extensive use. Another track designed for impact tests is the subject of extensive planning for important programs to be launched on a cooperative basis later in calendar year 1974. The rail-wheel dynamics laboratory represents an opportunity to test large components prior to their being run on line of road and has substantial potential for effective development of improved components and equipment.

In order that the rail-wheel dynamics laboratory attain its full potential. the Pueblo Test Center must have a broad supporting technology. If a component breaks in a test at Pueblo, it is highly inefficient to ship that broken component halfway across the country for examination at a laboratory, say, in Chicago before the next test can be run. It is essential to have adequate testing and inspection equipment and laboratory facilities at the Pueblo Test Center in order that immediate examination can be conducted of failed components and immediate rebuilding of a component proceed so as to keep in active service the major test facilities that are the central core of the rail-wheel dynamics laboratory. Accordingly, a balanced supporting technology program is an essential ingredient at Pueblo; and without it, the test center will have far less use.

In regard to the high-speed program, while the railroad industry at the present time does not have any major requirement for the exceedingly high-speed devices, it is quite clear that there can be some technological payoff from understanding what happens at the outer limits of ground-guided transportation. Furthermore, in examination of the patterns of development of transportation around the world, I clearly anticipate a time within the next two decades when an understanding of the high-speed performance of ground-guided vehicles will be essential as national priorities for the movement of people are reexamined.

Only the FRA can pursue this kind of a program. Pursued at the same site where more conventional equipment is tested, the interplay between knowledge gained in one program and another will be great. The potential for satisfying a national requirement for a technological base for advanced systems in the next two decades will be established. The FRA program on high-speed vehicles is an essential ingredient of a broad spectrum of research that should be expected of the Federal Railroad Administration.

The concern of the Department of Transportation and the FRA with improved safety is shared equally with the railroad industry. In

order to improve safety, inspection is obviously required. However, many aspects of an inspector's assignment can be pursued much more effectively with improved scientific equipment. The science of ultrasonic testing, the science of X-ray testing and examination, and many other elements of science have made it possible to inspect systems that previously could not be inspected because the nature of the failure or the nature of the deficiency of the equipment was not visible to the human senses.

Accordingly, while increased inspection up to a point can make some contribution to improved safety, the support of a scientific base for improved inspection is essential. There is an old and important saying among those concerned with product quality as follows: "It is impossible to inspect quality into a product."

If a product is inherently deficient, a 100-percent inspection will not make the product better. Research can point the way toward improving the product, and research can also identify techniques for inspection that make it possible for an inspector to better perform the service intended.

The FRA can be of increasing importance in contributing forward an improved railroad transportation system. The railroad industry recognizes that potential for importance, and I support vigorously an appropriate level of research activity in the FRA at the level originally requested by the Administrator as being consistent with the capability of the industry to utilize those findings and the need of the industry to have information that the research can generate.

Thank you very much.

Senator BYRD. Thank you, Mr. Harris, for a very fine statement.

HIGHWAY USERS FEDERATION

STATEMENT OF PETER G. KOLTNOW, VICE PRESIDENT, HIGHWAY USERS FEDERATION

Senator BYRD. Peter Koltnow of the Highway Users Federation.

Mr. KOLTNOW. I am here on behalf of B. Grant Nichols, president of the association, to present our views on the fiscal year 1975 Department of Transportation budget bill, H.R. 15405.

The federation's membership comprises 600 companies and associations, including major passenger car, truck and bus organizations; motor vehicle manufacturers and dealers; petroleum, rubber and other industries directly related to highway use; shippers and other businesses, including agriculture, all of which has a clear stake in good road and street transportation.

We have affiliates in all the States and in 35 metropolitan areas, whose memberships total more than 4,000 civic, trade, agriculture and business organizations.

The federation's constituent organizations have been engaged in highway safety support activities for 40 years. Our most recent large scale effort was the National Highway Safety Conference, which was held May 6 through 8 here in Washington. This meeting, cosponsored by the federation and the National Safety Council, brought together over 600 representatives of diverse organizations, including labor

unions, the Chamber of Commerce, Girl and Boy Scouts, Jaycees and the National Urban League. The conference was aimed at regenerating a broad base of public support for highway safety; support that has been missing in recent years.

The genesis of the Conference was the recommendation of "Mobility Without Mayhem," the 1970 report of a Presidential task force, that highway safety be designated as a "major national goal."

We feel that this goal will be impossible to achieve unless there is an adequate Federal commitment—in spirit and dollars—to the cause of reducing traffic deaths, injuries and accidents.

The declines we have witnessed in the number and rate of highway deaths during the recent energy shortage have been heartening. But, we must not let these figures lull us into a complacent attitude about the continuing need for effective traffic accident countermeasures. Even if we realize a 20-percent reduction in traffic deaths for the year, the number of fatalities on our roads will still total about 45,000—an intolerable figure.

Our statement is addressed specifically to our belief that the proposed fiscal year 1975 Department of Transportation budget now before you must respond to the present need by giving safety a high priority in funding.

State and community grants: The federation feels that the House-passed version of the budget and the administration proposal for funding the section 402 State and community grant program represent an unacceptably low level of support for this basic element of the Federal-State-local partnership in highway safety.

Although the Federal contribution to State and community programs is only about 3 percent of the total national investment in these programs, it has a strong influence on the way States and communities use their own safety resources.

We are confident that the 402 program is worthwhile, and has produced many positive results since 1966. With 18 national standards as guidelines, State and local officials have shown that they can turn the seed money of Federal safety dollars into productive, accident-reducing programs.

In order to carry out 402 programs—and expand on successful pilot projects—States need the stimulus and commitment from the Federal Government that have been reflected by Congress in authorizing acts, but are not represented in the pending budget proposal.

The Highway Safety Act of 1973 authorized $203 million from the Highway Trust Fund for the grant program—$15 million for basic grants and $48 million for incentives—$32 million for enactment of mandatory seat belt use laws and $16 million for States which make significant progress in reducing their traffic fatality rates. The House appropriations measure sets a $100 million obligational ceiling on this program—including a specific exclusion of the funds requested for seat belt use law incentives—while the DOT has now proposed $121 million, including the full authorization for fatality rate reduction incentives and a restoration of $5 million for the seat belt use law grants.

We believe that the $121 million proposed by the administration is a bare bones figure and urge your committee not to go below it in your

appropriations bill. In particular, we feel that the funds for seat belt use law incentives should be provided, so that one or two States in addition to Puerto Rico can be stimulated to test the lifesaving effectiveness of these laws in this country.

In addition, we further urge you to include language in your report encouraging the administration to budget future 402 funding at the level of authorizations in the 1973 Highway Safety Act.

Roadway Safety: Lengthy oversight hearings by a House Public Works Subcommittee and an investigation by the General Accounting Office showed recently that States were not adequately providing for roadway safety activities in their regular highway work.

Congress responded in the 1973 Highway Safety Act by establishing six special emphasis roadway-related safety programs—railroad grade crossing protection, improvements at high hazard accident locations, removal of roadside obstacles, hazardous bridge replacement, the safer roads demostration program, and the pavement marking program.

Special authorizations from the Highway Trust Fund, over and above regular Federal-aid highway funds, were provided, including $475 million for fiscal 1975. The act presupposed that the administration would propose identifiable accounts in the budget for roadway safety, giving high visibility to these extremely cost effective methods of reducing traffic deaths.

In fact, however, the administration has failed to respond to the congressional mandate. None of these programs is specifically funded in the proposed budget.

DOT appears to have set aside $250 million for funding these programs in fiscal 1975, but this amount is actually included with the Federal-aid highway program under a total obligational ceiling of $4.6 billion. The $250 million is nothing more than an internal target to use in jawboning the States to perform some roadway safety projects at the expense of critically needed highway improvements.

This same procedure was followed by the administration in fiscal 1974 and, according to our studies, less than $20 million out of the $150 million authorized for four of the programs had been obligated by only 30 States through May.

There is ample evidence of the value of special roadway safety programs. I will share just two among many examples with you:

1. Between 1965 and 1971, 75 channelization projects including left turn bays, were constructed around the country at a cost of about $2.8 million, or $38,000 per project. In comparing the accident experience at these locations 1 year after the improvement with 1 year before, it was found that: fatal accidents were reduced 32 percent; deaths dropped 42 percent; injuries were down 52 percent; and total accidents were cut 42 percent.

2. In California, a State which is active in roadway safety work, improved skid resistance applied at 11 hazardous locations, at a total cost of $181,000, produced these results: injury accidents were reduced 59 percent; and property damage only accidents decreased 36 percent.

The roadway safety programs authorized in the 1973 act have proven lifesaving potential, and adequate money is available in the highway trust fund to pay for them.

We urge your committee to concur with the House action in establishing a separate appropriation for highway safety construction programs—without an obligational ceiling—thus eliminating the present competition between highway construction and safety funds that reduces the effectiveness of both efforts to the detriment of the highway user.

There is a vast reservoir of public support at the State and local level for the kind of tough jobs that need to be done to improve highway safety. This reservoir will never be tapped, however, unless there is a real responsiveness and commitment from the Federal Government.

Strong proof of continuing congressional leadership and support is sorely needed now. We hope this committee is ready to help in providing it by supporting the programs of the 1973 Hightway Safety Act

Thank you for your consideration.

Senator BYRD. Thank you, Mr. Koltnow.

UNITED TRANSPORTATION UNION

STATEMENT OF W. ROY WILSON, ALTERNATE NATIONAL LEGISLATIVE DIRECTOR, UNITED TRANSPORTATION UNION

ACCOMPANIED BY M. D. SAGE, LEGISLATIVE RESEARCH DIRECTOR, UNITED TRANSPORTATION UNION

Senator BYRD. Mr. Roy Wilson of United Transportation Union.

Mr. WILSON. First of all, Mr. Chairman, I am honored to be allowed to appear before this committee.

My name is W. Roy Wilson. I am the alternate national legislatvie director for the United Transportation Union, and appearing with me is Mr. M. D. Sage, legislative research director for the United Transportation Union.

We appear instead of Mr. J. R. Snyder, chairman of the Safety Committee of the Congress of Railway Unions and the national legislative director of the United Transportation Union.

With your permission, Mr. Chairman, I would like to submit Mr. Snyder's full statement and its attachments for the record and just read excerpts from the statement if I may.

Senator BYRD. The statement will be included in full.

Mr. WILSON. At the conclusion of my short statement, I think Mr. Sage has a few comments that he would like to make for the record.

The organizations which are affiliated with the Congress of Railway Unions are: Brotherhood of Maintenance of Way Employees; Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employees; Hotel and Restaurant Employees and Bartenders International Union; Seafarers' International Union of North America; Transport Workers' Union of America; and the United Transportation Union. These organizations represent approximately 75 percent of the railroad workers in this country.

I want to thank the members of this subcommittee for your interest in railroad safety and your action in appropriating earmarked funds for an additional 95 safety inspectors in fiscal 1974 and funds for matching grants for State participation in railroad safety inspections. CRU is most vitally interested in seeing that the Federal Railroad Ad-

ministration is given sufficient funds so badly needed to improve safety in the railroad industry.

Railroad safety performance is worsening rather than improving, in part because the FRA Administration chose not to add the 95 additional safety inspectors to his forces as soon as he received the authority and to date has certified only five States to aid in track inspection. Such actions do not lessen the need for appropriations to provide a sufficient force of inspectors with supporting clerical help. Neither does it lessen the urgent need for State help in enforcement. This foot dragging does emphasize that if FTA does not understand the railroad safety problem at the administrative level and is unwilling to use the laws and inspection personnel to inspect, enforce, and police this country's railroads in accordance with the law, then the safety enforcement must be moved elsewhere.

We seek two things from your subcommittee: (1) Earmarked appropriations for an immediate increase in the number of safety inspectors in FRA's Office of Safety to 350 persons with adequate clerical support for these inspectors of 80 persons; and (2) adequate Federal matching funds for States certified by the FRA to assist in enforcing the Railroad Safety Act of 1970 and regulations issued thereunder.

Realizing that safety inspectors require adequate travel funds to police their territory, we feel these funds should be earmarked to assure that inspections will not be curtailed because of lack of money. Safety inspectors should be allowed travel expenses for a minimum of 15 days per month. Based on a maximum per diem of $25 per day, the travel costs for 350 inspectors would total $1,575,000.

Administrator Ingram has testified before a House subcommittee on March 26 that the safety record on our railways is worse this year than last. The latest figures that have been made available to us show even though 3½ years have passed since the Railway Safety Act of 1970 was passed, that railroad safety is the worst it has been in years.

The number of train accidents in 1973 was 9,396, and when compared with 1972, accidents increased 24.7 percent.

We are advised that this is the largest increase in the history of reported accidents. The number of those accidents resulting in casualties increased 11.3 percent. The number of employees killed during 1973 was 20.5 percent greater than in 1972. The total number of all classes of persons killed in 1973 was 1,913. This, of course, does not include the millions of dollars in property damage loss.

From the viewpoint of the members of CRU who operate the trains, inspect and maintain the track, inspect and maintain the rolling stock, and handle the freight and passengers, the cause of the increase in accidents, injuries, and deaths is the lack of adequate enforcement of existing laws and regulations by the Federal Railroad Administration and its failure to comply with the 1970 act in promulgating regulations covering the entire field of railroad safety within 1 year after enactment.

The railroads know that FRA historically has not, and is not going to vigorously enforce the safety laws, and the result is tragic. In short, there is very little of a positive nature that can be said about FRA's handling of railroad safety in this country. Something must be done to stop the deaths, injuries, and needless property and energy waste caused by railroad accidents.

A count of field forces as of mid-April 1974 reveals that there were 162 supervisors and inspectors of all kinds, and this small force was effectively hamstrung by Administrator Ingram's reorganization plan which is now in effect. This plan removes the safety appliance inspectors from the field where they are expert and places their duties on the already overburdened locomotive inspectors. This reorganization plan has wreaked havoc with the morale of veteran career inspectors with its arbitrary and capricious reassignment of duties. Attached hereto is a letter from these employees' reepresentatives to Congressman Staggers, outlining this adventure in mismanagement.

An immediate increase in the number of safety inspectors to 350 with 80 supporting clerical help is necessary for any meaningful enforcement of railroad safety laws and regulations. The FRA is not seeking that number of new inspectors, and we fail to understand the reason why. However, I think this subcommittee well knows by now that its official position is dictated by higher authorities and the shadow government of the Office of Management of Budget. I can assure you that people in FRA Office of Safety would warmly welcome the needed enforcement personnel.

The increase over the number of safety inspectors currently employed by FRA compared with our request for 350 safety inspectors is approximately 185 persons, which would increase the proposed budget an additional $3,700,000, exclusively of traveling expenses for the inspectors.

With all the demands upon this subcommittee from every agency, we can understand initial reluctance to earmark funds to increase substantially the enforcement size of a bureau. However, the safety pulse of the entire FRA is centered in its enforcement personnel. Without adequate enforcement, all the legislation one can envision will not correct the railroad safety problem. Attached to my statement is our view of the enforcement role of FRA.

Another important and related aspect of the administration of the new railroad safety law is that under the statute, States may be certified by the FRA to assist in policing the railroad regulations The law authorizes 50-percent matching Federal funds for States which become certified.

CRU is firmly of the opinion based on our relationship with the appropriate State rail enforcement agencies that a large number of interested States can supply very effective assistance in improving rail safety. The State commissions and their inspectors know their territory and are anxious to see that the regulations are enforced and unsafe conditions and practices stopped. They do not want to see their cities evacuated by reason of derailments. The $3½ million we are asking for in matching funds for State participation will produce startling results in improved safety, we believe. FRA is requesting in fiscal 1975 only $500,000 for Federal training for State inspectors, and only $1 million for matching funds or grants-in-aid as they call it. The training funds are needed.

Concerning the matching funds for the States, CRU believes an appropriation of $3½ million should be authorized to assist the States which become certified. This is the same amount sought by the National Association of Regulatory Utility Commissioners, and we re-

gard it as essential that the States begin work quickly to aid in the reduction of rail accidents.

The first FRA Administrator testifying on the then-pending railroad safety bill stated that approximately 95 percent of the accidents that occur on the Nation's railroads are caused by factors not subject to any control by the Federal agency responsible for promoting railroad safety. The 1970 law gives FRA authority over all railroad safety. The new functions of the FRA encompass jurisdiction over all freight and passenger cars, yards, tracks, tunnels, bridges, trestles, grade crossings, communications, operating rules and practices, work environment, training, and State monitoring. Increased authority of such magnitude necessitates comparable financial means with which to exercise that authority. The FRA simply has not been given those means to carry out its job. Help is desperately needed to reduce the deaths and injuries on our Nation's railroads. We believe this can be achieved by providing for the requested additional safety inspectors and for matching funds for States that become certified.

I am sure you recognize that even with the above-sought increases in appropriations, the proposed budget of the FRA is still smaller than any of the other agencies of the Department of Transportation. If a cut in FRA appropriations must be made somewhere in its budget so that enforcement of the here-and-now problem of rail safety can be effected, then it must be made from the frill areas, such as advanced train systems.

I feel that I should comment that the testimony of FRA Administrator John Ingram before your subcommittee in regard to the FRA Office of Safety certainly did not leave experienced railroad men with the feeling that he considers safety requires the highest priority in the here-and-now state of railroading. He is asking this subcommittee to place the appropriations for safety in an activity called "General Railroad Research and Development," and as we understand this move, it will in no way lead to better safety on the railroads.

It will, it appears to us, enable the juggling of funds and personnel which should be devoted solely to enforcement purposes to other activities listed as parts of the same "activity."

You have been furnished words of alleged safety accomplishments, or what are purported to be such, but when the chairman of the House subcommittee asked Mr. Ingram in March if he could report that the railroad accident record was better, he replied, "No, worse."

It is time for issuance of practical regulations as required by the 1970 law; it is time to end the enormous waste of money for studies by contractors who hardly know what a railroad is; it is time for vigorous enforcement to eliminate the causes of accidents. We have gotten nowhere by telling violators to be good or they might be fined sometime. We cannot look only at some railroads with a "poor safety record." The record everywhere is poor, and the daily newspapers throughout the Nation carry the stories and picture of the results of the unsafe and illegal railroad operation.

Penalty defects on a railroad are more than violations of the law, they are defects which can and do lead to injury and death of employees and the public and destruction of property of shippers and adjacent neighbors along the right-of-way.

Railroad safety must be achieved, and your assistance in this matter is of great importance as a major and necessary step. I have attached a number of documents to my statement. One study I have not attached because of its great size was made by the Pennsylvania Public Utility Commission, March 27, 1974, showing in precise detail how completely unreliable the FRA study of "Rail Service in the Midwest and Northeast Region" is as it pretends to be a study of that State. I have no doubt that this study is equally valueless for the entire region. I am sure this subcommittee will not be mislead by FRA ballyhoo for studies and programs which do not relate to our present working railroads and the safety problem as it exists today.

I thank you for your kind attention.

Senator BYRD. Mr. Sage.

Mr. SAGE. I would like to add a few things for the record. I have a letter here from Mr. Snyder addressed to Bruce E. Hobbs, director of the West Virginia State Legislative Board, and I think it contains material which needs to be read into this record. I will furnish it to you for the record.

[The letter follows:]

DEAR BROTHER HOBBS: Thank you for your letter of July 18 and accompanying clipping concerning railroad wrecks in West Virginia and Amtrak comments, which appeared in the Huntington, West Virginia "Herald Advertiser" of July 6, 1974.

I am sending copies of the articles to Senators Warren G. Magnuson, Robert C. Byrd and Vance Hartke as they are now holding hearings on railroad safety, oversight and FRA appropriations.

Railroad Safety is at an all-time low point now, with little indication that it will improve. FRA Administrator Ingram does not believe in using the inspectors in the Office of Safety to make surprise inspections of railroad facilities and equipment as was formerly done to keep the railroads "honest."

We note that Mr. Ingram asks for $64,240,000 for research in his fiscal 1975 budget, and only $4,800,000 is for railroad safety. He can calmly ask for more than $15 million for what are termed "advanced systems" and their supporting technology, which are Buck Rogers projects having nothing to do with this country's railroads. He can ask for $14.6 million for what he terms "industry problems, freight car management and improved freight service." None of these will improve railroad safety nor will they do more than waste the taxpayers' money on worthless studies.

There must be a sincere effort to achieve railroad safety. It is time to scrap the frills and put our money into a safe, sound, speedy railroad system handling today's shippers and passengers.

Again, thank you for writing.

Kindest regards.

Fraternally yours,

J. R. SYNDER,
National Legislative Director.

I have another thing I would like to submit for the record. It is too large to reproduce. It was received in the mail from our representative in Decatur, Ill. It is pictures and stories on the catastrophe at Decatur which are very timely. We have had a lot of these in the past. These will help the committee, I think, to come to a conclusion that FRA needs to do a little something right now that follows up on the railroad accident report of the National Transportation Safety Board which was the investigation of a similar, in fact practically identical, accident which occurred in the alternate southern gateway yard, East St. Louis, Ill., on January 22, 1972.

One of the recommendations that the Board made as they concluded their study was this. The Federal Railroad Administration established a requirement that:

Railroad carriers hand'e switching operations of cars, tonnage, large shipments of hazardous material with danger range beyond railroad property bounds rise in the same manner as they handle switching operations of cars containing explosives.

I should complete this and say that is recommendation No. R-73-2. They are speaking there of class A explosives and the regulations require that these explosives not be detached from the engine which they are switching. They are to be shoved. This was not done in this particular accident in East St. Louis, and they had a terrible explosion, but no lives were lost. This was not done at Decatur, Ill., on the 19th of July and as a result we had over 140 injured. We have four persons dead and two more on the critical list and the resulting havoc is best determined by the committee by looking at the pictures and the accompanying articles which go with it.

I would like to also state that within the people who work in FRA—we cannot as a matter of confidence disclose the names, but we have occasions that some of the money which you are being asked to appropriate may be used to use FRA inspectors for jobs for which they are not trained and for which for no reason under any law that they be used. That would be in the area of cargo security which is, of course, police work for guarding shipments on route. This is not the job or is there any training or requirements that the present Federal Railroad Administration safety inspectors do this type of work.

I would like to suggest to this committee that some word of caution be included in the report that the money appropriated for Federal railroad safety inspectors not be used for cargo security purposes. We have followed NARUC with their presentation. We thoroughly agree with NARUC's comment on State participation and, of course, Mr. Wilson has mentioned that and read the particular reference in our testimony. We thoroughly agree with Dr. Harris' statement that the quality of the product cannot be determined except in the laboratory, the company making the product, but we would disagree that when the product is out on the road that it remains a quality product because we know that railroad freight cars—all of us know—have very severe usage and parts of them are bent and damaged and they do wear out and we have to have inspectors constantly looking at them to keep them safe.

We would also agree with Dr. Harris' statement that the Pueblo Test Center is needed. It certainly is. It is a worthwhile project.

But, much of the rest of the research program which is mentioned in Mr. Synder's letter to Mr. Hobbs is truly a boondoggle type of research and the studies pile up and we get no results.

That you very much.

Senator BYRD. Thank you very much.

PREPARED STATEMENT

Mr. WILSON. Mr. Chairman, may I say one other thing? Last year this committee appropriated funds and earmarked them for 95 FRA additional positions and to date we only have 66 of those.

Thank you.

[The statement and attachments follow:]

STATEMENT OF THE UNITED TRANSPORTATION UNION

Mr. Chairman and members of the House Appropriations Subcommittee on Transportation, my name is J. R. Snyder, I am national legislative director for the United Transportation Union. With me is M. D. Sage, legislative research director for the United Transportation Union. We are appearing here today on behalf of the Congress of Railway Unions and all its affiliated organizations seeking adequate appropriations for the budget of the Federal Railroad Administration's Office of Safety during the 1975 fiscal year. We sincerely appreciate this special privilege to testify before your subcommittee. The organizations which are affiliated with the Congress of Railway Unions are:

Brotherhood of Maintenance of Ways Employees,

Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employees Union,

Hotel and Restaurant Employees and Bartenders International Union,

Seafarers' International Union of North America,

Transport Workers' Union of America,

United Transportation Union.

These organizations represent approximately 75 percent of the railroad workers in this country.

I want to thank the members of the subcommittee for your interest in railroad safety and your action in appropriating earmarked funds for an additional 95 safety inspectors in fiscal 1974 and funds for matching grants for State participation in railroad safety inspections. CRU is most vitally interested in seeing that the Federal Railroad Administration be given sufficient funds so badly needed to improve safety in the railroad industry.

Railroad safety performance is worsening rather than improving, in part because the FRA Administrator chose not to add the 95 additional safety inspectors to his forces as soon as he received the authority and to date has certified not one State to aid in inspection. Such actions do not lessen the need for appropriations to provide a sufficient force of inspectors with supporting clerical help. Neither does it lessen the urgent need for State help in enforcement. This foot dragging does emphasize that if FRA does not understand the railroad safety problem at the administrative level and is unwilling to use the laws and inspection personnel to inspect, enforce, and police this country's railroads in accordance with the law, then the safety enforcement must be moved elsewhere.

We seek two things from your subcommittee: (1) earmarked appropriations for an immediate increase in the number of safety inspectors in FRA's Office of Safety to 350 persons with adequate clerical support of 80 persons; and (2) adequate Federal matching funds for States certified by the FRA to assist in enforcing the Railroad Safety Act of 1970 and regulations issued thereunder.

Realizing that safety inspectors require adequate travel funds to police their territory, we feel these funds should be earmarked to assure that inspections will not be curtailed because of lack of money. Safety inspectors should be allowed travel expenses for a minimum of 15 days per month. Based on a maximum per diem of $25 per day,

the travel costs for 350 inspectors would total $1,575,000.

Administrator Ingram has testified before this subcommittee on March 26 that the safety record on our railways is worse this year than last. The latest figures that have been made available to us show even though 3½ years have passed since the Railway Safety Act of 1970 was passed that railroad safety is the worst it has been in years.

The number of train accidents in 1973 was 9,396 and, when compared with 1972, accidents increased 24.7 percent. We are advised that this is the largest increase in the history of reported accidents. The number of those accidents resulting in casualties increased 11.3 percent. The number of employees killed during 1973 was 20.5 percent greater than in 1972. The total number of all classes of persons killed in 1973 was 1,913. The number of employees injured in 1973 was 12,671. This, of course, does not include the millions of dollars in property damage loss.

From the viewpoint of the members of CRU who operate the trains, inspect and maintain the track, inspect and maintain the rolling stock, and handle the freight and passengers, the cause of the increase in accidents, injuries, and deaths is the lack of adequate enforcement of existing laws and regulations by the Federal Railroad Administration and its failure to comply with the 1970 act in promulgating regulations covering the entire field of railroad safety within 1 year after enactment.

The railroads know that FRA historically has not, and is not going to vigorously enforce the safety laws, and the result is tragic. In short, there is very little of a positive nature that can be said about FRA's handling of railroad safety in this country. Something must be done to stop the deaths, injuries, and needless property and energy waste caused by railroad accidents.

A count of field forces as of mid-April 1974 reveals that there were 162 supervisors and inspectors of all kinds and this small force was effectively hamstrung by Administrator Ingrams reorganization plan which is now in effect. This plan removes the safety appliance inspectors from the field where they are expert and places their duties on the already overburdened locomotive inspectors. This reorganization plan has wreaked havoc with the morale of veteran career inspectors with its arbitrary and capricious reassignment of duties. Attached hereto is a letter from these employees' representatives to Congressman Staggers outlining this adventure in mismanagement.

An immediate increase in the number of safety inspectors to 350 with 80 supporting clerical help is necessary for any meaningful enforcement of railroad safety laws and regulations. The FRA is not seeking that number of new inspectors, and we fail to understand the reason why. However, I think this subcommittee well knows by now that its official position is dictated by higher authorities and the shadow government of the Office of Management and Budget. I can assure you that people in FRA Office of Safety would warmly welcome the needed enforcement personnel.

The increase over the number of safety inspectors currently employed by FRA compared with our request for 350 safety inspectors is approximately 185 persons, which would increase the proposed budget an additional $3,700,000, exclusive of traveling expenses for the inspectors.

With all the demands upon this subcommittee, from every agency, we can understand initial reluctance to earmark funds to increase substantially the enforcement size of a bureau. However, the safety pulse of the entire FRA is centered in its enforcement personnel. Without adequate enforcement, all the legislation one can envision will not correct the railroad safety problem. Attached to my statement is our view of the enforcement role of FRA.

Another important and related aspect of the administration of the new railroad safety law is that, under the statute, States may be certified by the FRA to assist in policing the railroad regulations. The law authorizes 50 percent matching Federal funds for States which become certified.

CRU is firmly of the opinion, based on our relationship with the appropriate State rail enforcement agencies, that a large number of interested States can supply very effective assistance in improving rail safety. The State commissions and their inspectors know their territory and are anxious to see that the regulations are enforced and unsafe conditions and practices stopped. They do not want to see their cities evacuated by reason of derailments. The $3½ million we are asking for in matching funds for State participation will produce startling results in improved safety, we believe. FRA is requesting in fiscal 1975 only $500,000 for Federal training for State inspectors and only $1 million for matching funds or grants-in aid as they call it. The training funds are needed.

Concerning the matching funds for the States, CRU believes an appropriation of $3½ million should be authorized to assist the States which become certified. This is the same amount sought by the National Association of Regulatory Utility Commissioners, and we regard it as essential that the States begin work quickly to aid in the reduction of rail accidents.

The first FRA Administrator testifying on the then-pending railroad safety bill stated that approximately 95 percent of the accidents that occur on the Nation's railroads are caused by factors not subject to any control by the Federal agency responsible for promoting railroad safety. The 1970 law gives FRA authority over all railroad safety. The new functions of the FRA encompass jurisdiction over all freight and passenger cars, yards, tracks, tunnels, bridges, trestles, grade crossings, communications, operating rules and practices, work environment, training, and State monitoring. Increased authority of such magnitude necessitates comparable financial means with which to exercise that authority. The FRA simply has not been given those means to carry out its job. Help is desperately needed to reduce the deaths and injuries on our Nation's railroads. We believe this can be achieved by providing for the requested additional safety inspectors and for matching funds for States that become certified.

I am sure you recognize that, even with the above-sought increases in appropriations, the proposed budget of the FRA is still smaller than any of the other agencies of the Department of Transportation. If a cut in FRA appropriations must be made somewhere in its budget so that enforcement of the here-and-now problem of rail safety can be effected, then it must be made from the frill areas, such as advanced train systems.

I feel that I should comment on the testimony of FRA Administrator John Ingram before your subcommittee. Mr. Ingram's remarks and answers to the subcommittee's questions in regard to the FRA Office of Safety certainly did not leave experienced railroad men with the feeling that he considers safety requires the highest priority in the here-and-now state of railroading.

He is asking this subcommittee to place the appropriations for safety in an activity called "general railroad research and development," and, as we understand this move, it will in no way lead to better safety on the railroads.

It will, it appears to us, enable the juggling of funds and personnel which should be devoted solely to enforcement purposes to other activities listed as parts of the same "activity."

You have been furnished words of alleged safety accomplishments, or what are purported to be such, but, when the chairman of the subcommittee asked Mr. Ingram in March if he could report that the railroad accident record was better, he replied, "No, worse."

It is time for issuance of practical regulations as required by the 1970 law; it is time to end the enormous waste of money for studies by contractors who hardly know what a railroad is; it is time for vigorous enforcement to eliminate the causes of accidents. We have gotten nowhere by telling violators to be good or they might be fined sometime. We cannot look only at some railroads with a "poor safety record." The record everywhere is poor and the daily newspapers throughout the Nation carry the stories and pictures of the results of unsafe and illegal railroad operation.

Penalty defects on a railroad are more than violations of the law, they are defects which can and do lead to injury and death of employees and the public and destruction of property of shippers and adjacent neighbors along the right-of-way.

Railroad safety must be achieved, and your assistance in this matter is of great importance as a major and necessary step. I have attached a number of documents to my statement. One study I have not attached because of its great size was made by the Pennsylvania Public Utility Commission, March 27, 1974, showing in precise detail how completely unreliable the FRA study of "Rail Service in the Midwest and Northeast Region" is as it pretends to be a study of that State. I have no doubt that this study is equally valueless for the entire region. I am sure this subcommittee will not be misled by FRA ballyhoo for studies and programs which do not relate to our present working railroads and the safety problem as it exists today.

I thank you for your kind attention.

Mr. Chairman, I would like to have the balance of the attachments to my statement inserted at this point in the record.

[The information follows:]

ATTACHMENT A

CONGRESS OF RAILWAY UNIONS RECOMMENDATIONS FOR THE FRA OFFICE OF SAFETY

The Office of Safety is the only agency which enforces Federal railroad safety laws, and the only agency which has the responsibility of seeing that these laws are complied with. Thus, since the Office of Safety is a part of the Federal Railroad Administration, it is the policeman of the FRA.

The Office of Safety (formerly the Bureau of Railroad Safety) was originally the enforcement/surveillance agency for Federal railroad safety statutes administered by the Interstate Commerce Commission. It was transferred bodily from the ICC to the newly created Department of Transportation in 1966 with no change in function or personnel. It now must police all regulations and standards prescribed under the Railroad Safety Act of 1970 as well as previously enacted laws covering:

1. Rail transport of hazardous materials.
2. Safety appliances.
3. Locomotive inspection.
4. Carriers' reporting of accidents.
5. Hours of service of employees.
6. Railroad signal and train control.

Regrettably the FRA has not seen fit to comply with Congress directive in the Railroad Safety Act to issue railroad safety rules for the entire previously uncovered areas of railroad safety by October 16, 1971. Only track safety standards and freight car safety standards have been issued to date, although it is now 3½ years since all initial standards were to have been issued. Such delay and noncompliance with the law cannot be excused by saying they were contracted out for study and recommendations to private firms and have not been completed. Sufficient guidelines exist in the safety programs and rules of the industry, and recommendations of shippers and labor could easily have been obtained to meet the deadline for publishing initial standards. OSHA issued its standards on these guidelines and complied with the air—FRA has not! (On the basis of experience, and perhaps studies in the various standards, they are always subject to change by notice of rulemaking under the Administrative Procedures Act.

Fortunately Congress showed great wisdom in retaining all the previous railroad safety legislation, otherwise we would have no effective safety enforcement at all. Experience has taught us that no law can be made effective or will be observed unless it is well enforced. A poorly enforced law encourages violations when there is a good prospect that they will go undetected with no penalty.

The Office of Safety, the only safety policeman, cannot do an effective and proper job if it is hampered with:

1. Insufficient inspectors.
2. Unnecessary personnel performing functions not related to enforcement and which they are not capable of achieving.
3. Restraint imposed from above coming from industry influence.
4. Lack of clear-cut directive from the Administrator to make unannounced inspections and enforce the law.
5. Failure to use the experience and ability of the veteran transportation experts in all fields of safety now located in Washington and no promotion of these highly qualified people.
6. Appointment of unqualified inspectors with insufficient railroad experience and knowledge.

An immediate expansion of FRA inspectors to approximately 350 is required to properly police the entire field of railroad safety under the existing statutes. This takes into account the need to apply to the railroad industry regulations, where applicable, equivalent to those in effect under the Occupational Safety and Health Act. In the railroad industry, the field is pre-empted by the Safety Act of 1970. Until enactment of the 1970 Safety Act, the present force of some 165 (April 1974 figure) field inspectors and supervisors was having difficulty keeping up with the workload under the existing safety statutes covering only a little more than 5 percent of the total railroad field. Allowance should be made for certification of qualifying State inspectors performing enforcement in their States and being counted among the field forces. This cannot take place without Federal appropriations. The current request of FRA for $500,000 to train State inspectors is worthless if at least $3½ million is not appropriated for matching funds of certificated States.

As we see it, the authority of the Washington headquarters of the Office of Safety has been greatly weakened and the effectiveness of the Associate Administrator and the skilled and experienced chiefs and transportation specialists in Washington has been crippled by a recent reorganization. In appears that as a practical matter the reorganization was conceived to emasculate enforcement of safety laws and regulations rather than to pursue a vigorous policy of enforcement to insure safe track, equipment, signals and all phases of operation.

Railroad safety is no place for "Alice in Wonderland"; it is a place for experienced, test-qualified practical inspectors. Inspectors do not need degrees in engineering; they do need practical knowledge and experience. The money required to engage even a poor engineer will roughly pay for about one and one-half experienced inspectors with a railroad background.

The probability exists that any enforcement and surveillance agency such as the FRA Office of Safety should be a separate entity or at least on an independent basis such as the National Transportation Safety Board. There is some thinking that indeed the Office of Safety should be made a part of OSHA under the Department of Labor. This would remove the pressures which are often brought to bear on an enforcement agency by those parties inconvenienced by its enforcement activities.

At the present time, the Office of Safety is in a floating condition due to the demoralizing effects of a reorganization plan instituted by the Administrator. The emphasis has been removed from enforcement and placed on public relations and catering to the requests of the carriers for relaxed or no regulations for safety. The Associate Administrator has little real authority to run his office. The branch chiefs and their experts in Washington are the most knowledgeable people in their field and should receive the complaints of law violation for handling, but do not. It is vital that these branches should be placed back on the direct line to the field and be more fully informed of all developments. Floating must be stopped and a firm line established so that the Office of Safety can perform its function in the field of safety.

Since the Office of Safety became a part of the DOT–FRA in 1966, the quality of its personnel and very importantly of its field inspectors has been steadily deteriorating. The reason is clear and simple. Prior to 1966, each branch compiled the examination to be given to applicants for a field inspector's position. This was given over the entire United States on an announced date and successful applicants were placed on an appointment roster according to grade rating. It was not an easy test, and only 2 to 4 percent passed it. Thus, only knowledgeable people were qualified to be appointed. Today, only a midlevel civil service test is given which requires no practical railroad knowledge or experience. The odds are against obtaining qualified inspectors using the midlevel test. Therefore, today, appointments are being made to the position of inspector of persons who are not qualified to perform the duties.

The Office of Safety is the biggest organizational element in the FRA, with the exception of the Government-owned and operated Alaska Railroad. Yet, the FRA seems to be overwhelmingly wrapped up in research and little interested in enforcement of existing safety laws or of issuing safety regulations under the 1970 act. There is no quarrel with proper research for railroads, but we are properly repeating for emphasis the FRA must and has the legal obligation to enforce present and issue required new safety regulations. If there is a question of available funds, safety requirements demand that enforcement must be given priority over research projects, many of which normally would be financed by the industry and its suppliers, and properly so. It is not good business for the Federal Government to pay for projects from which only the interested parties can profit. Many of the reasons given for Federal interest in couplers, wheels, boxcars, and similar projects appear specious. True safety projects such as grade crossing accident prevention, fail-safe automatic train stop and improved train brakes and track and roadbed do not fall into the same category.

Faced with a railroad safety problem of today's magnitude, we cannot and must not squander sums such as the FRA requested, $11.7 million, for projects which have no relationship to today's railroads and their problems. I refer to the track levitated vehicle (formerly called TACV) and tracked magnetically levitated vehicle with a supporting technology request, $3.65 million. Compare just these two spendthrift requests which total $15,350,000, with the request for only $4.8 million for safety, and bear in mind that the Administrator has said that much of that will go for rental of office space formerly paid for by GSA. There are millions of dollars of other questionable projects, but the two cited show how little attention FRA really pays to safety.

Railroad safety is concerned with the here and now. We have at this moment a railroad system of some 330,000 miles in the United States. It has safety problems, many of which come from lack of proper safety practices in maintenance and operation. An Office of Safety field force of 350 men chosen by a thorough test requiring ability and experience in the railroad field will be one of the biggest forces in achieving railroad safety through its function of enforcement and surveillance.

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ATTACHMENT B

SHREVEPORT, LA., *March 8, 1974.*

Hon. HARLEY O. STAGGERS,
Chairman, Interstate and Foreign Commerce Committee,
Rayburn House Office Building,
Washington, D.C.

DEAR CHAIRMAN STAGGERS: As President of Local 2814, American Federation of Government Employees, under the provisions of article II, section C, subsection 1 of our agreement with the Federal Railroad Administration, I would like to present Local 2814's views on the reorganization of the Office of Safety to the Congress.

This reorganization will seriously restrict the enforcement of safety laws on the railroads and result in increased accidental injury and death to railroad employees. The basis of this conclusion is the fact that in November 1966 while we were in the Interstate Commerce Commission there were 69 safety appliance inspectors, including supervisors, who enforced the Safety Appliance Acts. There were 57 locomotive inspectors and supervisors who enforced the Locomotive inspection Act. Under the reorganization at the present time there are 55 motive power and equipment inspectors and supervisors who have been assigned to enforce the Safety Appliance Acts, the Locomotive Inspection Act, and the Railroad Freight Car Safety Standards resulting from the Railroad Safety Act of 1970. The Federal Railroad Administration expects to hire 30 additional motive power and equipment inspectors before July 1, 1974. This will bring the inspection force to a total of 85 inspectors and supervisors, 41 less than were employed on November 1, 1966, with the additional duties of enforcing the Railroad Freight Car Safety Standards.

Every motive power and equipment inspector will be involved in a new field and equipped with questionable expertise. The Federal Railroad Administration has seen fit to waste 549 man-years' experience in enforcement of the Safety Appliance Acts by assigning the former safety appliance inspectors to a field new to them, operating practices. It is surprising to me that the Civil Service Commission would tolerate such a waste.

Local 2814 has opposed this part of the reorganization by every legal means, and the Federal Railroad Administration is aware of our position. I regret that it has been necessary for me to bring the facts to your attention.

Sincerely,

WILLIAM E. GORDON,
President, AFGE Local 2814.

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS,
Washington, D.C., March 29, 1974.

Re oversight hearings on inadequacy of FRA Administration of Federal Railroad Safety Act.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

DEAR CHAIRMAN STAGGERS: In 1970 the Congress gave the American people their first ever legislative undertaking that national safety standards would apply to all railroads as part of a major campaign to reduce the appalling loss of life, serious personal injuries and property damage that has been the painful legacy of railroading in this country for over 100 years.

This undertaking took the form of the Federal Railroad Safety Act of 1970. (Public Law 91–458; 45 U.S.C., sec. 421, et seq.)

The act provided that the Federal Gvoernment would promulgate safety standards that would apply universally throughout the Nation. It further created a role for the States to play in partnership with the Federal Government whereby the States would develop rail safety inspection programs to be pursued within their own boundaries and staffed by State personnel. States wishing to participate, could develop their respetcive inspection programs and submit them to the Federal Government which could then reject those submissions they found unsatisfactory.

Moreover, the use of State inspectors would permit the Congress to carry out its ntaional safety program for far less money than it would otherwise cost if the Federal Government assumed the entire financial burden.

In this fashion the Congress intended for the States and the Federal Government to work hand-in-hand so that the American people could have confidence that everything possible was being done to insure that rail safety might become a reality and not an empty slogan.

It is my sad duty to report to you that the laudable intentions of Congress embodied in the act, have—to a distressingly large degree—not come to pass.

To the contrary I must tell you that the instrument chosen by the Secretary of Transportation to work the will of Congress—the Federal Railroad Administration (FRA)—has, by its actions, frustrated the hoped-for program of Federal-State cooperation to the point where it will die unless the committee intervenes.

The State agencies involved in railroad safety and the National Association of Regulatory Utility Commissioners (NARUC) have done everything in their power over the past 3 years to cooperate with the FRA to try and make the promise of the Federal Railroad Safety Act a reality.

Our efforts have been rebuffed and frustrated to such a degree that we feel there is only one recourse left to us.

We must appeal to the Congress and in particular to the Committee on Interstate and Foreign Commerce to hold public oversight hearings for the purpose of determining what can be done to require the FRA to carry out the will of Congress to implement a meaningful program of rail safety so that the American public may receive the protection it deserves and that Congress intended.

We realize that congressional oversight hearings are important undertakings and should only be held for good and serious reasons.

The motives behind the FRA's actions can only be guessed at, that an examination of the record would certainly prompt one to wonder whether that agency has not been endeavoring to thwart the intent of Congress and implement some other policy decision of its own.

The issue here is not whether some bureaucratic agency can enhance its own prestige or construct its own empire.

The issue here is whether people live or die, endlessly perhaps; whether people ride upon trains in safety or whether they are seriously injured, some with aftereffects that plague them for the remainder of their lives; and whether millions upon millions of dollars worth of property are destroyed each year in an increasing number of serious railroad accidents.

We believe that when you examine the facts listed below you will agree with us that the present situation is of more than sufficient gravity to require a comprehensive public review of this program by your committee.

The statute enacted by Congress in 1970 called for the FRA to issue railroad safety standards within 1 year.

The FRA ostensibly did this by issuing standards that applied only to track safety. However, it waited more than 3 years before complying with a key provision of the statutory mandate—the development of a program for State certifications and agreements by prescribing rules and regulations to accomplish State participation.

We know of no explanation for this extraordinary delay in complying with the law. During this extended period the FRA found time to issue various notices of proposed rulemaking and held public hearings on topics such as "passenger train visibility," "railroad operating rules" and in November 1973, prescribed railroad freight car safety standards.

When the FRA did finally get around to promulgating the State certifications that are at an unreasonable, almost unattainable level (see 49 C.F.R., sec. 212.55).

These unreasonably high standards seemed designed to prevent State personnel from qualifying and thus jeopardizing the future of State participation.

For instance, one of the requirements calls for 6 years of recent experience covering progressively responsible work in track construction and maintenance. It now appears that almost none of the States have personnel on hand that can meet this standard.

The FRA knows this well since it was brought to its attention by the NARUC almost a year ago.

There is a serious question as to whether there are adequate qualified inspectors, under these requirements, to serve existing needs throughout the country. Would it not be better to use less qualified inspectors and seek to upgrade them through training, rather than have no inspectors at all?

The FRA has been arbitrary and capricious in setting procedural requirements.

I refer specifically to the requirement that any State seeking FRA certification must employ its inspectors prior to, or within 30 days after, the State has submitted its certification request to the FRA.

It took the FRA more than 3 years to promulgate this regular which requires a State to budget, appropriate funds, and hire on personnel almost immediately after it submits a certification.

This requirement simply does not make sense. Some States have existing personnel who could be assigned to the program. However, other interested States would need additional time—within the framework of State budgetary, appropriations, and personnel recruitment procedures—before they could employ the needed personnel.

In addition the States have been told by the FRA that railroad track inspectors employed and paid by State agencies will be under the exclusive supervisory control of the FRA. In other words the States will pay a major portion of the man's salary but he will work for the FRA.

This unusual, and, if I may say so, highly irregular procedure was neither contemplated in the act nor spelled out in the FRA regulations.

It is, quite frankly, unacceptable to the States, many of whom regard it as an insult and violative of the mandate of Congress under the act.

On March 11 of this year, Chairman John E. Carrigan of the West Virginia Public Service Commission wrote to the Administrator of the FRA officially withdrawing West Virginia's application to participate in the program.

In his letter of withdrawal Chairman Carrigan said "Rather than having the States participate by enforcing the Federal safety standards and the FRA contributing a certain amount of the cost of such enforcement, the FRA has distorted the intent of the Federal Railroad Safety Act of 1970 by establishing a policy requiring the States to employ inspectors who will be under the direct supervision of the FRA and cannot be used for any other purpose.

"Also, the FRA has set the qualifications for such inspectors unreasonably high and given no consideration to on-the-job experience of present State inspectors. It is apparent from this procedure that the FRA has chosen to discourage any State participation, hoping instead to increase the FRA responsibility and staff at the expense of the State."

In 1968, Congress passed the Natural Gas Pipeline Safety Act (49 U.S.C., Sec. 1671, et seq.) which charted a program of Federal-State partnership quite similar to that in the Federal Railroad Safety Act of 1970.

That program has been administered by the Office of Pipeline Safety within the DOT and has been highly successful. Indeed one could cite it as a model for Federal-State cooperation in an endeavor designed to promote safety and protect the public interest.

The depressing record of railroad accidents in this country with the attendant loss of life, injuries and property damage is fast becoming a national scandal.

In the 3 months of 1973 between May 1 and July 31, 488 people lost their lives in railroad accidents and 4,408 were injured. For the same period of time in 1972 the totals were 479 persons killed and 4,424 injured.[1] For the calendar year 1973 the statistics are grim indeed: 1,913 dead and 17,718 injured.[2]

In addition to these sad statistics we have those relating to highway grade-crossing casualties. For the 3 month period May 1, 1973–July 31, 1973, they show that 269 people were killed and 683 injured while for the 12 months ended December 31, 1973, we see that such accidents claimed no less than 1,213 lives and resulted in injuries to 3,267 people.

The National Transportation Safety Board (NTSB) recently distributed a publication entitled "Broken rails: A major cause of train accidents" which shows in a graphic manner the need for a vigorous nationwide program of track inspection.

The NTSB report states "The rate of rail failures is almost double the rate of increase in average car weights. The frequency of reportable train accidents increased at a rate approximately four times the rate of increase of rail failures per track-mile. From 1962 to 1970, the rail failure rate increased 44 percent while train accidents increased 177 percent and reported property damage increased

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[1] Department of Transportation, Federal Railroad Administration, preliminary report of railroad accidents and resulting casualties, May, June, and July 1973.

[2] Department of Transportation, Federal Railroad Administration, preliminary report of railroad accidents and resulting casualties, December 1973.

278 percent. Therefore, the probability of an accident occurring because of rail failure has increased drastically."

Last fall the Washington Star-News carried a story headlined "B. & O. Accidents are Increasing on District of Columbia-Baltimore Lines." [3]

The story noted that in the first 6 months of last year there were six accidents on the same stretch of track, all derailments, all involving freight trains and three attributed directly to track conditions.

The story quoted Mac E. Rogers, FRA Associate Administrator for Safety, as saying that "he had 'been aware that things weren't peachy rosy' on B. & O.'s Baltimore-Washington line, but that his agency has 6 engineers and 12 track inspectors to examine the Nation's 333,000 miles of track." [4]

No loss of life occurred in those particular accidents but such is not always the case. Consider the following headlines taken from The Washington Post which represent a mere sampling of others too numerous to list here:

"Train Crash Kills Two"—Codben, Ill., December 3, 1973; "Two Killed in Three Train Collision"—Bartlett, Ill., November 24, 1973; "Twins, 11 Killed by Train"—Montgomery County, Md., October 28, 1973; "Two Railroad Crewmen Killed in Fire as Truck, Train Collide"—Martin City, Mo., September 16, 1973; "Six Killed in Explosion of Tank Car"—Kingman, Ariz., July 6, 1973; "Five Crewmen of Birmingham Southern R.R. Killed as Train Derails"—Birmingham, Ala., July-15, 1973; "40 Hurt, Two Killed in New York Train Crash"—Mount Vernon, N.Y., June 9, 1973; "District of Columbia Woman Dies of Injuries in North Carolina Train Crash," March 15, 1973; "Auto-Train Crash Kills a Trucker," March 14, 1973; "Three Crewmen Die in Tucson Wrecks"—Tucson, Ariz., January 7, 1973; and "Three Die as Trains Sideswipe in Louisiana"—Killona, La., February 22, 1973.

These are just the tip of the iceberg. There are many other incidents. For instance, on January 15 of this year the paper reported three derailments. One in Ardmore, Okla., resulted in 30 passengers being injured. In McGregor, Tex., a freight car loaded with volatile petrochemicals derailed and exploded, and in White Haven, Pa., two tank cars filled with deadly chlorine gas overturned and ruptured. Families within a radius of one-half mile had to be evacuated.

Derailments of tank cars carrying chlorine gas and other poisonous chemicals have become almost commonplace. For instance, on February 6, 1973, a freight train derailment resulted in the spilling of 20,000 gallons of sulfuric acid in Downingtown, Pa. As a result 1,500 people had to flee their homes.[5]

Other news stories carry details of derailments involving up to 50 freight cars with property damage reaching half a million dollars. Last year two trains carrying munitions blew up, one in California and another in Arizona.

Perhaps the most telling headline of them all was the one carried in the April 27, 1973, editions of the Washington Post which heralded a story about a report made by the National Transportation Safety Board following an investigation into a railroad collision that derailed 18 cars and locomotives in Arlington County, Va. It said "Inattention, Defective Rail Blamed in Arlington Wreck".

It appears, however, that it will take more than headlines to persuade the FRA to mount a meaningful and energetic program of railroad safety in cooperation with the States under the terms of the 1970 act.

For that reason we respectfully urge you and your colleagues on the Committee on Interstate and Foreign Commerce to hold oversight hearings on this issue.

Sincerely,

GEORGE I. BLOOM,
Chairman,
Ad Hoc Committee on Congressional Legislation.

ATTACHMENT D

[From the Washington Post, Apr. 3, 1974]

TRAIN ACCIDENTS INCREASING; STATE REGULATORS BLAME DOT

(By William H. Jones)

Despite enactment in 1970 of the first federal railroad safety standards, train accidents have continued to increase—a development which the Nation's State

[3] Washington Star-News, Sept. 6, 1973, by Steven M. Aug.
[4] Ibid.
[5] The Washington Post, Feb. 6, 1973.

regulatory agencies are blaming on the U. S. Department of Transportation.

Following a breakdown of negotiations with the Federal Railroad Administration, which to date has not developed an inspection staff large enough to survey more than 300,000 miles of track, State regulators this week dispatched an angry letter to chairmen of the House and Senate Commerce Committees asking fresh hearings on rail accidents.

Pennsylvania regulator George I. Bloom, head of an ad hoc committee for the National Association of Regulatory Utility Commissioners, claimed that the DOT agency is thwarting efforts to create a meaningful rail-safety program. All the while, he said, deaths, injuries and property damage are mounting.

In 1973, according to a preliminary DOT report, 6,913 persons lost their lives in train accidents and 17,713 persons were injured—not counting grade-crossing casualties of 1,213 dead and 3,267 injured.

The total of personal injuries was down slightly from 1972 but the number of train accidents was up—to 9,396 from 7,532 in 1972.

"The issue here," said Bloom in letters to Representative Harley O. Staggers (D.-W.Va.) and Senator Warren G. Magnuson (D-Wash.), "is whether people live or die, needlessly perhaps; whether people ride upon trains in safety or whether they are seriously injured . . . and whether millions upon millions of dollars worth of property are destroyed each year."

Bloom and his colleagues complained that the Federal Railroad Administration is contributing to these deaths and damages by setting standards for rail inspectors so high that few persons can qualify. One requirement, for example, is that inspectors have 6 years of detailed track-maintenance experience. Almost none of the States employ personnel with this background, Bloom said.

In addition, the DOT agency wants supervisory control over any State-employed track inspectors—a development which Bloom said jettisons a major goal of the 1970 legislation, to create a joint Federal-State safety program similar to natural gas pipeline safety inspections which have been "highly successful."

Bloom also noted that the rail administration took nearly 3 years after enactment before publishing State certification standards. Since the Federal Government has not employed a significant rail-inspection team, authors of the 1970 bill expected that the States would hire and employ nearly all the inspectors, with Federal certification of standards to be followed.

The National Transportation Safety Board recently published a study which blamed broken rails as the single major cause of train accidents. Between 1962 and 1970, the study reported, train accidents increased 177 percent.

A total of 5,756 accidents from 1968 through 1972 were caused by broken rails alone—a fact caused by increasing weight of freight movements and reduced maintenance by many railroads. The board asked for immediate action by the rail industry to improve both maintenance and inspection.

On Capitol Hill, a staff member of the House Commerce Committee said rail-safety hearings would be scheduled during May. Mac E. Rogers, the railroad administration's safety chief, was out of town and not available to comment on Bloom's letters.

ATTACHMENT E

STATEMENT OF ROBERT BLOOM, COMMISSIONER, PENNSYLANIA PUBLIC UTILITY COMMISSION, EX PARTE NO. 293 (SUB. NO. 1)

My name is Robert Bloom, I am a member of the Pennsylvania Public Utility Commission which is charged with the responsibility of insuring that every public utility in the Commonwealth of Pennsylvania shall furnish and maintain safe, adequate and efficient service and facilities for the accommodation of the public.

The comprehensive report prepared by the United States Department of Transportation (DOT) showing geographic regions within the Northeast with the DOT's recommendations concerning locations where rail service should be continued, has been reviewed by the Pennsylvania Public Utility Commission in the short period of time allowed by the Rail Reorganization Act of 1974. A detailed analysis of the DOT report covering each zone within the Commonwealth is now being completed and it, together with our conclusions and recommendations, will be submitted subsequent to today's hearing within the allowable time period provided by the ICC Rail Service Planning Office.

The Pennsylvania Public Utility Commission is vitally interested in preserving adequate and efficient rail freight and passenger transportation within the

Commonwealth of Pennsylvania and in this connection has been the focus of calls from industries, businesses, municipal officials and the general public which are alarmed and greatly distressed by the obvious disregard of the public interest evident in the DOT's preliminary rail core system.

Although the DOT report asserts that 96 percent of the rail traffic in Pennsylvania will still be served notwithstanding DOT's proposed elimination of the 1,450 route miles of track which comprises 18 percent of the total rail route miles located within the Commonwealth, even the most cursory review of this proposal reveals devastating effects to the economy and welfare of the Commonwealth, its 12 million residents, and its industries and businesses that are so vitally dependent on rail transportation. In numerous instances, entire communities and industries are left without any rail service by the DOT proposal and if the DOT proposal is implemented, entire rail systems such as the Delaware & Hudson, Erie Lackawanna, Lehigh Valley and Reading Co. will be emasculated by the removal of direct, efficient connections and interconnections within and between their respective systems. Ironically, substantial segments of trackage, including portions of Erie Lackawanna, Penn Central, Lehigh Valley and Reading Co. destined for oblivion in the DOT proposal have been recently restored to service following the devastation wrought by Hurricane Agnes, some even specifically designated by act of Congress, by the use of millions of tax dollars to guarantee railroad loans previously approved by DOT—the same agency that now declares such lines to be potentially excess.

The Rail Reorganization Act of 1973 mandates that preservation of trackage in areas in which fossil fuel natural resources are located be a prime factor in the restructuring of the future rail system. Our preliminary review of the DOT proposal indicates that hundreds of miles of tracks designated by the DOT proposal as potentially excess trackage in the Commonwealth are in fact located in geographic areas containing billions of tons of anthracite and bituminous coal which is necessary to alleviate the continuing energy crisis. Obviously, injudicious past abandonment procedures which have resulted in severing connections to vast coal reserves must neither serve as the basis of or in fact be tolerated in the foundation of a future rail corridor system. Consistent with the basic premises of the Rail Reorganization Act of 1973 which requires that a positive rather than negative approach be utilized in evaluating rail transportation facilities located in coal reserve areas, all usable trackage located in coal reserve areas must be retained, and such trackage and interconnections must be promptly upgraded so that efficient rail transportation to our vital coal reserve areas may play its essential role in solving the energy crisis.

The DOT proposal for primary rail interstate routes in the Northeast region again takes the negative abandonment and under-utilization approach. It is this Commission's belief that all interstate rail routes now serving the Commonwealth are essential to its economy and industrial growth. In this position, we refer to the route itself rather than the ownership thereof, although we caution that change in ownership may create changes in gateways with serious economic effect upon the State. Abandonment or downgrading of any interstate rail routes across Pennsylvania will tend only to place heavier tonnage and more trains on existing routes that are already being operated inefficiently due to excessive volumes of traffic. Proper maintenance of roadbed and track structure on many primary routes has been and is being deferred due to the fact that existing heavy train traffic precludes availability of the track for maintenance purposes. Furthermore, in the case of a major derailment on any primary routes without a detour capability, congestion and delay would result in disruption of the vital streams of commerce flowing over such lines and massive industrial shutdowns.

The DOT report, volume 1, page 10, notes that estimated typical track from the eastern seaboard to the Alleghenies is only 25 percent utilized based on traffic flows on major segments, as indicated on table 13, page 28, with the source being railroad company traffic data 1972. From June in 1972 to August 1973, Penn Central's main freight route, the Atglen and Susquehanna branch, from Enola, Pa. to Philadelphia, Pa., was out of service to Parkesburg, Pa., since the Shocks Bridge was washed out by Hurricane Agnes. Accordingly, the use of 1972 traffic data in the DOT study cannot possibly reflect a true picture of traffic flow or tonnage on any of the primary routes in Pennsylvania due to rerouting of traffic as well as failure to restore certain flood damaged lines. Zone Map 81 traffic in 1972 shows less than 10 million gross tons per mile on the Atglen and Susquehanna branch. In the previous year 1971, the Atglen and Susquehanna branch from Enola to Cly carried in excess of 90 million gross tons per mile.

Zone Map 81 traffic in 1972 shows less than 20 million gross tons per mile on Penn Central's main line between Harrisburg and Philadelphia, which carried nearly 40 million gross tons per mile in 1971. All current data indicates an increase on both lines in 1974. Moreover, the DOT's use of a base of 93 million gross tons per route mile annually and 60 trains per day (vol. 1, table 7, page 5) as the capacity for a single track and 160 trains and 250 million gross tons per route mile annually for double track having centralized traffic control is feasible and realistic only under controlled laboratory conditions. Past experience in the Commonwealth indicates that when additional traffic normally using Penn Central's Atglen and Susquehanna branch was rerouted to the Penn Central main line following Hurricane Agnes, although the total traffic did not reach the foregoing base criteria, delays and rail congestion, outlawed crews and considerable additional expense resulted. Another specific example of the actual utilization of Penn Central's Atglen and Susquehanna branch is shown by the fact that this Commission has a complaint on a grade crossing located on the branch and that studies reveal that this crossing is blocked by trains 4½ hours out of every 24.

Referring to our prior remark that change in ownership might affect flow of traffic at gateways, it is obvious to this Commission that the present Penn Central, Pittsburgh-Fort Wayne-Chicago line cannot be downgraded to a single track line in addition to a local service and feeder line function. Traffic figures provided to this Commission indicate that each of the present interstate rail routes—Pittsburgh to Chicago—are carrying in excess of 30 million gross tons per route mile annually. In 1971, Penn Central's line from Cleveland to Toledo carried 70.7 million, whereas 1973 figures for Norfolk and Western from Cleveland to Fostoria indicate 50 million, 1971 figures for Baltimore and Ohio from Akron to Fostoria indicate 45 million, and 1971 figures for Penn Central from Alliance to Mansfield indicate 51 million, (more recent data indicates this may be as high as 71 million) for a total of 216.7 million. Utilizing the four tracks recommended by DOT as primary routes and an average train of 3800 gross tons (Penn Central average first 10 months of 1973 was 3753 gross tons per train), each track will be required to average 38 trains per day. A major derailment on any track would be catastrophic. It should also be noted that two of Penn Central's major freight classification and servicing yards, namely Enola and Conway, Pa., are located on this route. Accordingly, it is grossly apparent that the Penn Central main line tracks Philadelphia-Harrisburg-Pittsburgh-Fort Wayne-Chicago are vital and necessary to the economy of Pennsylvania and the Northeast and are required as a main route from New York and the South to the western gateways and should therefore be retained as a primary interstate rail route along with the other three routes.

The DOT report, volume 2, part 1, indicates that zones 75 and 78–New Castle and Johnstown, Pa., are stamped "Comprehensive Excess Line Analysis Was Not Performed Due to the Complex Nature of the Zone." As these two zones comprise approximately 18 percent of the entire Commonwealth, the effect of not analyzing these two zones must be considered in the overall analysis of potential excess trackage in adjoining and other zones. Indeed, to plan a transportation system for Pennsylvania without these two zones is analagous to completing a jigsaw puzzle with two key pieces hid under the table.

Volume 1, table 2 of the DOT report lists 1,450 route miles in Pennsylvania as potentially excess trackage with a corresponding loss of 150,000 carloads of traffic. Simple mathematics indicates that the excess trackage generates an average of 103 cars per mile. Certainly this amount of traffic as measured by the DOT's own standard will sustain 1,450 miles of rail line. It would appear that the rail planning office should prepare their own line by line study of ex- that the rail planning office so that the 150,000 cars of traffic are retained.

If all the bankrupt carriers are required to participate in the Northeast rail reorganization, the region served by the new corporation should generate the densest freight flows of any region in the world and is capable of supporting at least three competitive systems. It is the Commission's recommendation that Penn Central along with other bankrupt carriers be split into three parts, namely, two parallel competing segments utilizing the main lines routes of the old Pennsylvania Railroad minus the Boston-Washington Amtrak passenger corridor and the old New York Central, including attachment of contiguous branch and feeder lines regardless of ownership by either of the bankrupt parties thereby serving the two goals of enhancing rail competition throughout the region and facilitating the formation of better balanced transcontinental systems.

The existing pattern of rail traffic such as the Boston and Maine, Delaware and Hudson, Lehigh Valley Reading route from New England to the South and its connections to the West must remain as a competitive north-south route. This will keep a vast number of freight trains off the passenger corridor and will provide an efficient alternate route with superior clearances over either Erie Lackawanna route. The Erie Lackawanna two-track railroad at Nicholson (Binghamton-Scranton-New York) is being single tracked to increase clearances at Nicholson Tunnel and both Erie Lackawanna lines whether via Scranton or Port Jervis require engine helper service. It is to be noted that the Lehigh Valley segment of this route, from Sayre to Allentown carried in excess of 17.1 million gross tons per route mile in 1972; Reading Co.'s connection at Allentown proceeding south to Reading carried 23.8 million, 31 million from Reading to Rutherford, and 26.8 million from Rutherford to Lurgan. Accordingly, this important route with the connections to Baltimore and Washington should be maintained and operated as a competitive alternate route from New England to the South.

In zones 72 and 82 respectively, the Erie Lackawanna's Bloomsburg Branch and Penn Central's Wilkes-Barre Branch must be retained as the Erie Lackawanna line carried 9.8 million gross tons per mile for the year ending June 30, 1973, and the Penn Central line carried 8.22 million gross tons per mile in 1971. Instead of these lines which carried approximately 17 million gross tons per mile being declared excess and being relegated to stub-end feeder tracks, both should therefore be retained as through routes as each carries nearly 10 million gross tons per mile. Additionally, the Penn Central line is a main interchange with the Delaware and Hudson at Hudson Yard-Wilkes-Barre with an excess of 50,000 cars being interchanged annually and both of these lines were designated essential to the public interest when DOT approved flood damage restoration loans.

In many communities designated as stations in Pennsylvania, the DOT report indicates tracks of one of two carriers serving many industries as potential excess without showing how the remaining carrier will connect to the excess trackage to provide continuity of service. Some of the proposed connections may be nearly impossible and/or economically unfeasible thereby necessitating the retention of the potential excess track as the only alternative to keep rail service. A recent connection at Quarryville cost more than the estimated cost of upgrading the track replaced by the new connection.

Although the previous remarks have necessarily been general in nature, as mentioned in my prior testimony, a more detailed analysis of the DOT core system proposal is currently being completed by the Pennsylvania Public Utility Commission and such analysis and recommendations of this Commission will be submitted following this hearing to the Rail Services Planning Office.

Again the report initially presented ignores passenger commuter service and the advantages to be gained where peak hour passenger service supplements of offpeak freight service. However, not as an afterthought, but with due deliberation, we request that the resultant rail plan not leave our many short line railroads without rail connections or purpose and that our citizens be considered not only as statistics but as human beings.

Three major causes of derailments and wrecks on railroads and rail transit lines are:

Broken rails—Hot boxes—Broken wheels

Since 1929, rail detector cars have located several million defective rails, any one a potential cause for a derailment.

To further reduce accidents, hot box detectors are used.

NOW WHeeLFAX. The Completely Automatic Ultrasonic "in-motion" Railroad Wheel Inspection System, developed and produced by Scanning Systems, Inc., is available for in track installation on railroads and rail transit lines, to detect cracks in wheels of cars and locomotives, before they grow large enough to cause failure, with serious consequences.

No more tedious visual wheel inspections!

No more manual ultrasonic hand scaning of hard to reach wheel surfaces from inspection pits.

No more interpreting of magnetic particle indications.

WHeeLFAX Systems, installed in track for inmotion inspection of wheels, will increase safety at a cost of pennies per wheel.

Data Sheet SS–72, copy enclosed, gives details on the answers to a problem that has plagued railroads for so many years.

Write or telephone today for a date to see a demonstration of WHeeLFAX.

CARY E. HOHL,
Sales Manager, Scanning Systems, Inc.

ATTACHMENT G

WHEELFAX™ SPECIFICATIONS

Test Speed 0.1 - 30.0 mph (approx.)
Temp. Range —50° to 150°F.
Wheel Dia. 28″ to 50″ dia.

EQUIPMENT DESCRIPTION

Supplied by Scanning Systems, Inc.:

Item 1. One electronic control center. All equipment, including internal electronics and external packaging, is heavy duty, all-weather type designed for rough service. Control Center housed in standard railroad heavy gage enclosures.

Item 2. Two ultrasonic rail search units, each comprised of: One rail, 6¾″ long x 1″ thick, fabricated from SAE A-2 Air Hardening Tool Steel, heat treated and tempered to 48 - 52 Rockwell "C". One base 6¾″ long, Ni-Resist. One Search Unit Assembly. This assembly carries the ultrasonic transducers, and all connections for electric power, air, ultrasonic couplant, input and output signals, strain gages, etc.

Item 3. Four Strain Gages, 2 for each rail, permanently mounted on rails adjacent to each side of rail search units, to program the inspection as wheels approach from either direction.

Supplied by Customer:

1. Inspection site such as:
   Hump approach track
   Yard entry track
   Moderate speed mainline track
   Thru track in wheel shop
   Ahead of hazardous locations
   After severe braking points
2. Two rail "plugs," approximately 15′ long, one for each side, per Scanning Systems, Inc., specifications, for midpoint installation of Ultrasonic Rail Search units.
3. Site preparations are per Scanning Systems, Inc., specifications.
4. Electric Power, 90 - 136 Volts AC 60 cycle, 500 Watts at 115 Volts*.

**Without internal heaters for low temperature operation.*

All specifications subject to change without notice.

SCANNING SYSTEMS, INC.

210 South King Street Danbury, Connecticut 06810 Telephone (203) 748-2065

Patent applied for.

Printed in U.S.A. 6–72

ATTACHMENT H

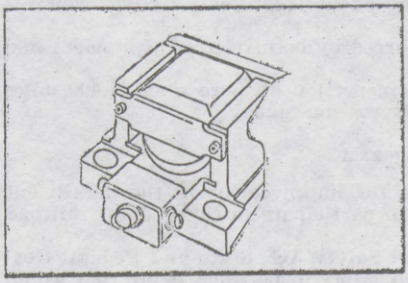
Wheelfax™

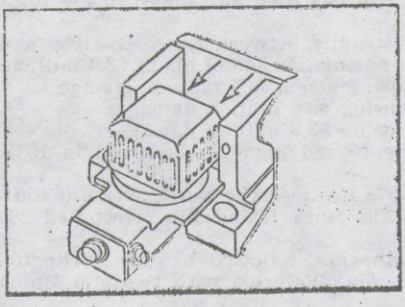
Data sheet SS-72

The Completely Automatic Ultrasonic "in-motion" Railroad Wheel Inspection System

What it does:

- Detects cracks, spalling and heavy pitting in tread and flange areas of railroad wheels.
- Detects excessive wheel wear (high flange). Optional.
- Classifies wheels into 4 diameter groups: (28″-30″, 30″-33″, 33″-36″, 36″-40″) to facilitate changeout preparations. Optional.
- Detects excessively thin wheel tread. Optional.





How it works:

At train speeds of 0.1 - 30 MPH, every wheel passing over the Wheelfax Ultrasonic Rail Search Unit is tested circumferentially several times in both clockwise and counterclockwise directions.

Signal outputs from the Wheelfax can be used to operate paint guns, alarms, recorder chart pens, alpha numeric tape, etc., or interfaced with existing car identification systems and computers.

Cracks ½″ long and 1/10″ deep are reliably detected under conditions specified.

Wheel tread surfaces unsuitable for testing, because of heavy pitting, heavy rust, severe spalling, flange oiler grease, etc., result in a "no test" signal on the record tape or alternate output device, so that such action as is necessary can be taken by the railroad.

Fig. 1. In track installation showing wheel approaching.

Fig. 2. In track installation. Exploded view to show ease of installation and replacement. (Removal of only 2 bolts)

SCANNING SYSTEMS, INC.

210 South King Street
Danbury, Connecticut 06810
Telephone (203) 748-2065

[From the Des Moines Sunday Register, Feb. 17, 1974]

TRAIN DERAILMENTS UP 69 PERCENT

IOWA MISHAPS COST $6.3 MILLION

(By John Hyde)

Train derailments in Iowa increased sharply in 1973, causing more than $6.3 million in damages, an Iowa Commerce Commission report says.

The report cites the condition of tracks and roadbeds as the largest single cause of derailments. More than $2.8 million in damages were caused by derailments that were due to bad track conditions, according to commission figures.

"It's just the track," says Railph L. Pilger, Iowa superintendent of railroad safety and service. "It gets worse and worse every year, so we have more accidents every year."

529 LISTED

The 529 derailments recorded by the Commerce Commission in 1973 is a 69-percent increase over 1972.

Pilger said the derailment total is the highest in his 4 years at the Commerce Commission. He said that because the derailment records are retained only 5 years, he does not know if it is the highest ever.

But he added: "They (derailments) just keep going up every year even though the total number of trains running in Iowa gets lower and lower."

The 6,356,608 damage caused by the derailments represents a 70-percent increase from the 1972 damage total.

The damage figure represents losses incurred by both railroad equipment and the contents of rail cars.

Pilger is responsible for overseeing the inspection of more than 11,400 miles of track, 6,600 railroad bridges and 1,450 crossing signals.

SAFETY PROGRAM

Pilger and others say there is no hope for improvement in the derailment situation in Iowa until the State decides to participate in the Federal railroad safety program.

Under the terms of the Federal Railroad Safety Act, State and Federal Governments share equally the costs of railroad safety inspections. A bill that would authorize Iowa's participation in the program has been introduced in the Iowa Legislature.

The number of train derailments grew steadily between the years 1969 and 1972. In 1969, there were 213 derailments, causing damage of about $3.4 million.

In 1970, there were 218 derailments, causing about $3.2 million damage.

In 1971, there were 226 derailments, causing $3.6 million damage.

In 1972, there were 346 derailments, causing $3.8 million damage.

By far the largest increase in derailments and damages occurred in 1973, the Commerce Commission figures indicate.

The highest number of derailments in 1973 involved the North Western Railway. The company had 213 derailments. The Rock Island Lines recorded 209 derailments in 1973.

The Milwaukee Road reported 66 derailments, followed by the Burlington Northern with 29. Illinois Central with seven, Waterloo with two and Union Pacific with one.

Two more derailments were reported which involved more than one line: the Burlington Northern and Rock Island Lines, and the Burlington Northern and Milwaukee Road.

[From the Daily Record, Feb. 25, 1974]

PENNSY CARS DERAILED NEAR ORRVILLE TODAY

(By Ron Amstutz)

Twenty-eight railroad cars derailed at 3 a.m. today (Monday) on Penn Central tracks near the back Orrville Road (Co. Rd. 23).

Orrville and Smithville fire departments were called to the scene when it was discovered one of the railroad cars was loaded with 26,000 gallons of compressed liquid vinyl chloride, an irritating and highly flammable chemical.

The tank car went down an embankment and ripped open a boxcar loaded with apples before coming to rest in a creek. At press time there was no indication that any of the chemical had escaped.

The eastbound Penn Central train was nearing the back Orrville Road crossing when the cars derailed. Many of them jacknifed, but none overturned. Main tracks were damaged and a side rail was completely ripped from its wooden ties for about a hundred feet.

Vinyl chloride is highly flammable. When ignited by sparks or open flame it gives off hydrogen chloride, an extremely irritating and corrosive gas. Firemen were also worried that the entire tank would explode if it caught fire.

Railroad workers began moving cars around the tank car at about 8 a.m. today. A crane will be used to lift the tank, which was completely ripped from the wheel mechanism of the car.

Firemen are staying on the scene until the tank is transported from the area.

[From the Telegraph Herald, Apr. 2, 1974]

CLAYTON MEN SAY RAILROAD IS NEGLIGENT

(By Marshall Marvelli)

Clayton, Iowa.—Two Clayton businessmen, angered by a train derailment here yesterday, say the Milwaukee Road is neglecting rail bed maintenance.

The mishap sent 26 cars of an 84-car train careening from the tracks shortly after 4 p.m., and the two businessmen blame poor maintenance and excessive speed. They said it was the fourth derailment in or near this small Mississippi River community in 2 years.

Both the superintendent and assistant superintendent of the Milwaukee Road division that includes northeast Iowa were unavailable for comment today.

Damage was estimated at about $100,000 to the train, which was going from Savanna, Ill., to St. Paul, Minn., carrying farm machinery, fertilizer, coal, and petroleum. A boathouse near the tracks also was destroyed.

"They don't maintain nothing—never have," said Bob Dohse, owner-manager of Rocky's Riverview Restaurant here.

The restaurant's glass-enclosed diningroom is a few yards from the Milwaukee right of way.

"The dike saved our place," Dohse said. He looked out the windows at several boxcars that apparently were halted by the yard-high earth embankment between his building and the right-of-way.

"They came awful close to killing some people this time," he said. "There was a couple sitting in a car on the other side of the tracks. They apparently heard the train coming and decided to move back instead of waiting for it to pass.

"If they hadn't, they would have been right in the middle of all that," he said, gesturing to a jumble of jackknifed rail cars.

Dohse said he plans to introduce a motion at the next town council meeting for an ordinance to reduce train speed limits to 10 or 20 miles an hour through town.

The regular meeting was to have been held last night, but it was postponed until next week because of the wreck. Dohse said the presence of a graded crossing near his restaurant gives Clayton officials the legal right to set a speed limit.

"People around here don't think nothing of driving spikes and tightening joints," Dohse said. "I can show you places by the Clayton Silica Sand Mine where there are no spikes for a 100 yards.

"They—railroad officials—still say it's cheaper to pick up a wreck like this than to maintain the tracks," he said.

Agreeing with Dohse is Bill Brandel, owner of Bill's Boat Landing in Clayton.

Branded said the trains go faster than the 30-mile-per-hour limit set by Milwaukee Road officials.

"I was working in that walk-in cooler over there," Branded said, "when I heard the rumble of the cars as they came off the track. I took a look and could see the sparks flying.

"That train was running closer to 50 than it was to 30," he said.

Brandel said that, while he has never actually clocked a train, there is little doubt in his mind that they regularly exceed the 30-mile-per-hour limit.

The cooler in which Brandel was working received little damage, but a winter boat shelter attached to his house and adjacent to the tracks was almost leveled.

His wife and four children were in the house at the time. Ironically, several aluminum boats that had been moved from the shelter recently also escaped damage, even though they were nearly surrounded by freight cars.

"They (railroad officials) won't even put in new rails and a new road bed after this," he said. "They'll just clear out this mess and slap down rails and ties. You just watch.

"I think if every town—long the line—clamped down on the speed to slow them down, they'd have to put in new track."

Work crews began arriving late Monday to clear the line. Trains are expected to be running again in 2 or 3 days.

[From the Elmhurst, Mar. 10, 1974]

SIX-CAR DERAILMENT TIES UP C. & N.W. LINE SIX HOURS

All three tracks of the Chicago & North Western railway were blocked Sunday, March 10, when six cars of a 99-car unit coal train derailed east of the Haven Street crossing in Elmhurst.

The train was hauling coal from Elm Mine, west of Peoria, to Wisconsin Power & Light Co., at Sheboygan, Wis.

A spokesman for the C. & N.W. said that the cause of the derailment is still under investigation.

One of the coal cars overturned, blocking all tracks from 12:55 p.m. to 6:55 p.m., when one track was restored to service for commuter operations.

The second commuter line was restored to service at 2:50 a.m., Monday, March 11.

During the period that both commuter lines were out of service, westbound and eastbound trains shuttled to the scene of the derailment and passengers transferred by foot around the wrecked cars to continue their trip either into Chicago or toward Geneva.

Three westbound trains and four eastbound trains were affected by the track blockage.

Monday morning commuter service was practically at normal with only a few trains reporting slight delays.

No injuries were reported in the derailment, but Elmhurst police reported transporting Dominick Fedely, 26, of 129 South Villa Avenue, Elmhurst, to Memorial Hospital for emergency treatment for injuries received in clearing the wreckage.

Police say Fedely was working on the derailment when a boom slipped because of a shifting load and he caught his foot between two rails.

Fedely was treated at the hospital for bruises and abrasions of his left foot.

All three tracks at the site were restored to limited service late Monday morning.

Railroad spokesmen declined to estimate the amount of damages due to the derailment.

[From the Terre Haute Star, Mar. 18, 1974]

DERAILMENT FORCES EVACUATION

RUPTURED TANKER LEAKS GAS

(By Carl Orth)

Seepage of a highly explosive vinyl chloride gas from a derailed tank car Sunday afternoon caused the evacuation of a 36-square block area near the Indiana State University Campus, but no injuries and no fires were reported by local authorities.

Seven cars of a Penn Central freight train jumped the tracks shortly after 2:15 p.m. Sunday between Fifth and Sixth Street near Tippecanoe Avenue. Two of the seven cars carried 114 tons of vinyl chloride, a highly toxic and flammable material.

Firemen of the Terre Haute Fire Department, wearing gas masks, hosed down the one leaking tank car in order to prevent the spread of toxic gas fumes and avoid fires.

Sunday afternoon, persons began to evacuate their homes on the advice of local authorities in an area east of Fourth Street, west of Ninth, north of Chestnut, and south of Locust. Local companies shut off electricity and gas in the area to help insure that no explosion would occur.

The main word Sunday night was "wait" as experts from a Louisiana chemical company were heading for Terre Haute to direct clearing of the overturned cars to avoid touching off an explosion.

Penn Central railroad officials measured the concentration of gas in the area as "critical." Civil authorities were told not to use flashlights or radios in a two-block area within the most concentrated areas.

[From the Chicago Tribune, Mar. 15, 1974]

AMTRAK TRAIN JUMPS TRACKS

The engine and cars of an Amtrak passenger train had a derailment near Bloomington yesterday morning. The train derailed just south of the downstate community while en route from St. Louis to Chicago. Carrying 32 passengers and 4 crewmen, the train's engine jumped a switch and vaulted across the tracks. No one was injured. Some passengers continued by bus and others took another Amtrak train.

[From the Portland Oregonian, Mar. 2, 1974]

BROKEN RAILS

The development of highly sophisticated devices to detect flaws in steel rails and in rolling stock has done little to reduce the soaring rate of railroad derailments.

Oregon has had 11 reportable train derailments since November which follows behind a national trend that is much worse on eastern railroads.

There seems to be a direct relationship between the financial condition of a railroad and the number of derailments it suffers. Track maintenance began going downhill during and after World War II as heavy reductions were made in the number of gandy dancers that tighten the joints and pound in the spikes.

The public outcry has been minimal because so few passenger trains have been involved. For some reason, the public does not get upset about a freight accident, even when lives are lost.

But public concern will grow as passenger service increases and accidents begin happening to the traveling public.

The prosperous western railroads have better track maintenance than do the bankrupt eastern lines. But many accidents are not related to the rails and are caused by rolling stock equipment failures, slides and mistakes.

The increase in rail tonnage is putting a heavier burden on both the equipment and the rails. Railroads insist they are meeting Interstate Commerce Commission standards and have spent small fortunes in upgrading their rails and rolling stock.

Obvious something is wrong. Either the standards are not good enough or Federal enforcement has been lax.

[From the Chicago Tribune, Mar. 8, 1974]

DERAILMENT SNARLS DOWNTOWN HAMMOND

(By Thomas Connor)

Twenty cars of an Indiana Harbor Belt Line Railroad freight train left the tracks in the heart of Hammond yesterday, causing turmoil and monumental traffic jams.

Two of the cars twisted across Logan Street bordering the tracks. One of them smacked into the front of a house and another rolled over in a front yard. Others tipped over in the street, crushing parked autos beneath them.

All sorts of alarms were sounded. Oil spilled from the three-unit diesel locomotive tandem and from a leaking railroad tank car, giving firemen the job of washing down the flammable fluids.

Reports of gas leaks also were heard, giving utility companies and police the task of searching out ruptures and alerting residents. Some persons were reported to have left their homes because of gas leaks.

Twelve north-south streets, including four main thoroughfares, were blocked, creating the traffic jams. The only major thoroughfare to remain open in the affected area was Columbia Avenue, which has an overpass.

The scene of the tieup was between Columbia and Calument Avenues, major north-south arteries, between Michigan and State Streets, which runs northwest and southeast.

It was the home of Mrs. Ray Mann at 1137 Logan Street that was hit and damaged by an errant boxcar.

"I heard a crash," she said. "The house shook and my son and I ran out. We saw the boxcar had demolished our front porch and the front of the house."

The derailment was described as the worst in the history of Hammond. It came at a time when residents were protesting that there are too many grade crossings in their community.

The derailed cars were part of a 130-car train bound from Blue Island to Elkhart, Ind.

Considering the problems it caused them, police and fiermen considered the derailment a disaster. They had one consolation; no one was reported injured.

STATEMENT OF JOHN F. LEYDEN, PRESIDENT, PROFESSIONAL AIR TRAFFIC CONTROLLERS ORGANIZATION, AS PRESENTED BY ALAN MOSKOWITZ, LEGISLATIVE ASSISTANT OF THE PROFESSIONAL AIR TRAFFIC CONTROLLERS ORGANIZATION

Senator BYRD. Mr. Alan Moskowitz, legislative assistant of the Professional Air Traffic Controllers Organization.

Mr. MOSKOWITZ. I have already submitted my formal statement, and I am here on behalf of John F. Leyden, president of the Professional Traffic Controllers Organization. He can't be here today, and I would like to apologize for his absence.

Mr. Chairman and members of the subcommittee, I am very grateful that you have allowed the Professional Air Traffic Controllers Organization this opportunity to voice our comments concerning the Federal Aviation Administration portion of the Department of Transportation appropriations for 1975.

PATCO and its membership, controlling thousands of aircraft daily, are very concerned about the issues of air safety and efficient air traffic control, as—I am sure—are the members of this subcommittee and the FAA. We are also aware that as employees of the FAA, these appropriations affect the controller work force directly. Because controllers are much closer to the pressures on and the inherent problems in the present air traffic system, I am sure that our observations will be relevant to the present hearings.

I would like to preface my remarks by stating that PATCO does not desire a reduction in the Agency's proposed budget. Our differences with the FAA are not on the question of how much, but rather, how. From our vantage point inside the heart of the air traffic control system, controllers can better perceive the requirements of the system as to where relief is overdue and as to what expenditures are needed to sustain and improve the safety and efficiency that must exist if man is to fly at all.

One of the primary concerns of controllers is manpower. Aviation is growing at a considerable rate in spite of the fuel shortage. While the IFR aircraft handled at centers and aircraft operations at terminals were below last year's figures during the winter months—1973–74—by spring of 1974, the aircraft handled and operated at both terminals and centers had surpassed last year's figures for the same period. From this, we may conclude that we cannot look to the fuel shortage to relieve the controllers' workload.

Moreover, while air traffic operations at the towers have increased by over 40 percent, and aircraft handled at the centers have increased to close to 15 percent from 1971 to 1974, the number of men in the controller work force has actually decreased in the same time period. In June 1971, there were 16,501; while in March 1974, there were only 15,870. Thus, there are fewer men moving more air traffic than before.

While this controller shortage has added unnecessary strains and pressures in the past and present, the future is considerably bleaker. I am sure that the subcommittee is aware that it takes approximately 3 years to train a controller to full journeyman status; a man hired in 1975 will not be of full use until 1978. But the subcommittee is probably

unaware that the majority of the present air traffic control work force entered the system upon the end of the Korea conflict, approximately 1954–55.

PATCO's major objection to RDP at present is, that it is unsafe and inefficient. The FAA was forced to rush the system into operation before their present budget request to justify the hundreds of millions of dollars spent on the system in years past. The bugs have not been worked out, yet the FAA is asking controllers to depend on the system to separate live traffic daily.

At Kansas City Center, one of the centers where RDP is operational, 78 percent of the controllers judged the system unsafe because of a high degree of breakdowns and unreliability. At Los Angeles Center, where RDP is also in use, 94 percent of the controllers surveyed said the system was unsafe. Eighty percent were of the opinion that it should be closed down immediately because of the unreliability of the system.

The Aviation Safety Institute found that 131 hazardous situations had developed at the centers utilizing RDP, including 11 near-misses. These situations ran the gamut from a complete breakdown of the computer system to instances where planes were being shown on the screen up to 20 miles from where they actually were located in the skies.

There are various reasons for the problems associated with the RDP, the primary one being the radar itself. The long-range radar used for center traffic separation is 20 years old, hopelessly out of date an inefficient. Feeding an archaic radar system into a space age computer can only multiply the problems that previously existed.

While, over $600 million have been spent to date on NAS stage A, of which RDP is a central part, only a pittance has been allocated for up-to-date radar systems off which the automated equipment works. The implementation of RDP has not displayed a concern for safety on the part of the FAA, but, rather, overriding political pragmatism.

Besides the dangerous conditions that RDP creates, there can be no way that the system can be termed efficient. While one man alone could handle a sector employing the previously used broadband radar system, it is more difficult, and thus dangerous, to operate the narrowband RDP with less than two men.

In the new system, every aircraft track must be typed in, as must much other data, keeping the controller more occupied as a typist than as an aircraft separator. Moreover, a great deal of uncertainty exists as to the result of data being fed to the computer as the machine is very complex and its internal operation is not well understood by the controller. In effect, the controller had more personal control over the old equipment, thus more flexibility, than with the new automated radar data processing system. The FAA might be more exact if they spoke of unproductivity gains.

Finally, PATCO is concerned with the confusion surrounding the costs of the second career retirement program for controllers. The report of the House of Representatives' Committee on Appropriations on the Department of Transportation and Related Agencies Appropriation bill, 1975, Report No. 93–1111, expressed the committee's concern about the high cost of the program.

Because of the early burnout of air traffic controllers, causing unsafe retention of this personnel, this large segment of the work force will be entitled to retire after 26 years of duty, in 1979–80. Since it is neither practical nor possible to hire between 3,000 to 5,000 controllers at one time, a reasonable amount of foresight would suggest an open pipeline system of hiring, moving a workable amount of people into the system yearly in preparation for this great exodus at the end of the decade.

Even if it were possible to hire 5,000 men at one time, the training facilities would not be able to handle them; the new hirees would not be competent to handle live traffic, and, the journeyman controllers remaining, besides being incredibly overworked, would have to be utilized in the training of the newly hired. In short, the air traffic system would become a shambles.

While this scenario is undoubtedly frightening, even more so to the controller than to the rest of the public, it should not be summarily dismissed as mere alarmism, for it is based squarely on presently known facts rather than sheer pessimism.

Throughout the 1960's, the illness of the air traffic system, a shortage of qualified controllers causing unsafe conditions, was apparent and yet was allowed to go untreated. By 1969, the patient was in critical condition and emergency measures, in the form of crash hiring, had to be undertaken to revive the patient.

The same symptoms are under the surface today, but will again appear if they are allowed to go untreated. A relapse would necessitate vast expenditures at breakneck speed. While the patient may be saved, such haste makes for a good deal of waste. PATCO believes that preventive medicine, in the form of an expanded hiring program to systematically provide for future needs, is in order.

The present FAA budget request for a mere 786 new controllers for terminal facilities is simply not adequate in light of these facts. Though we realize the importance of budgetary economy, we hope you will agree that there can be no economizing on safety; you cannot price human lives.

Our second greatest concern is automation. The controller is in favor of automation if it will facilitate his work, but, again, not at the expense of safety or efficiency.

The ARTS III program in the towers has been a great boon to controllers as has the Flight Data Processing System in the centers. But the FAA has rationalized reduced controller hiring as a productivity gain from the implementation of automated equipment in the air traffic control centers, especially radar data processing, RDP, equipment.

Last year the Agency alleged that RDP would deliver 5 percent productivity; this figure has been lowered to 3 percent this year. At this point, any prediction would be questionable as the system has only been in full operation in two centers since March, 1974, and, to be included in the present budget request, the calculations must be at least a year old. But this is a minor point.

The report, on page 14, cited $45,000 as the annual cost of training each controller. This figure is inaccurate in that $45,000 is the cost per controller of the entire 2-year program. The annual cost per controller would be approximately $22,500.

Since this figure represents the controller's salary, benefits, tuition, travel, and per diem, we hope you will agree that the cost is not unnecessarily high. Fearing that this very progressive and much-needed program is in danger of being fiscally damaged because of this misconception, we respectfully ask that this subcommittee recommend that the FAA budget request as to the second career program remain intact.

In closing, Mr. Chairman, I would again like to express our appreciation to you and the subcommittee for allowing PATCO to express our paramount concerns about air safety as they relate to the air traffic controller workforce and the FAA appropriations.

I would like to mention something that was in the committee report, the House Appropriations Committee's Report on Second Career Training. They were concerned about the high cost of the training and quoted a figure of $45,000 per year per controller. That is inaccurate. It is closer to $22,500 a year considering that includes the salary, tuition, moving expenses, and per diem.

Senator BYRD. You are talking about thousands of dollars?

Mr. MOSKOWITZ. Yes, sir $22,500 a year. That is not an unreasonable figure, and we hope the program, being as progressive as it is, will not be damaged because of this. We hope that FAA budget request on this particular item will not be cut.

Thank you very much.

Senator BYRD. Thank you very much.

We appreciate your fine statement and your patience in waiting.

CORRESPONDENCE

The subcommittee has received a number of letters and statements from various groups and individuals, that will be placed in the record at this point.

[The correspondence follows:]

Congress of the United States
House of Representatives
Washington, D.C. 20515

STATEMENT BY
E (Kika) de la Garza, M C
TO THE
Subcommittee on Transportation
Senate Committee on Appropriations
24 July 1974

Mr Chairman, the appropriation bill for the Department of Transportation contains the sum of $4 million for railroad location. This is in accord with the authorization of twelve railroad demonstration projects in the Federal Aid Highway Act of 1973.

Among these authorized projects is one at Brownsville, located in my congressional district, and Matamoros, across the border in Mexico. This was selected as one of the most important demonstration projects because it is intermodal in nature, international in scope, and truly demonstrative of how local, state and federal governments, working with two privately owned railroads, could plan and improve a local rail system through relocation of present railroads and some of the rail lines.

The goals are to improve the efficiency of rail operations, eliminate more than seventy rail-highway conflict points, improve the environmental quality, and stimulate sound community development and port development.

Total estimated cost of the three-year project is slightly below $10.2 million. Earlier the sum of $487,300 was appropriated for a preliminary engineering study, which is now nearing completion.

Mr Chairman, if this sound and worthwhile project is to go forward to completion under the three-year term of the 1973 Highway Act authorization, it is urgently necessary that an adequate appropriation be made for fiscal 1975. I commend the merit of the project to your Committee and respectfully urge the appropriation of sufficient funds to enable work on it to move along without delay.

Thank you.

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ROCHESTER-GENESEE REGIONAL TRANSPORTATION AUTHORITY

July 24, 1974

Honorable Senators
Committee on Appropriations
United States Senate
Washington, D. C.

Dear Senators:

Our experiences with Dial-A-Ride and integrated transit systems are actually the result of previous experiences in the City of Batavia, a small town of 18,000 people midway between the cities of Rochester and Buffalo. Three years ago, the Transportation Authority purchased a privately-owned bus company in Batavia that was about to go out of business. In place of the fixed route system that had been experiencing steady ridership declines, we installed a Dial-A-Ride system.

After three years of operation, we can report to you the results of that Dial-A-Ride system. As part of our overall Batavia Dial-A-Ride system, we are providing a variety of services for many new markets. These include daily home-to-work and home-to-school service, and weekly shopping and banking service for the elderly, services for the handicapped, and package delivery service. As a result of Dial-A-Ride, people can travel anywhere in the City of Batavia directly from their origin point to their destination point. Initial ridership on the Dial-A-Ride system in Batavia increased about 30% over the ridership on the previous fixed route system and has held steadily ever since its beginning.

The results in Batavia have been so encouraging that the Authority decided to investigate what roles Dial-A-Ride could play in the Rochester Metropolitan Area. We spent one full year working with Consultants from Massachusetts Institute of Technology (MIT) to evaluate and plan a number of approaches. Not only did we rely on our Batavia experiences, but we also utilized the research results provided through the UMTA sponsored research and demonstration activities.

Although there were certain similarities between Batavia and Rochester, there were also many differences. In Batavia, Dial-A-Ride was the only form of public transportation. In Rochester, Dial-A-Ride would be integrated with a

fixed route system. The Batavia system was small enough to operate under manual control. The Rochester system would be larger and would require some form of automated dispatching to insure ability to operate and control a larger Demand Responsive System.

Perhaps it would be in order here to give a brief explanation as to what would be involved in an integrated system wherein Demand Responsive Transit and traditional "stop and go" transit would be coordinated in order to improve both the quality and the quantity of transit service in a metropolitan area.

It is well recognized that it is the extension of fixed route service into low density areas which places a strain on a fixed route system which would otherwise be more economically viable. In other words, transit routes with sufficient ridership in a high density city line area lose significant sums when they are extended into low density suburban areas. Furthermore, these extended routes do not really give the quality or the quantity of transit service that is needed in low density suburban areas if transit service is to be a practical alternative to the automobile. This is particularly true in trips from home to work each day. And, it is those work trips by automobile which contribute to traffic congestion and pollution during peak periods each day of the week.

The operation of Demand Responsive Service in an area where one has the opportunity to adjust the fixed routes so as to reduce the extent to which they lose money and, at the same time, increase the quantity and quality of service, is what is meant by "integration of Demand Responsive Service and fixed route service".

The use of Demand Responsive Service to pick a person up at his home and to deliver that person to a transit point to board express service or fixed route service enables us to utilize the best of the elements of the system. The adjustment of fixed routes by cutting out losing portions helps to reduce operating deficits and the doorstep pickup improves the quality of the service and makes it available to more people. This also gives people an alternative to using the automobile, especially for work trips.

Our Phase I implementation was begun in August 1973 when a seven-vehicle Dial-A-Ride system was installed in the suburb of Greece and a portion of the City

of Rochester. The service area was approximately ten square miles and included 50,000 people. Since its initiation, ridership has steadily increased. The service includes taking people from home to work, taking students from home to school, taking Senior Citizens shopping, and service from any point to any point in the service area.

This June we initiated the second stage of Phase I when one fixed route line of our traditional bus system in the service area was integrated. Service on that line was modified during the off-peak and evening hours, and on Saturday. It is estimated that this route integration will result in a yearly saving in excess of $60,000 -- the amount of money the fixed route line has been losing each year.

In September, the third stage of Phase I will begin. The vehicle fleet will be expanded to thirteen vehicles, the service area will be increased and other fixed routes in the service area will be integrated.

Our ultimate plan involves the development of other service areas. As new service areas are implemented, route rationalization and system integration of Dial-A-Ride with the fixed route system would proceed.

However, to accomplish our plans, it is essential that critical research be performed by UMTA and its results be made available to us as well as to others. In particular, we will require some form of computer controlled automated dispatching and techniques to perform route rationalization and develop automated systems. Rochester is the first city in the country to install a digital communication system as part of its Dial-A-Ride program. Digital communication substitutes written messages for voice messages thereby increasing the speed and accuracy of service. The next step is to couple the digital communication system with a computer. The initial steps taken to achieve route rationalization and system integration have been done largely on an intuitive basis up to now and research is needed to carry out larger and even more significant plans.

These are complex questions which require considerable investigation. How is Dial-A-Ride used in a metropolitan area? How many systems should one have? How do they expand? How are they integrated with conventional transit? The

UMTA sponsored research to date has provided the necessary tools to plan and implement small-scale systems in small cities. The results of this research are the more than 40 small-scale systems that have been implemented in North America. Additional research is now needed to show how Dial-A-Ride is utilized in metropolitan areas. As Executive Director of a Transportation Authority, I join our Chairman, Mrs. Crapsey, in emphasizing the importance of this research to enable Rochester and other cities in achieving integrated transit systems that will serve our future needs.

Respectfully submitted,

Robert P. Aex, Executive Director
Rochester-Genesee Regional Transportation Authority

STATEMENT OF CLIFTON F. von KANN

Views and Recommendations of the Scheduled Airlines on the FY-1975 DOT/FAA Budget

Summary

My name is Clifton F. von Kann. I am Senior Vice President, Operations and Airports of the Air Transport Association of America.

The Federal Aviation Administraton continues to perform an important role in the economy of the nation and its functions are of great importance to the many facets of the aviation industry. Despite the fuel crisis, the number of aircraft operations for which Federal Aviation Administration provides vital services is continuing to increase at a significant rate. While there were schedule reductions and some contraction in total airline operations during the height of the fuel crisis, many flights have now been restored.

Precipitous increases in the costs of aviation fuel have made air traffic control delays and inability to serve airports in poor weather more serious than ever before. The reliance of aviation on FAA air traffic control and navigation services necessitates the highest possible quality and efficiency of those FAA services and a steady improvement in those services remains a vital requirement.

We have had an opportunity to study the DOT/FAA Appropriations Bill passed by the House of Representatives and my testimony will comment on certain aspects of that Bill. We believe that it is not the time to make large cuts in the FAA Budget proposals; and we view certain developments differently than did the House.

The continuously rising costs of FAA services are worrisome to all, and we support any appropriate effort to make the system more efficient. The prudent course lies in continued, reasoned examination and adjustment by Congress of FAA's program -- rather than in any drastic cuts which may harm essential services in the near term, and may do great damage in the longer term.

We note that the President's Budget was predicated on a change in the law to provide for the partial funding of FAA operating expenses from the Airport and Airways Trust Fund. We oppose this proposal, and support the approach which the House of Representatives took -- namely not to consider it at this time. Only two years ago Congress studied this issue and determined that FAA Maintenance and Operations should not be funded from the Trust Fund. Thus we agree, of course, that the present law applies to this year's appropriation.

Our views on the DOT/FAA Budget and on the actions taken by the House are set forth in my statement, but in barest outline they are as follows:

Operations:

We do not agree with the House action that would reduce the number of air traffic controllers FAA is authorized to hire for FY-1975. Notwithstanding our concern over the size of the total budget, we support the specific FAA request for 1500 additional people. We believe the House action was based on the belief that there has been a significant reduction in air traffic operations. Our information indicates that such reductions have not been great. Specifically,

- While air carriers canceled approximately 2200 schedules a day during the height of the fuel crisis, some 1200 of these have been reinstituted.

- Total operations at control tower locations, an indication of total FAA activity, have been above those of 1973 for the months of February through May 1974.

- While air carrier operations through May of 1974, compared to 1973, are lower, the amount of reduction is declining rapidly - from 14% down in January 1974 vs. 1973, to 6.4% down in May 1974.

There are strong indications that the demand for air traffic control services from FAA is not declining significantly, and is in fact growing.

We are concerned lest the training pipeline for controllers dry up. We believe it must be kept going steadily, and supplied with trainees in sufficient numbers to adequately man existing facilities. We further agree there is a need for more technicians and others to support the growing system of FAA air traffic control and navigation facilities. In supporting this appropriation, however, we feel FAA should be pressed to intensify efforts to make better use of its work force through the introduction of automation and the use of new, higher reliability facilities which require less maintenance.

We agree fully with the House that FAA should be pressed to develop standards for the controller re-training program which will minimize cost increases under this program.

We support FAA's efforts to provide second-career training where there is a need, but we agree that standards are necessary to assure it is done economically and efficiently.

We think there are possible savings available from a reduction in the number of FAA Regions by combining certain Regions.

The pattern of aviation services does not warrant an extensive network of FAA field offices like those established for general government programs.

Airport Services Personnel:

We are aware that the OMB has mandated a 20% reduction in Airport Services personnel within FAA. It is our understanding, from OMB, that this has been done to achieve economies of operation and streamline the processing of airport grants. Airline airport affairs people have felt for sometime that there has, in some instances, been unnecessary involvement or "red tape" in the airport grant program. We favor "economy" steps, and streamlining the program where feasible, but, at the same time, we must be very concerned that the airport grant process not get bogged down in any way. Accordingly we urge the Committee to carefully monitor the progress of this step, and take immediate action if it becomes apparent that the airport program will be retarded or damaged in any way, due to lack of personnel.

Facilities and Equipment:

We support FAA's request for $250 million new obligational authority as provided by law. We think the House action to reduce the appropriation by $8.9 million, at a time when there is still a significant unmet need, particularly for safety-related terminal facilities, should not stand. We believe it would be better to retain FAA's F&E appropriation at or above the $250 million minimum previously directed by Congress. Beyond that, we believe that there should be an additional program for landing aids. We have surveyed the airlines' actual needs and, in Attachment A, have identified specific navigation aids which are required to improve safety and increase operational reliability. Landing aids help prevent accidents and increase operational reliability. We believe that an increase in FAA's program by $23.4 million is justified.

The current examination of FAA;s procurement process, long a problem for FAA and those who supply FAA, is essential. We

support the efforts of the Administrator to achieve a meaningful improvement in the way FAA procures its facilities. Major savings in time and money are possible in this area.

Airport Grants-In-Aid (ADAP):

We support the Administration's request for airport grants-in-aid, but think it is worth noting that although the Airport and Airways Trust Fund was established, based on user taxes, to meet the capital requirements of the airport and airways systems, the federal government today is still funding less than 25% of total airport capital improvements. We look forward to Congressional review of the program next year. We believe, however, that there is not need to appropriate the $13 million requested for planning grants, since there is sufficient carry-over of funds to take care of requirements. We thus support the actions of the House with respect to airport aid.

Section 302 of the House passed bill limits the obligational authority for airport grants to $310 million. We believe this should be revised to allow the obligation of $504 million, since this would allow the full exercise of obligational authority envisioned by Congress when it created the new airport and airways program. If not allowed, some regions will run out of obligating capacity sometime in December. The $194 million additional obligating authority represents an amount that has been authorized, but not obligated since the inception of the program, due to limitations which have been imposed.

Under the National Capital Airports appropriation, we strongly urge the restoration of $3 million designated for enlargement for the jet ramp at Dulles International Airport.

Research and Development:

We support FAA's request for $70 million Research, Engineering and Development funding. We do not concur with the views of the House, and the House action to reduce the E&D Budget by $15 million. Our view of the contents of the FAA Report on Airport Capacity submitted to the Congress last December does not

justify a reduction in funding. The House indicated that "the problems cited by the report are not technological ones which require a large amount of research. In addition, the thrust of the recommendations appears to be directed toward assuring that users adapt to the system rather than having the system most effectively accommodate the users' needs."

Our view is that while many of the problems which face aviation must be solved by work other than improvements which can be achieved by Research, Engineering and Development in FAA's program, there remains a large effort to get the most out of our Air Traffic Control System. We believe it would be a mistake to cut the FAA proposed E&D Budget at this time.

The airlines have conducted an assessment and analysis of FAA's new and on-going programs, and of the report FAA has submitted to Congress on Airport Capacity. In our view, that report is not a signal to cut the R, E&D Budget, but to change certain priorities in FAA's program. Attached to my statement you will find our appraisal of FAA's R, E&D effort as well as recommendations on a priority for the developments of major interest to the airlines.

Several important programs have been plagued by costly delays, and we urge initiatives to get them moving. Our emphasis is on recovery of lost capacity, on safety, on reduction of ATC Delays, on better reliability in poor weather, and on system growth. Our specific recommendations are directed to these problems.

We urge the Senate to restore the $15 million, along with an admonition to FAA to pursue those E&D programs which have a direct relation to the improvements we have emphasized.

Airport Capacity;

As I've just noted, we have studied the report on airport capacity which FAA was directed to submit to the House. In our view it is a good study because it realistically identifies the

problems, defines the limitations on system development, and makes concrete recommendations.

A key conclusion of the study was the assertion that electronic technology alone, as important as it is, cannot provide the major capacity increases which will be required in the years ahead. Such things as airport facilities, runway operation, and access are limiting factors which must be overcome.

While we do not agree with every specific recommendation of the study, we believe that many are worthwhile implementing and we hope the Committee will encourage the FAA to translate these into action programs as soon as possible. We are anxious to get under way, and look forward to working closely with FAA to apply some of the recommended solutions at individual airports.

Other House Actions:

With respect to other HOuse actions, I'd like to offer the following comments:

House Directive on Transportation System Acquisition Review Council:

The House has directed DOT to either abolish the Transportation System Acquisition Review Council (TSARC), or obtain specific statutory authority for its existence. We support this directive. We have been critical in the past of the slowness and complexity of the FAA procurement process, and the slowness of its decision making with respect to development activities. TSARC, and the administrative structure which it entails, seems to us an unnecessary complication to an already terribly complex procurement and development process; and we support the move to abolish TSARC, and we support any other measure that simplifies the procurement process.

In supporting the House directive, we continue to believe that DOT has a vital function to perform in setting broad policy and in performing work which pulls together related efforts of various transportation modes; but we don't believe that day-to-day management, approval of research and development projects of

operating administrations, and a detailed procurement review of modal administrations is useful activity.

Provision Prohibiting Implementation of Increased Aviation User Charges:

We support the general provision imposed by the House prohibiting the use of DOT/FAA funds to implement a program of increased aviation user charges. In the light of the review of the FAA system of charges which is likely to occur next year, the present incomplete state of the Cost Allocation Study, and the already high tax burden on aviation users, we believe this prohibition is appropriate.

FAA Proposed Delegation of Functions to State and Local Governments:

The House, in an effort to assure that the national air system not be fragmented by a multiplicity of state regulations, and an added layer of government administration at state level, directed FAA not to proceed with delegation of any of its present functions to state and local governments without prior explicit approval from the House Committee on Appropriation. We support this directive precisely for the reasons laid down by the House.

DETAILED COMMENTS OF THE SCHEDULED AIRLINES

FAA Operations

FAA's Operations budget is only slightly larger than the amount requested in FY-1974, less than would be accounted for by inflation. FAA asks for 1500 more people than FY-1975. About half of the 1500 people requested are air traffic controllers, and we strongly support that increase. The training pipeline for controllers must be kept continuously supplied with trainees in sufficient numbers to adequately man existing facilities and facilities being commissioned and at the same

time replace controllers lost through attrition. Controller training takes 18 months to two years; thus controllers being hired today will become effective some years hence. We must not let the controller force fluctuate as it has in the past with the attendant problems of overtime and loss in efficiency due to inadequate staffing.

We note that the House did not authorize the full increase of 1500 FAA personnel. We believe the reduction is unwarranted. The House action, we believe, was based on the view that there has been a significant reduction in air traffic operations. Our information indicates that such reductions have not been great.

Information recently received from FAA indicates that with respect to Center operations (i.e., the IFR aircraft handled by FAA Centers), total aircraft operations - in November 1973 were 1.63 million, and 1.78 million in December 1973. By May of 1974, the figure had risen to 2.02 million, actually higher than in May 1973 when the number was 2.01 million IFR aircraft handled.

Looking at aircraft operations at terminals, which may even be a better guide to total aircraft activity, there has been significant growth in the totals. While total operations declined in January of 1974 as compared to January of 1973, the total numbers have risen significantly since then. For example, General Aviation terminal operations have risen from 2.65 million in January 1974 to 3.75 million in April 1974.

Air carrier operations are also rising. From a low of 675,000 in February 1974, operations rose to 757,000 in April 1974. Examining total terminal operations for November 1973 to April 1974, the numbers dip below the equivalent months of 1973 only in January. By February the totals had risen to 4.14 million as against 4.03 million in 1973; and

for April 1974 total terminal operations had risen to 4.97 million as opposed to 4.73 million in April 1973.

This picture simply shows that traffic is on the rise, and that the House action, taken in the belief that operations were declining, does not reflect the actual situation. We therefore strongly urge that the full number of 1500 people requested be supported in the Senate.

However, FAA should simultaneously take all practical steps to increase the productivity of the controller force and slow the rapid rise in number of controllers. It is gratifying to note that there is a slight reduction in the number of controllers planned for the enroute system. This is the first indication of a saving in personnel that apparently can be attributed to automation and presumably increased productivity and we hope this trend will continue.

Somewhat less than half of the 1500 additional people proposed for Operations are technicians and others needed to service and maintain the growing system of FAA facilities. We hope that FAA will be able to take full advantage of the higher reliability of the facilities and equipment it is currently buying, and thereby eventually reduce the number of maintenance and support personnel.

In this connection, there are new techniques for maintaining facilities which require exploration and, where practical, implementation. We believe it would be wise for this committee to encourage the FAA to examine its maintenance policies in the broadest context to assure that the procurement of facilities, the manner of maintaining them and the arrangements for monitoring and repair, are the most modern possible -- and that FAA's maintenance processes, and staffing formulas are adjusted downward to take advantage of new techniques.

Another area which bears examination for possible savings in manpower is in the large number of people assigned to the twelve FAA Regions. We believe that the Regional concept currently in use, tied to the Federal Regions, may be artificial and wasteful in aviation context. We believe that an examination would be in order, with a goal of consolidation to perhaps 5 - 7 FAA Regions. Annual savings of $2 - $3 million might be possible.

Facilities and Equipment

We support FAA's request for $250 million for Facilities and Equipment. We understand that FAA expects to obligate $312 million in F&E funds in FY-1975. This would help reduce the large unobligated balances of previous years. We understand FAA expects to have $212 million unobligated at the end of FY-1975 vs. $262 million at the end of FY-1974.

We believe it would be a mistake to reduce the FAA F&E Budget below the $250 million statutory level at this time as recommended by the House. To the contrary, we believe that the budget should be raised in order to permit FAA to implement a series of terminal facilities which are identified below. We urge the Senate to restore the $8.9 million of F&E funds cut by the House and to increase the budget to permit a $23.4 million implementation program for new terminal aids.

A good percentage of this year's FAA budget is for the completion of the automation base and its extensions, and a general catch-up effort to improve; implement, and update facilities which are in many cases obsolete or no longer at peak productivity. We support particularly those facilities which have a direct impact on the reduction of air traffic control delays and provision of services in poor weather.

The new facilities, modernization of old facilities, and continuing automation programmed for the terminal area and enroute system are sorely needed if we are to continue to improve the safety and efficiency of the ATC system.

We want to highlight several elements of the F&E request as as particularly important; The expenditures proposed for enroute and terminal ATC facilities, including improvements to primary and secondary radar surveillance systems are particularly necessary.

The relocation of the New York Common IFR Room, which we understand is contained in FAA's FY-1975 program, represents a significant investment. We hope and assume that FAA, in proposing to expend $25 million for this program, can support a demonstrable increase in traffic movement efficiency. We believe it is necessary to demonstrate that, in addition to the needed modernization of the electronic facilities for the New York metropolitan area air traffic control system, that the relocation of the Common IFR Room can be justified on a realistic payback basis.

We also support the addition of primary radar tracking to ARTS III locations to imporve safety and reliability of the system. While primary radar tracking has inherent weaknesses, it is valuable for areas where significant numbers of non-transponder equipped aircraft are in the system.

Additional computer memory capacity and continuous data recording in the present ARTS III's is another worthwhile effort.

Funds to relocate and modernize towers, as well as modernization of displays and support equipment, appear justified. An adequate working environment for ATC per-

sonnel helps insure safety and efficiency of the ATC system.

The FY-1975 budget contains funds to commence modernization of Flight Service Stations in accordance with the plan developed by a joint FAA/OST Flight Service Station Evaluating Team. In view of the increasing costs of operating the present system, there is a need to improve the cost-effectiveness of Flight Service Stations.

We believe FAA's concept of a central processing facility and a series of manned hub stations, and a nationwide network of unmanned, pilot briefing terminals is an attractive alternative to the need to employ large numbers of people to meet the demands for increased service. To our knowledge this program is one of the first major efforts made by FAA to substantively reduce the numbers of personnel employed in the operation of the ATC system, and they should be commended for this initiative. It is our understanding that the budget request is directed at implementing the first phase of the multi-phase Flight Service Station modernization and automation plan. ATA supports the funds requested for this purpose as well as those requested in R, E&D which may be marked for development and testing of automated Flight Service Station.

The airlines continue to support FAA's efforts to establish the Centralized Flow Control concept and the need for a dedicated central computer, efficient communications nets between concerned ATC facilities, Central Flow Control and the users of the system. This program has been long delayed, a fact especially unfortunate since better traffic flow management would help us in our fuel conservation efforts. Local flow control programs at the ARTCC level also should be continued

and improved. There is, however, one particular area which we feel needs to be funded.

Landing aids help prevent accidents, and increase operational reliability. To foster safety and increased operational reliability through the provision of electronic vertical guidance at air carrier raunways, we believe additional ILS facilities should be added to the FAA FY-1975 program beyond those currently under contract, and beyond what we understand the FAA is proposing for procurement this year. We recommend 29 additional Category I ILS facilities for FY-1975 procurement (total cost approximately $10.15 million). We also recommend that 11 additional existing ILS facilities be upgraded from Category I to Category II, and two ILS's be upgraded to Category III (approximate cost of $3.3 million and $740,000 respectively). (Proposed locations are contained in Attachemnt A.)

While we support more ILS service, and, in a later part of my testimony will speak in support of the orderly development of MLS, the Microwave Landing System; we vigorously oppose any expenditure of Federal funds for the so-called Interim MLS which we believe would be counter-productive to efforts to produce better landing guidance for all users.

Airlines believe that Distance Measuring Equipment (DME's) located at airports can provide significant improvement in speed and power management during approaches by all aircraft, and, in effect, result in reduced fuel consumption as well as provide improved operational transition between the enroute and terminal area. We recommend 35 low-cost DME facilities be added to the FY-1975 procurement at

a total cost of $1.6 million. (Location as shown in Attachment A.)

It is also recommended that two VOR's with associated DME's be procured and installed at Haines, Alaska and Alamogordo, New Mexico ($1.97 million). As one of the means to help reduce approach accidents, the airlines have long urged installation of Visual Approach Slope Indicators, VASI's. For this year the airlines propose implementation of 195 VASI's for a total cost of $5.6 million. The proposed distribution is given in Attachment A. In sum, we propose an additional $23.4 million for new landing aids.

The Procurement Process

As have many other observers in our industry, we have long been critical of the FAA procurement process, and have been concerned about the precipitous rise in the costs of ATC facilities, far beyond any increases which might be attributable to inflation. We note with pleasure that the Administrator, mindful of this problem, has undertaken a review of the FAA procurement process. We strongly support this effort, and look toward a meaningful improvement in the way FAA procures its facilities.

Several points deserve mention in this connection:

The FAA procurement process is highly complex, comprising many steps. The time for processing procurement requests appears to us to be entirely out of proportion to the work needed.

FAA's streamlining effort should look at the additional complication of a DOT-level procurement review process which requires a great deal of paper work, and adds yet a new

layer of administration on top of an already complex process. We urge a critical review of this difficulty.

Very similar procurement processes are used for procurement of facilities and procurement of R&D services. We believe the two are very different and deserve entirely different treatment. Flexibility and engineering judgement must play a major role in R&D contracts -- far greater than now seems possible in FAA's system.

While FAA, in recent years has turned to the "turnkey" procurement process for some of its purchases, we think further simplification of this process would permit use of fewer FAA people, and permit payment of contractors after final demonstration of adequate performance of the service or facility bought.

The House, in its discussion of the DOT and FAA Budget, noted that the Office of the Secretary should not be involved in the day-to-day management and approval of the research and development projects of the operating administrations and directed the Department to either abolish the Transportation System Acquisition Review Council (TSARC) or obtain specific statutory authority for its existence. We believe the TSARC and the concomitant procurement review is an unnecessary burden to an already highly complex procurement process. We support the House action to eliminate TSARC or to change its character. In doing so, we do not mean in any sense to undercut the Department's responsibilities for the establishment of broad policy and the coordination

of intermodal activities, but we believe this particular organization and the detailed procurement review is not productive and can well be done away with.

Grants-In-Aid to Airports

It's our understanding that FAA expects to obligate $325 million in FY-1975, including $15 million for airport planning grants, using a liquidating authority of $280 million. We support the funding for airport aid, but believe that no funds are needed this year for planning grants. Thus we believe a $13,000,000 saving can be realized, and support the House action.

National Capital Airports

Of the $7.2 million requested for construction at the National Capital Airports, the $3 million designated for enlargement of the jet ramp at Dulles was deleted by the Committee on Appropriations of the House. The Air Transport Association strongly recommends that the $3 million be restored so expansion of the jet ramp can be accomplished.

Dulles is a modern airport; however, wingspan and length of aircraft such as the 747 now utilizing the airport was not considered in the original design. The 747 traffic has now increased at Dulles to the point that future growth must be limited, for safety reasons, if this project is not completed. Congress recognized the need for an expansion of the jet ramp in FY-1973 but funds for construction were not made available. We strongly urge that no further delay be incurred and that the $3 million requested in the FY-1975 budget be restored.

Technical Adjustment on ADAP Funding

When the Airport and Airways Act of 1970 was passed, $50 million of appropriated funds which had been held back by OMB were available for obligation for airport development on FAA's books. The FAA has used these funds as liquidating cash and consequently has not asked for $50 million liquidating cash from the Trust Fund. This action added $50 million to the Trust Fund surplus. It would be proper to appropriate out of the Trust Fund an additional $50 million to remain available until expended for airport purposes in order to maintain the airport development program at the level envisioned in the original concept.

Considerable airport development has been accomplished under ADAP, however, a vast amount remains to be done. The industry needs this $50 million to apply to known and future airport development projects.

We think that the committee should also be aware that actions by OMB, FAA, and the Congress in FY-71, '73, and '74 have resulted in denying $194 million in obligational authority to the Airport Development Aid program thus far, and we hope that Congress will take this into account when reviewing the program. It would be appropriate for the Congress to extend this obligational authority through at least FY-78 to insure an airport development program of the magnitude envisioned by Congress and industry.

Airport R, E&D

An R, E&D item discussed in another portion of this testimony bears emphasis here: Over 50% of ADAP funds

are utilized annually for airport pavement construction and restoration. We believe an accurate and rapid means to assess foundation conditions must be developed as the necessary first step in the evolution of a reliable pavement design method. A relatively low level and seemingly very slow engineering effort is under way to deal with this problem. We believe that additional emphasis is needed on the development of adequate test equipment and procedures to assure that future airport runways will be able to withstand the loads of present and future aircraft. We urge a speeding-up of this engineering effort.

Facilities, Engineering and Development

We recognize that this is a new category of research and development dealing predominantly with such matters as aircraft safety, environment, aviation medicine, aircraft, and related equipement. As we've testified before, we think it would be simpler if all Research, Engineering and Development items were covered within a single appropriation.

FAA Airport Capacity Study

Before commenting on FAA's Research, Engineering and Development proposals, I wish to comment on the FAA study entitled, "FAA Report on Airport Capacity" which was undertaken at the direction of the House Appropriations Committee in mid-1973. This is a good study, and will be useful if its broad recommendations are promptly implemented. We have considered our view of the study which has been submitted to Congress, and other information available to us. Our comment

on behalf of the scheduled air carriers is given in an attachment to this testimony (Attachment B).

We are aware that the House used the "FAA Report on Airport Capacity" as a basis for a reduction in the FAA R, E&D Budget. We do not share the view of the House on this matter. The House Committee felt that for the most part the problems cited by the Report are not technological ones which require a large amount of research. We view the FAA Report as a sober appraisal of the situation as it is, but view it not as a signal to reduce FAA's Research, Engineering and Development efforts, but rather as an incentive to change the priority order of developments and to press hard, perhaps even harder than before, on those elements of FAA's program which offer best promise of alleviating the problems identified.

We thus believe it would be a serious mistake to cut FAA's R, E&D Budget at this time. Instead, we believe that the full amount should be authorized but with an admonition that priority be given to those elements which offer promise of early and successful payoff. Our view of what these are is included in our just-completed report and recommendations which we are including as Attachment B to this testimony.

In heavily briefed-down form, the views of the scheduled airlines on the FAA Report on Airport Capacity are as follows:

The airlines view this report as a good effort to appraise the problems and prospects of achieving increased airport capacity. While the report's specific suggestions for individual airports are subject to much debate and no doubt open to different approaches; while it overstates the promise of certain solutions and understates the significance of certain problems; it is a good indicator of the limitations on ATC system and airport capacity. The report correctly states that electronic technology alone, as important as it is, cannot offer major capacity increases, and identifies the real limitations.

The report may still be optimistic; however, in the view of the airlines, on the capacity increases achievable from its proposals, and its assertion that FAA's efforts can delay airside capacity limitations for a decade. Nonetheless, many of the remedies proposed, especially those on airside improvements, should be vigorously pressed to achieve their best results at the earliest possible time.

The fact that the anticipated system capacity increases are lower than had been hoped should not be a signal to attach FAA's efforts or to reduce its resources; to the contrary, it should be used to spur FAA to redouble its efforts to achieve maximum early results from its current efforts, and to renew its search for larger overall system capacity increase potential through new initiatives.

If the demand for air transportation continues to grow and airport access limitations or air traffic limitations become real obstacles, government and industry must work together to assure that the growth of the air transportation system will not be stifled.

More Unified Action by R, E&D and Operations

The report points up once again a long outstanding need -- for better coordination between FAA's Research, Engineering and Development effort, and the implementation of the resulting facilities and procedures which must be made by the Operating elements of FAA's organizaton. This seeming lack of connection between R, E&D and timely acceptance and implementation of its products remains an important concern. Better coupling is required between Operations and Development if useful results are to be obtained. We believe that Operations functions and the Engineering functions of FAA must work far more closely than in the past to assure that expensive development efforts will indeed be acceptable, and accepted, into the operating system.

The report points the way toward a number of actions which do have an important impact in the near term, and we support those actions. Particularly, the report recommends an F&E program to increase the IFR capacity at a number of our major airports to bring it more nearly in line with the VFR capacity of those same airports. We have not been able to find within FAA's F&E proposals for FY-1975 whether the F&E program which would produce increased IFR/VFR capacity ratio has been included. We urge the Congress to ask FAA to undertake that effort as a matter of high priority.

Research, Engineering, and Development

FAA proposes to utilize $70 million for research, engineering, and development; and expects to increase the paid employment for R, E&D from 686 in FY-1974 to 1032 in FY-1975, a significant rise.

A peculiarity of the funding should be mentioned here. We understand that the total funding for engineering and development activity is actually to be less -- by approximately $30 million -- in FY-1975 than in FY-1974. In several previous years approximately $40 million was transferred from the F&E budget to E&D. This year we gather than only $10 million is to be transferred in like manner. Thus, including the amount under Facilities, Engineering and Development, the total E&D effort this year is to be on the order of $90 million as opposed to approximately $120 million in the past several years. We believe this is a just-adequate Engineering and Development budget, and we caution against further cuts. We strongly urge this Committee to restore $15 million cut by the House, for the reasons cited under my comments on the Airport Capacity Study.

Reexamination of FAA's R, E&D Priorities

We believe FAA's Egnineering and Development program requires reexamination to set new priorities, as a result of FAA's own examination of the need to produce major capacity and

productivity increases and to produce meaningful reductions in the delays which have become more and more costly as fuel costs have risen. The scheduled airlines have undertaken such an examination of the E&D program and have developed a set of priorities for Engineering and Development we feel responds to the needs of the country and the air carriers.

Attachment B to my statement is an ATA report entitled, "Airport/ATC System Improvement Prospects and Recommendations on FAA Development Priorities." The report is in several parts. It includes our own airline assessment of FAA's Airport Capacity Study. It includes our view of the current situation in FAA Engineering and Development which, in our view, is sobering; and it describes what we believe to be a basis for more responsive Research, Engineering and Development priorities. Finally, the report lists and comments on a series of 19 priority areas in which Research, Engineering and Development activities should be pressed now.

We believe that our report and our priority recommendations represent a meaningful and viable approach for FAA to take to achieve a higher output from its R, E&D effort. In strongly recommending restoration of the $15 million for R, E&D cut by the House, we urge the Senate to consider the priorities we have noted to guide FAA to work in the areas we consider to have highest promise.

I wish to call particular attention to recommendation 13 (Page 21 of Attachment B) which deals with the establishment of a better system of measuring the performance of FAA's system. Here, as in other areas, there is a need for combined effort by the Operations and Engineering organizations of FAA. The present method of measuring delays and establishing the actual performance of the system leaves much to be desired. It is in the interest of the users as well as the Congress to urge FAA to establish a measurement of delays, and thereby a measurement of the performance of its system, significantly better than the

one in use today, which we believe distorts the actual performance situation. We recommend that the Committee ask FAA to pursue this matter vigorously.

Conclusions on FAA R, E&D Effort

It can be inferred from our report on the R, E&D program that there has been less progress in the past four years in the attainment of goals set forth by FAA and DOT Air Traffic Control Advisory Committee report than we might have hoped. While FAA has initiated an R, E&D effort which should yield useful results, there are now strong indications that attainment of the goals set forth by FAA and the DOT Air Traffic Control Committee in 1969 will be long and hard to achieve, and may not be attainable to anything like the measure hoped for. However, positive and tangible improvements have been realized in safety and efficiency, and groundwork has been laid and the base for real ATC automation is getting far along. It remains now to capitalize on these efforts.

Even a strong R, E&D effort is not sufficient unless it is supported both in planning and execution by the FAA Operating Services and facilities planners.

Assurances to users of tangible benefit from expenditures of system improvement dollars are important. There is a need for a system improvement plan which represents FAA-wide agreement, and which carries a commitment that system capacity, productivity, or efficiency will actually increase if particular developments are technologically successful, and implemented.

LORAN-C

Last year we found ourselves having to oppose the Administration's proposals in the U. S. Coast Guard;s Budget to initiate a phasing down of LORAN-A naviation facilities. This year we are pleased to support the Government's budget submission which includes funds for continued operation of all USCG funded and operated LORAN-A facilities through FY-1975.

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We also have no objection to the budget request of $16,900,000 for LORAN-C improvements on the West Coast of the U. S. which we understand is primarily to serve civilian maritime interests. It should be noted that the airlines' requirement for long-distance navigation service is quite similar to that expressed by the Department of Defense in that we advocate continued operation of LORAN-A until it can be replaced by an alternative that will provide worldwide coverage; OMEGA is the preeminent candidate. LORAN-C is not a candidate for providing worldwide coverage for aviation users since it cannot be as cost-effective as OMEGA for this purpose.

ATTACHMENT A

RECOMMENDED ADDITIONAL FACILITY PROCUREMENTS

CATEGORY I INSTRUMENT LANDING SYSTEMS (ILS)

29 Category I ILS with Approach Lights at approximately $350,000 each ..... $10.15 million

LOCATIONS	RUNWAY	REMARKS
ALABAMA		
Gadsden	6	
ALASKA		
Petersburg	22	with DME
Wrangell	9	with DME
ARKANSAS		
El Dorado	22	
CALIFORNIA		
Paso Robles	19	
COLORADO		
Durango	2	
ILLINOIS		
Chicago (Midway)	31L	add Approach Light System with Sequence Flasher Lights - Cat. I (ALSF-1)

LOCATIONS	RUNWAY	REMARKS
IOWA		
Ft. Dodge	6	
KANSAS		
Manhattan	3	
LOUISIANA		
Lafayette	21	Relocate
MAINE		
Bangor	15	
Portland	29	
MISSISSIPPI		
Columbus	18	add Medium Intensity Approach Lighting System with Runway Alignment Lights (MALSR)
MONTANA		
Butte	15	
NEBRASKA		
Kearney	36	
North Platte	12	
NEW JERSEY		
Newark	22R	
NEW MEXICO		
Farmington	25	
NEW YORK		
Syracuse	10	
NORTH CAROLINA		
Jacksonville	5	
OREGON		
Corvallis	17	
PENNSYLVANIA		
Philadelphia	9L	
Wilkes Barre	22	
SOUTH DAKOTA		
Yankton	31	
TENNESSEE		
Clarksville	34	

LOCATIONS	RUNWAY	REMARKS
VIRGINIA		
Danville	2	
WASHINGTON		
Spokane	3	
Wenatchee	29	
WYOMING		
Riverton	28	

UPGRADE ILS TO CATEGORY II ALL-WEATHER CAPABILITY

11 Runways upgraded to Category II All Weather capability at approximately $300,000 each ..... $3.3 million

LOCATIONS	RUNWAY
FLORIDA	
Orlando (McCoy)	36R
ILLINOIS	
Chicago (O'Hare)	9R
Peoria	30
IOWA	
Cedar Rapids	8
KANSAS	
Wichita	1R
MICHIGAN	
Grand Rapids	26
NEBRASKA	
Omaha	14R
NEW YORK	
New York (JFK)	22L
NORTH CAROLINA	
Asheville	16
OHIO	
Akron/Canton	1
PENNSYLVANIA	
Allentown	6

UPGRADE ILS TO CATEGORY III ALL WEATHER CAPABILITY

2 Runways upgraded to Category III All Weather capability at approximately $370,000 each $740,000

LOCATIONS	RUNWAY
OHIO	
Cincinnati (Covington, Ky.)	36
PENNSYLVANIA	
Philadelphia	9R

ESTABLISH DISTANCE MEASURING EQUIPMENT (DME)

35 DME (only) Systems at existing ILS/VOR Facilities at approximately $45,000 each ..... $1.575 million

LOCATION	ADD TO FACILITY BELOW
ARIZONA	
Flagstaff	VOR
Phoenix	ILS 8R
Tucson	ILS 12L
ARKANSAS	
Little Rock	ILS 4
CALIFORNIA	
Ontario	ILS 25
Redding	VOR
CONNECTICUT	
Windsor Locks	ILS 6
GEORGIA	
Atlanta (Hartsfield)	ILS 9R
HAWAII	
Kamuela	VOR
IDAHO	
Idaho Falls	VOR
Lewiston	VOR
KENTUCKY	
Louisville (Standiford)	ILS 1
LOUISIANA	
New Orleans (International)	ILS 10

LOCATION	ADD TO FACILITY BELOW
MISSOURI	
Cape Girardeau	VOR
Columbia	ILS 2
MISSISSIPPI	
Greenville	VOR
MONTANA	
Kalispell	VOR
NEW YORK	
New York (J. F. Kennedy)	ILS 22L
NORTH CAROLINA	
Fayetteville	VOR
Hickory	VOR
OKLAHOMA	
Tulsa	ILS 35R
PENNSYLVANIA	
Wilkes-Barre	ILS 4
SOUTH DAKOTA	
Mitchell	VOR
TENNESSEE	
Clarksville	VOR
TEXAS	
Dallas/Ft. Worth (DFW)	ILS 17L
El Paso (International)	ILS 22
Houston (International)	ILS 8
UTAH	
Cedar City	VOR
VIRGINIA	
Danville	VOR
VIRGIN ISLANDS	
St. Thomas	VOR

LOCATION	ADD TO FACILITY BELOW
WASHINGTON	
Pasco	VOR
Pullman/Moscow	VOR
Walla Walla	VOR
WISCONSIN	
Milwaukee (Mitchell)	ILS 1
WYOMING	
Worland	VOR

ESTABLISH VERY HIGH FREQUENCY OMNIRANGE WITH

DISTANCE MEASURING EQUIPMENT (VOR/DME)

2 VOR/DME's at approximately $486,000 each ..... $1.972 million

LOCATIONS

ALASKA

Haines

NEW MEXICO

Alamogordo

VISUAL APPROACH SLOPE INDICATORS (VASI's)

170 4-Box VASI's at approximately $25,000 each	$4.25 million
46 6-Box VASI's at approximately $30,000 each	$1.38 million
Total ..	$5.63 million

* 3-Bar 6-Box VASI's

LOCATIONS	RUNWAY
ALABAMA	
Dothan	13
ALASKA	
Aniak	10
Cordova	27
Ketchikan	-- Both ends
Nome	2
	20
Petersburg	-- Both ends
St. Mary's	16
	34

LOCATIONS	RUNWAY
ARIZONA	
Phoenix	8L*
	26R*
Tucson	21*
Grand Canyon	3
ARKANSAS	
Texarkana	4
Hot Springs	23
CALIFORNIA	
Los Angeles	6R*
Palm Springs	12*
Fresno	11L
Monterey	28
Ontario	7*
Santa Barbara	25
Oakland	11*
San Jose	12R
Santa Ana	1L
Bakersfield	12L
Stockton	11L
Burbank	15 and 33
Santa Maria	30
San Francisco	10L and 10R
COLORADO	
Colorado Springs	17 and 12
Grand Junction	29
CONNECTICUT	
Windsor Locks	15*
Bridgeport	24
New Haven	20
DELAWARE	
Wilmington	27
FLORIDA	
Miami	12*
West Palm Beach	27*
Pensacola	7 and 25
Tampa	18R
Panama City	32
HAWAII	
Molokai	5
Kahului	23 and 5
Kamuela	22
Lanai	21 and 3
Honolulu	26
Lihue	21

LOCATIONS	RUNWAY
IDAHO	
Boise	10L and 28R
Idaho Falls	3
Pocatello	3
Lewiston	8
Twin Falls	7
ILLINOIS	
Chicago O'Hare	4L* and 9L*
Moline	27
Rockford	18
Peoria	12
Champaign	13
Quincy	21
Decatur	24
Bloomington	11
Mount Vernon	5
Springfield	22
INDIANA	
Indianapolis	13R* and 22R*
Fort Wayne	22
IOWA	
Des Moines	12L and 5 and 23
Cedar Rapids	26
Sioux City	17 and 35
Dubuque	13
Burlington	18
Clinton	21
Mason City	17
Ottumwa	13
Waterloo	30, 18, 36
Fort Dodge	24
KANSAS	
Wichita	1L, 14, and 32
Topeka	13
Salina	12 and 30
Manhattan	21
KENTUCKY	
Louisville	11*
LOUISIANA	
New Orleans	28* and 19*
Baton Rouge	4 and 22
Lafayette	10
Monroe	22
MAINE	
Portland	18 and 36
MASSACHUSETTS	
Boston	22L*, 27*, and 4R

LOCATIONS	RUNWAY
MICHIGAN	
Detroit	3R* and 21L*
Muskegon	5
Saginaw	23
Lansing	9
Flint	36 and 27
Escanaba	27
Lansing	6 and 24
Traverse City	10
MINNESOTA	
Minneapolis	11L*
Bemidji	13
MISSISSIPPI	
Jackson	15R*
Greenville	35R*
MISSOURI	
St. Louis	6* and 12L
Joplin	31
Springfield	19, 13, and 31
Cape Girardeau	28
Columbia	20
Kaiser	3 and 21
MONTANA	
Billings	27, 16, and 34
Great Falls	21 and 16
NEBRASKA	
Omaha	17* and 35*
Lincoln	14 and 32
Scottsbluff	12
Grand Island	17
NEVADA	
Las Vegas	19L
Reno	25
Las Vegas	7 and 1R
NEW HAMPSHIRE	
Lebanon	25

LOCATIONS	RUNWAY
NEW JERSEY	
Newark	29* and 22R*
NEW MEXICO	
Albuquerque	26
NEW YORK	
Syracuse	14*
Albany	1 and 28*
Binghampton	28
Jamestown	7
NORTH CAROLINA	
Greensboro	5 and 32
Charlotte	36R
Rocky Mount/Wilson	22
OHIO	
Akron	5, 14, and 32
Cleveland	18R* and 36L*
Dayton	24R* and 36*
Youngstown	14
Columbus	10R* and 28R*
OKLAHOMA	
Oklahoma City	35L*
Tulsa	26
OREGON	
Portland	10L* and 28R*
Eugene	34
Medford	32
Pendleton	7L
Klamath Falls	14
Salem	13
PENNSYLVANIA	
Pittsburgh	5, 14, and 10R
Philadelphia	35
Allentown	31
RHODE ISLAND	
Providence	23L

LOCATIONS	RUNWAY
SOUTH CAROLINA	
Columbia	29
Greer	21
TEXAS	
El Paso	26*
Houston	26* and 32*
San Antonio	21*
Lubbock	26, 35L and *
Beaumont	29
Midland	34L
Waco	14
Harlingen	13 and 35L
VIRGINIA	
Newport News	24
Richmond	2 and 24
Roanoke	5
WASHINGTON	
Seattle	24L*
Yakima	9
Pasco	2L
Walla Walla	2
WEST VIRGINIA	
Clarksburg	3 and 21
Charleston	5
Parkersburg	21
WISCONSIN	
Milwaukee	25L*
Madison	18, 13, and 31
Oshkosh	18
LaCrosse	36
Green Bay	24L

Introduction and Scope

As FAA's Research, Engineering and Development activity has grown since the completion of the DOT Air Traffic Control Advisory Committee work in 1969 and the passage of the Airport/Airway Development Act of 1970, the scheduled airlines have attempted to understand the program and offer constructive recommendations with respect to it.

This report is a consolidation and updating of airline views on FAA's efforts. It contains an analysis of the current situation with respect to the FAA Air Traffic Control and Airport system and an appraisal of FAA's own recent studies on what may be expected from its efforts. It concludes with a series of recommendations on Research, Engineering and Development activities which, in the view of the airlines, deserve highest priority and offer reasonable prospect for successful implementation and useable system improvement.

Summary

FAA's studies of airport capacity and the relationship of its Airport/Air Traffic Control system E&D program to prospective improvement show that air traffic control and airport capacity improvements to be expected from FAA's programs are far lower than had been hoped in optimistic appraisals made only three or four years ago.

While there are limited but important prospects for improvement evident from FAA's studies, they show that electronic technology alone, important as it is, cannot offer major capacity increases. Landside problems (parking, airport access, passenger transfer) are likely to become the controlling restriction at nearly all busy airports within the next decade.

FAA's own analysis, sober as it is, may still be optimistic on the capacity increases achievable from its projects; nevertheless, many of the recommendations proposed, especially on airside improvements, should be vigorously pressed to achieve their best results.

The fact that anticipated system capacity increases are far lower than had been hoped should not be a signal to attack FAA efforts; to the contrary, it should be used to spur FAA to redouble its efforts to achieve early, optimum results from its current work; to reduce the cost of new facilities through improvement of its procurement processes; and to renew its search for larger capacity increase potential through new initiatives. The recent assessment of prospects should spur FAA to vigorously attack the problem of the manpower-intensive nature of the Air Traffic Control and airport system.

Users, especially airlines, directly and indirectly pay for a large part of the FAA system - both ground and air. Thus, in assessing FAA's efforts and in recommending E&D work, airlines must insist that the real prospective payback for new systems, in terms of safety, ATC capacity and productivity, and cost savings to offset expenditures, must be considered in formulating new programs.

FAA's conclusion in the Airport Capacity Study that most needed capacity increases will have to come from airport improve-

ments also places a heavy burden on airlines. Every effort must be made to exploit improvements which do not require more concrete and its ancillaries.

In the light of the assessment, a series of airline recommendations for FAA Research, Engineering and Development activities are set out which deserve highest priority. The recommendations boil down to:

- restoration of airport capacity lost by a variety of factors such as wake turbulence and noise restrictions;
- provision of better, more reliable information to air traffic controllers;
- a program to achieve optimum utility from our existing airports;
- a completion of development of the base for meaningful air traffic control automation; and
- efforts to achieve a reduction in the manpower-intensiveness and cost of the FAA system, both in air traffic control and the maintenance of FAA's facilities.

Airline Assessment of FAA's Report on Airport Capacity

Background of FAA Airport Capacity Study, FAA Report EM-74-5, December 1973

The study conducted by FAA in response to the request by the House Appropriations Committee in June 1973 grew out of Congressional concern that there was no clear indication of what results might be expected from FAA's development and facility implementation programs to produce needed airport and air traffic control capacity at major terminals. FAA chose to conduct its study in the context of eight major airports as indicative of the dimensions of the overall airport capacity problem. The study is a highly workmanlike job and represents, in our view, a clear and objective apprisal of the present situation and prospects for the future.

It may be argued that the problem of airport/ATC capacity has receded as a result of the energy crisis and its resulting flight cutbacks, and as a result of the introduction of wide body jets. We tend to agree with the view taken in the Preface of the FAA Report, that demand during problem peak hours at major airports is not likely to recede, and that growth even at a relatively low rate may be expected to sustain the demand for additional airport/air traffic control capacity and reduced delays. Even assuming a zero growth rate, the impact of delays -- serious today -- assumes a new dimension as fuel costs and direct operating costs go up. Thus, while a few of the study's conclusions or estimates may slip a year or two, the basic conclusions are expected to remain valid.

FAA's Findings

An excellent summary of FAA's findings as contained in the FAA Report on Airport Capacity, is briefed in FAA's just published

"Overview of the FAA Engineering and Development Programs with Highlights of Fiscal Years 1974 - 1975" (Attachment 1). The following is a further boiled-down precis of FAA's findings:

The study deals with a broad range of problems which impact on airport/ATC capacity. It recognizes that airport "landside" will become the ultimate source of congestion, and restriction to further growth, in the early 1980's at nearly all of the airports studied given full implementation of the FAA E&D program. The "landside" system is defined as the combination of terminal buildings and aircraft boarding areas, on-airport access and parking, and the off-airport access system. The major ultimate limitation at the surveyed airports appears to be in their access/egress capability.

With respect to attainable airport air traffic ("airside") capacity improvements, the report is sobering. The study indicates that, with an active program to institute terminal ATC improvements, saturation of the airside can be postponed a decade -- into the mid- to late 1980's. Contrary to the enthusiastic predictions of both government and independent study groups only three or four years ago, that from three to nine times system capacity might be achievable by a variety of improvements, the study indicates far less can be realistically anticipated.

Airport/ATC capacity at the major airports today is significantly below what it was three or four years ago, primarily because of restrictions from noise and wake turbulence effects.

The study concludes that work under way might, under VFR (good visibility) conditions, bring median capacity increases of up to 28%, while under IFR (poor visibility) conditions, improvements of up to 52% might be anticipated. FAA sees the following changes in major airport operations in the next ten years, and is gearing its R, E&D efforts in these directions:

Reduction in minimum longitudinal spacing from 3 miles to 2 miles, with variable spacing for wake turbulence under some meteorological conditions.

Improved delivery accuracy ± 40 seconds (2σ) inter-arrival to ± 10 seconds.

Reduced lateral spacing from 5000' to 3500' with present sensors and ARTS III, then to 2500' with DABS and MLS.

Frequent use of "dual-lane" runways.

Curved approaches and departures via MLS for noise abatement.

Semi-automated surface traffic control.

Overall IFR operations rate increases of 52% over today when all improvements are in place.

The airport/ATC capacity improvements must be matched by ground support in optimized runway/taxiway configurations;

provision of adequate passenger facilities, gates; and much improved airport access/egress.

The study identifies the equalization of airport capacity under visual (VFR) conditions and IFR conditions as a major goal and offers a program to achieve it. Major delays occur under IFR conditions, and a number of the improvements proposed would improve the ratio of VFR to IFR capacity.

Major capacity increases apparently can only result from addition of new airports and runways, major access improvements, and perhaps in the longer term, aircraft which operate on existing airports independently from the existing traffic without requiring much airport real estate.

The report concludes that the R, E&D areas with highest priority and most promise of capacity improvement are wake vortex avoidance, and the consequent reduction in final approach spacing; and metering-and-spacing of airport traffic.

The report notes that reduction of gate delays through gate sharing, provision of more gates, and use of passenger transporter concepts such as mobile lounges or buses is promising, and that re-distribution of demand through quotas and rescheduling would help in short-term delay reduction. (ATA Note: These are difficult areas and involve competitive pressures and preferences, and are highly dependent on conditions at particular airports.)

The report identifies "landside" as distinct from "airside" as the potential limitation of the system in the period addressed, and points to the need for government and industry initiatives to focus attention on the solution of that part of the problem.

Airline Assessment of the Study

The following assessment is based on the national aspects of the FAA study. The solutions offered for specific airports will be dealt with at the airline-ATA/FAA local level. There will be many variables, many views and many local circumstances and preferences to consider at the specific airport level. However, such local differences do not significantly affect the validity of the overall national conclusions.

Even though the airport capacity gains projected by FAA as a result of its Engineering and Development and Facilities and Equipment programs are modest -- less than 52% over today even in the "long term" -- and far less than previous estimates, they may yet be optimistic.

In our opinion, the largest predicted potential gain (31%) which is to come from a reduction in IFR longitudinal spacing on approach -- from 3 to 2 miles is highly desirable yet unlikely to be achieved by the program FAA postulates. The beneficial effects on capacity of several other remedies -- weather alternate routings, two-segment approaches, and common departures and speeds -- also appear optimistic.

The report understates three important problems: Since it concentrates on delays over 30 minutes, it paints a far

brighter picture than is warranted. Airlines have long pressed for a more meaningful real-time assessment of the FAA system's performance; but little has been done to get to a better measurement. In the light of scheduled airline delay costs which have been estimated at $7 - $8 million/month, a better than 30-minute delay measuring system is needed, and its lack distorts the report's findings. FAA itself has estimated that its measuring system accounts for less than 50% of actual delays.

The report attributes many if not most delays to factors other than ATC capacity. In doing so it does not state strongly enough that certain costly delays are the consequence of inadequate system capacity to handle loads which accrue after periods of bad weather.

The report asserts that FAA's programs can delay "airside" saturation for a decade or more. Considering that there is IFR saturation today at several major airports, and that a number of enroute and transition feeding sectors are saturated now, this conclusion does not seem supportable, especially in view of the small gains to be expected from FAA's programs.

The report overstates the benefits of the two-segment approach, especially since such procedures are unlikely to be accepted for safety reasons if they are applicable only during VFR; and it overstates the near-term possibilities of achieving noise relief by meeting FAR Part 36 noise standards.

In spite of the optimism on results, the report properly identifies a number of common national problems, pinpoints prospective improvements which require engineering and development activity, and recommends an implementation program of existing types of aids to improve the situation. Most of these deserve support, even though the prospective gains are less than anticipated.

A significant and valuable part of the report deals with the program to increase the IFR/VFR capacity ratio. FAA should be encouraged to implement these remedies rapidly where a net benefit accrues in terms of delay reduction vs. cost of the remedies.

By showing that implementation of all projected improvements can produce only a relatively small improvement of capacity, the study should provide FAA with impetus to search for the larger capacity increases which will undoubtedly be needed as aviation grows. It is this impetus which should be supported, rather than any view which would downgrade FAA's on-going efforts because of smaller than anticipated prospective gains.

FAA R, E&D Efforts

The report identifies a series of engineering and development efforts. Many of these deserve high priority pursuit and

airline support, assuming that the operating elements of FAA assure that the projected benefits will actually accrue from implementation of the new services and facilities.

Airport Improvement

With respect to on-airport improvements, gate sharing, addition of gates, use of transporters, and schedule redistribution, local situations and competitive relationships in a free economy have a strong influence. The individual airport studies conducted by FAA which have led to the National Summary deserve careful study and consideration. These studies show clearly that each airport represents its own problems, and local solutions are influenced by many factors. It would be appropriate for FAA and airline users to work with the local airport authorities to consider implementation of the individual recommendations.

Airport Access/Egress

A highly significant part of the study relates to the problem of airport access/egress. Much of this work rests on shoulders other than FAA's. It is essential that the DOT, in its capacity as catalyst for coordination of requirements between transportation modes, assure that responsible agencies of government, particularly those concerned with mass transit and highway planning, become aware of the close relationships and impact of adequate airport access/egress to achieve system capacity, and undertake to define clearly the improvements which are possible to assure orderly and sensible growth of aviation services for the public which demands them.

Gate Sharing

As is true in any other pooling arrangement, gate sharing is limited by the flexibility of the physical equipment and procedural changes necessary in passenger processing functions. Because of these limitations, gate sharing should be looked at as a long range improvement potential, at best.

Mobile Lounge or Transporter Operations

The generalized statement that transporter operations have a much higher gate utilization and passenger throughput than conventional boarding gates is subject to debate. The relative efficiency of this concept relies on the type of traffic serving a facility, the present terminal and airfield configurations and airport expansion needs.

Mobile lounges or transporters are a means of satisfying demand particularly during peak periods and are currently in use at airports where there is a deficiency in gates or an inability for some gates to accommodate wide-bodied aircraft. They are

also used as a temporary expedient pending implementation of an improvement program.

The application of mobile lounges to serve wide-body aircraft parked at remote cargo areas to relieve gate demand and cargo traffic congestion appears, at best, an even trade-off. Mobile lounges and portable aircraft servicing equipment will place additional traffic on the airfield surfaces. Furthermore, the efficiency of such a system largely depends upon the location of the hardstand (cargo or otherwise) relative to gate location.

Landside Capacity

The report indicates that ground access/egress could be a limitation insofar as the ability of a specific airport accommodating a forecasted demand. In the long term the report suggests solutions such as off-airport processing or diversion to "short haul." Barring such radical relief efforts, the report indicates that new airports would have to be established. Off-airport processing is not really radical in nature. Some such facilities, like San Francisco, are still in operation, but others such as Washington, D. C. and the West Side terminal in New York have been closed down for economic reasons. The "short haul" system remains to be defined, and relief in terms of capacity increases and delay reduction defined.

The report points out that the Planning Grant Program (PGP) provides funds for access planning use, part of an overall airport master planning project. Since its inception in 1970, the PGP has had little impact on improving airport access. While planning and funding have been serious problems, the major constraint so far has been the lack of leadership at the Federal level. Hopefully the DOT Interagency Task Force will define the Federal role and provide the missing leadership.

The report asks sponsors to investigate the potentials and problems of airline use of cargo transport devices for the loading and unloading of wide-bodied aircrafts. The solution of cargo handling problems must rest with individual airlines, but traffic problems in the apron area are already serious without planning for additional traffic. The airline industry has continually worked towards improving passengers and baggage handling, but implementation programs must be weighed against costs.

Flight Scheduling

With respect to the difficult question of schedule redistribution to avoid "peaking," the report properly recognizes that flight scheduling is a complex problem, and is not amenable to simplistic answers.

Some of the factors which affect flight schedules, and which validate this statement are flight distance; time zone differences; aircraft utilization; maintenance scheduling needs; passenger and cargo connections; international multilateral and bilateral commitments; nature of operating authority; adequacy of passenger and cargo facilities; crew flight and duty time limitations; tariffs; competition; size of market; etc.

The greatest influence on schedule planning, however, is the traveling and shipping public in a free society. It is the public and its patronage that determine how many schedules are operated, to where and at what times.

Summary

The airlines view the report which FAA has offered the Congress as a realistic appraisal of the problems and prospects of achieving increased airport capacity. While the report's specific suggestions for individual airports are subject to much debate and no doubt open to different approaches; while it overstates the promise of certain solutions and understates the significance of certain problems; it is a valuable indicator of the limitations on ATC system and airport capacity. The report correctly states that electronic technology alone, as important as it is, cannot offer major capacity increases, and identifies the real limitations.

The report, sober as it is, is optimistic, in the view of the airlines, on the capacity increases achievable from its proposals, and in its assertion that FAA's efforts can delay airside capacity limitations for a decade. Nonetheless, many of the remedies proposed, especially those on airside improvements, should be vigorously pressed to achieve their best results. Equalization of VFR and IFR capacity, when achievable in an economically practical way, is an especially important goal.

The fact that the anticipated system capacity increases are far lower than had been hoped should not be a signal to attack FAA's efforts or to reduce its resources; to the contrary it should be used to spur FAA to redouble its efforts to achieve maximum early results from its current efforts, to reduce the cost of new facilities through improvement of its procurement processes, and to renew its search for larger capacity increase potential through new initiatives.

Airline Assessment of FAA Engineering and Development Program

Background for FAA's Program

The current FAA Engineering and Development program is based heavily a) on the NAS/ARTS programs, which are intended to produce better aircraft position data together with better displays for controllers, automatic tracking, improvement in the coordination process; and to establish an automatic, nationwide flight plan processing and distribution system; and b) on the recommendations of the DOT Air Traffic Control Advisory Committee (ATCAC):

In 1969 ATCAC suggested a three-year Research and Development program which was to lead to:

"1) a doubling of major urban airport capacity with a likely reduction in perceived noise below current levels;

2) an ability to maintain, if not improve, freedom of flight with greater safety, as traffic increases; and

3) substantial increases in the ability of controllers to handle traffic through additional system automation."

ATCAC concluded that by expanding the semi-automation of NAS Stage A and ARTS III to include spacing, sequencing, and conflict prediction and resolution, and by adding data link, two to three times the present traffic could probably be handled by the same controller work force. Re-sectorization, non-direct routing and area navigation was thought to increase capacity an additional two to three times but with proportionate increase in controllers; with this increase in people reduced potentially by "higher levels of automation."

FAA's own current assessment of the capacity increases achievable from its programs is far more modest, and almost certainly nearer the mark, as noted in the foregoing.

Current Situation

1. Terminal ATC and airport system capacity is now less than what it was in 1969, because ATCAC, FAA, and nearly everybody else underestimated the impact of wake turbulence, particularly behind heavy jets. It has significantly reduced capacity of our busiest airports and ground maneuvers of wide-body jets have also proven more time-consuming than anticipated. The problem

of noise and restraints resulting from it have been and remain serious obstacles to increased capacity, and reduction of delays.

2. Many of FAA's development and implementation efforts have moved more slowly than expected, due to difficulties in achieving technical agreement, stop-start funding authorizations, an extremely slow procurement process and slow operational acceptance. Further, analyses show that far less increase in terminal ATC capacity than hoped for can be anticipated.

3. There is a growing realization that other factors -- ground access to airports for one -- may be a constraint at least equal to airside system capacity.

4. Automation of ATC processes (as distinguished from surveillance and display automation), and the ways to gain benefit from it (under human supervision and responsibility) to speed the ATC process and reduce the growth in the number of controllers, remains to be accomplished.

5. While major airports have been shown to represent the most serious capacity and delay problems, the E&D programs related to achievement of best airport design and utilization seem to lack focus.

6. Important progress has been made in pinpointing problems and initiating R, E&D efforts; however, little progress has been made in assessing prospective value of ATC system improvements, measurement of real time delays on a day-to-day basis, or on rapid pinpointing of causes and cures.

Status of ATCAC Recommendations

For the seven basic elements by which ATCAC described the "upgraded third generation" ATC system, a number of (mostly) technological developments are under way:

1) Airport design "for high capacity" is moving slowly. Some progress is being made on lateral runway separation reduction and concept work is proceeding on the "dual-lane" runway, but few major improvements are scheduled for implementation.

2) The "Discrete Address Beacon System" (DABS) is under rapid and expensive development.

3) "Automatic IPC" (intermittent positive control) still shows important promise of providing services to general aviation aircraft, and there is to be a test of it soon; but fundamental concept issues remain.

4) While the NAS-A/ARTS programs offer important improvements in the information the controller has to work with, and offer advantages in interfacility communication and hand-off, "increased automation" of traffic organization, and computer-generated flow and metering control are still not near. There are still serious questions about the way human controllers can interact with computers so that the best capabilities of both can be used to achieve ATC process automation.

5) "Improved VOR/DME" and "wide implementation of area navigation" are moving slowly; area navigation study is still under way. FAA operating management has not yet completed a realistic determination of potential RNAV payoffs in the form of quantified data which could be used by ATC system users to determine whether or not there can be any real value in an RNAV system.

6) The "scanning beam microwave ILS" is under active development.

7) The "coupling of the control function to aircraft via data link" envisioned by ATCAC remains undefined.

"Fourth Generation" Air Traffic Control System

While FAA, after ATCAC, moved toward development of what came to be called the "upgraded third-generation Air Traffic Control system" (FAA's summary of its features described in Attachment 2), DOT followed up on an ATCAC recommendation for long range research and followed up on an ATCAC recommendation for long range research and development into the possibilities of satellites for domestic ATC application. More than $8 million was spent by the Department of Transportation, using the Transportation System Center (TSC) and several contractors to look at what was first called the "fourth generation" ATC system and later "advanced" air traffic management (AATMS) concepts and systems. This work, started on a questionable premise, has

resulted in large volumes of documentation. The final result of the activity, not yet fully completed, will probably (and perhaps fortunately) be endorsement of FAA's present direction and a recommendation for long-term research to continue probing the possibilities of satellites for ATC applications.

What May Be Expected

Limited but important prospects for improvement are evident in FAA's recent study of eight major airports.

- The basic airside ATC improvements to be anticipated come from ameliorating the effects of wake vortex turbulence, and from the Metering-and-Spacing program.

- Of equal or perhaps greater importance are F&E improvements which would bring IFR ATC system capacity closer to the capacity achievable under VFR conditions -- improvement and extension of ILS service, better lighting, improvement reliability of aids and services, better airport surface surveillance, and some airspace restructuring.

- Over the longer term, "advanced" Metering and Spacing, airport surface guidance and control, closely-spaced parallels, and flexible approach and departure capability (by use of the Microwave Landing System) are expected to yield results. With these improvements, there is hope of gaining a small percentage of IFR ATC airside capacity, around 20% - 25% within the next few years, if system improvements are made.

- There appears to be hope of raising IFR capacity to be closer to VFR capacity, at least to within 10% - 15%.

- The studies indicate that the landside problem (parking, airport access, passenger and cargo ground movement) becomes the controlling restriction at nearly all busy airports. Before such restrictions become critical, FAA sees need for changes in airline practices -- with a need for use of quotas, rescheduling, gate-sharing, use of mobile lounges, etc.

- There is yet little reason to hope for early reductions in the manpower-intensive nature of FAA's system.

It can be inferred from the foregoing that there has been less progress in the past four years in the attainment of goals set forth by FAA and the ATCAC report than we might have hoped. While FAA has initiated an R, E&D effort which should yield useful results, there are now strong indications that attainment of the goals set forth by FAA and ATCAC will be long and hard to achieve, and may not be attainable to anything like the measure hoped for. However, positive and tangible improvements have been realized in safety and efficiency, and groundwork has been laid and the base for real ATC automation is coming along. It remains now to capitalize on these efforts.

Assurances to users of tangible benefit from expenditures of system improvement dollars are important. There is need for a system improvement plan which represents FAA-wide agreement,

and which carries a commitment that system capacity, productivity, or efficiency will actually increase if particular developments are technologically successful, and implemented.

Establishing R, E&D Priorities

Evidence of Tangible R, E&D Benefit Needed

FAA, as an agency, has not yet been able to speak on the prospective utility of most Engineering and Development activity. FAA has not indicated to users that large expenditures by FAA or users (or both) would produce clear and measurable improvements.

Examples:

- While FAA E&D postulates eventual, independent operations on parallel runways as close as 2500' apart, there has been no indication to airport planners by FAA operating people that this is a real possibility, for which groundwork should be laid in airport design.

- While FAA E&D postulates an eventual reduction in longitudinal separation on approach to two miles, there is no hint from the FAA Operating or Safety Services that such a reduction is even a remote possibility.

- While the Microwave Landing System offers potential basic attractions, there has been no assurance from FAA operating services that its implementation would yield tangible returns to ATC service, beyond the basic known advantages of clean beams, better coverage, terrain immunity, etc.

These examples show clearly the need for a coordinated R, E&D and operational implementation effort.

User Considerations

In considering the FAA R, E&D program, three factors are paramount in the eyes of airline users of the FAA system.

- It is difficult to comment on FAA's Research, Engineering and Development program in isolation. The payoff of the R, E&D comes ultimately in the acceptance by users and FAA's Operating Services of its products. Hence we see R, E&D and field implementation as a necessarily closely integrated process which requires a corresponding overview within FAA. The current level of the R, E&D program is appropriate to the need, but it must be coupled with action and implementation decisions on its product if even modest goals are to be achieved.

  This problem represents a long-standing organizational weakness in FAA; one which deserves attention at the highest level.

- Several of FAA's programs are likely to place heavy financial burdens on airlines and others users for airborne electronic equipment. The real prospective payback for new systems, in terms of safety, ATC capacity and productivity, or cost savings to offset expenditures, should be considered in formulating any new programs.

- In addition to user taxes which are contributed into the Trust Fund, the costs for ground improvements including airfield and runway paving, terminals, airport roads, etc., are borne in significant part by the airlines in the form of landing fees and other cost-recovery devices. The FAA conclusion in the Airport Capacity Study that most of the needed capacity increases will have to come from such airport improvements is likely to place a heavy burden on airlines. Every effort must be made to exploit improvements which do not require more concrete and its ancillaries.

Research, Engineering and Development Activities Which Should Be Pressed Now

In the view of the U. S. scheduled airlines the following listing represents a general priority order of significant R, E&D efforts which may be expected to yield useful results in a reasonably near time frame.

1. Completion of E&D Efforts to Establish a Data Base on Wake Vortex Incidence, Severity, Movement, and Life Duration - development of wake detection systems; development of appropriate correlation of wakes to environmental conditions; and development of assessment and prediction methods and devices leading to earliest possible elimination of increased approach separation standards any time they are not needed.

COMMENT: Excellent work is being done in this area and a significant data base has been established. Assessment of the data should lead to early establishment of conditions under which increased separations are not required. Refinement and early implementation of prediction methods which would permit variable spacing are proceeding, but are likely to be hampered by delays in FAA's Metering-and-Spacing program.

2. Completion of Development of Terminal Area Metering-and Spacing - as a bellwether of air traffic control process automation.

COMMENT: This program, the first use of computers to help controllers organize traffic for optimum runway utilization, may permit achievement of a small capacity increase in the near term. The Metering-and-Spacing program is a prerequisite to adaptive spacing to minimize wake turbulence effects. This program has suffered serious and unfortunate delays.

3. Development of an Improved, Automated Air Traffic Flow Management System

COMMENT: Improvement in managing traffic flow so as to best accommodate the traffic under conditions of poor

weather, airspace restrictions and other factors, and to assure minimum delay for all system participants, is of particular importance to efficient, safe, fuel-conscious operation. Because centralized flow management depends heavily on availability of good terminal operational data, prediction capability, and rapid communications, great care to assure fair treatment to all users is needed in the development of a centralized flow management (flow control) system. There have been serious contracting delays in FAA undertaking this activity.

4. Completion of Development and Implementation Phasing of ARTS III Improvements, including development of system redundancy; improvement of Beacon tracking system; utilization of multiple radar/beacon sites including passive sites; radar digitizing in areas where there is not essentially full implementation of transponders; development of safe-altitude warning; development of conflict alert (possibly followed by conflict resolution automation).

COMMENT: While a number of ARTS III enhancements have been under consideration for some time, and a number of developments are essentially complete in FAA and contractors' plants, procurement and movement to complete development and initiate implementation has been very slow.

5. An Integrated Program to Optimize Airport Capacity, and make best use of available facilities and improvement potential.

COMMENT: A number of separate efforts are under way in FAA which deal with the problem of airport capacity and its optimization. The efforts, however, appear unfocused and require management emphasis if early practical results are to be achieved.

6. Airport Pavement Design Research, and Development Program

COMMENT: A sound rational theory must be developed in a timely fashion to enable engineers to design airport pavements to withstand the loads of present and future generations of aircraft under high volume traffic.

7. Development of Optimum Facility Implementation Plans to Increase IFR Airport Capacity at Major Terminals

COMMENT: FAA studies show that increases in IFR airport capacity can be achieved in the near term by implementation of a variety of available aids and services at major airports -- ILS, Category I, II and III, landing aids, lighting, backup instrumentation, higher reliability facilities, etc. (where workable, fog dispersal systems should be considered for "worst case" major airports where Category III weather occurs frequently). A specific effort should be mounted to lay out optimum implementation plans for provision of these services at major airports to achieve better economic VFR/IFR capacity ratios.

8. Development of an Airport Surface Control and Guidance System, with First Emphasis on Aircraft Surface Management for Fuel Conservation, and Marking/Lighting Standardization

COMMENT: A number of efforts are under way to minimize lengthy departure queues, retain best availability at gates, and permit most efficient aircraft movement on the airport surface to conserve fuel. Longer term development should provide for a surface guidance and control system to integrate aircraft operations, emergency vehicles, and regular surface traffic, and provide for safe poor-visibility operations. A task should be undertaken to establish whether FAA's longer-term surface guidance and control activities could produce early output to aid aircraft operators and the ATC system establish the best balance between gate holds, "penalty box" operation, and achievement of minimum departure queue length.

9. Completion of Development of NAS Stage A Enroute System with particular emphasis on sectors feeding high activity airports, improvement of target tracking, improvement in reliability and evolution of NAS Stage A capability to include conflict alert (and possibly conflict resolution).

COMMENT: NAS Stage A development and implementation have suffered several years of delay. Development of the system has proven far more difficult, and requires far more computer capacity than anticipated. Continuing development activity is needed to achieve best separation standards, to optimize the limited capabilities of primary radar as a data source, and to provide controllers with capability to track through clutter and display weather information.

10. Improvement of Primary and Secondary Radar Surveillance Systems: a) development and applications engineering of basic improvements in primary radar processing; b) evolutionary improvement of the secondary ATC Radar Beacon System to produce fundamental improvements in antennas, reflection protection, accuracy, garble detection, selected-sector data rate increases, etc.; c) development of modular secondary radar improvement packages which can be implemented in cost-effective stages up to and including a final stage which would introduce the DABS signal format and discrete address function if needed for IPC or other reasons; d) development and applications engineering of improved, higher-accuracy digitizing systems for primary and secondary radar to take advantage of new digital radar processing technology.

COMMENT: In addition to the basic upgrading of both primary and secondary radar which technology now permits, the groundwork should be laid for basic decisions on the future roles of primary and secondary radar in the NAS system. The high cost of a dual primary/secondary surveillance system developed essentially independent of each other may no longer be cost-effective in the light of new processing technology and the fundamental limitations of primary radar tracking. A decision-making basis should be established by FAA with

respect to future requirements for ATC transponders, and on the amount and extent of primary radar backup needed to achieve an optimum data acquisition and surveillance system.

11. Assessment of System Changes Needed to Achieve Higher Controll Productivity, and identification of most promising development and implementation directions to achieve a less manpower-intensive ATC system.

COMMENT: This effort should include practical assessment of best ways for controllers to interact with automation systems and best ways of introducing ATC process automation without losing the decision-making capabilities of controllers.

12. Development of Landing Systems to Permit Low-Cost ILS Installations and applications at poor sites; and orderly continuation of the Microwave Landing System development program, and assessment of prospective MLS applications for noise alleviation, improved operations on closely-spaced parallel runways, two-segment approach possibilities, etc., as an economically viable element of the total ATC/Navigation system.

13. Development of a Real-Time ATC System Performance Measurement System

COMMENT: Aside from the generalized FAA NASCOM delay reporting system which only reports delays exceeding 30 minutes and thus masks the majority of actual delays, there is no well-organized real-time, or near-real time, measuring system which produces for FAA or airline management up-to-date information on system performance and delays. An effort is needed to establish a more nearly real-time reporting system for delays, particularly as applicable to major terminal areas and the routes that serve these major terminals. There is need for a continuing assessment of the performance and efficiency of the ATC system which can be used to pinpoint system failures for rapid attention.

14. Lay Groundwork for Future Data Processing/Computer Applications and Development

COMMENT: Experience in the NAS Stage A and ARTS III development has shown the need for far greater data processing capability than was initially anticipated. Available capacity within the FAA computer systems for expansion and addition of new functions is extremely limited. An assessment, with a view toward early decision-making, is needed to assure the best balance of computer capacity, inter-communications requirements, external communications requirements, and backup reliability needs for the FAA data processing system, as demands for system redundancy and additional functions grow. Such studies and decision-making should encompass assessment of the need and timing for centralized information for ATC flow management, use of data processing input/output terminals at flight service stations, possible Center configurations that may be made possible by implementation of ATC automation and digital communication, increases in computer storage

and processing capacity needed for true automation functions both in terminals and enroute, etc.

15. A Psychoacoustics Research and Development Effort

COMMENT: The continuing problem of aircraft noise and its alleviation requires better understanding of the effects of aircraft noise on people, to produce a basis for proper assessment of potential aircraft noise reduction proposals. This effort should include establishment of better noise measurement systems which correlate to effects on populations living near airports.

16. R, E&D Assistance to FAA Operating Services on Evaluation of Potential Value of Area Navigation

COMMENT: FAA has not established whether or not widespread and expensive implementation of airborne area navigation systems would offer operational and economic benefits to users or to the ATC system. A valid, detailed assessment of the potential advantages which the ATC system could offer to equipped users remains a prerequisite to implementation.

17. Development of the Necessary Communications Interface Between Enroute Terminal Facilities, Air Traffic Control System Command Center, and Users; providing a modern method of communicating with users on a computer-to-computer basis (where feasible) for flight plan filing and possibly other (two-way) information exchange; and, when the economic benefit of digital communications becomes clear, making the aircraft a logical extension of the FAA ATC automation base system by facilitating addition of universal air/ground digital communications.

18. Development and Implementation of a Major Improvement in the Process by Which FAA Specifies, Procures, Installs, Maintains, and Assures Performance and Reliability of its Facilities. Development of means to obtain meaningful reduction in the number of field maintenance technicians required, and in the amount of flight testing required for FAA facilities.

COMMENT: This effort should include an assessment of the impact of delays in the procurement process of both R&D and facilities, and should concentrate on means to reduce the time required. While this is not research and development in the conventional sense, it represents a major problem which deserves systematic treatment by technical experts working with operational experts.

19. Continuing Development Leading to Compatible Updating of ICAO Standard VOR/DME for Better System Accuracy and Improved Performance at Difficult Sites

Attachment 1

[Excerpt from FAA Report EM-74-8, dated March 1974, "An Overview of the FAA Engineering & Development Programs with Highlights of Fiscal Years 1974-1975"]

This section is based on the Executive Summary from the two-volume airport capacity study completed in mid-FY 1974 (Reference 5).

The data gathering and analysis for this study were conducted in the summer and fall of 1973 before the major fuel cutbacks announced in late November, and the projected airport traffic demand does not reflect the constraints in traffic now expected to be experienced, at least in the near future. At worst, the basic conclusions of the report will be unchanged although the deferred timing of demand increases might cause slips in traffic forecasts of from one to several years.

Background and Approach This study was conducted by the Federal Aviation Administration in response to the following request of the House Appropriations Committee in its report of June 15, 1973, on the Department of Transportation and Related Agencies Appropriation Bill, 1974:

The Committee is concerned that air traffic control delays are again on the upswing and that there is no clear indication of what immediate and near term results may be expected from the Research, Engineering and Development (R,E&D) and Facilities and Equipment (F&E) programs to produce the needed increased airport and air traffic control capacity and productivity at major terminals. FAA, therefore, is directed to report to the Committee by December 15, 1973, regarding the impact it expects its current R,E&D and F&E programs to have in producing the needed capacity and productivity increases.

Eight major airports (Atlanta, Chicago O'Hare, Denver, Los Angeles, Miami, New York Kennedy, Philadelphia, and San Francisco) were selected for detailed examination by a team of FAA headquarters personnel with contractor support. The time period covered by this examination was the next decade. The principal objectives of the study were:

- To review the causes and trends in airport delay
- To identify those F&E projects and R,E&D programs that could help increase airport capacity and decrease delays in the short term (1973-1975), medium term (1976-1978) and long-term (1979-1982).

This study also had the following secondary objectives:

- To identify those feasible FAA operations and sponsor/airline changes that could help increase airport capacity
- To determine the airside and landside growth capabilities of the major airports.

The eight major airports that were surveyed in this study have consistently been responsible for well over 60% of all aircraft delays. These airports experience a wide spectrum of problems that typify large airport operations, and it is felt that the study findings and conclusions are therefore applicable to essentially all of the nearly thirty major U.S. air carrier airports.

Perspective on the Problem At most of the eight airports surveyed, the number of aircraft operations has for the past three years been below the 1969-1970 peaks, while total annual air carrier passenger enplanements have increased twelve percent in the same period. This apparent contradiction results from the introduction by the airlines of the wide body aircraft, most notably the DC-10 and L-1011 on domestic routes. Concurrently, airside capacity has fallen steadily at these airports, primarily because of the wake vortex problems associated with the new and heavier aircraft, and the quota system* has necessarily been maintained in operation. After a steep decline in 1971, the incidence of reported delays has increased in 1972 and 1973, and this increase has given rise to Congressional concern regarding the cause of the rise and what might be done to reverse the trend.

Delays to Air Traffic

Total National Airspace System Communications (NASCOM) reported delays (those in excess of 30 minutes) for the first ten months of 1973 exceeded all of 1972 by 14%. The current national rate of delay reports is about 50,000 aircraft delays per year. Reported causes of these delays indicate that about 89% are attributable to weather-related problems. While improved instrumentation and other technological advances can help limit to some degree the effects of bad weather conditions on the system, the basic fact remains that the majority of severe delays are weather-related and are largely unavoidable.

NASCOM delays are not a significant problem at many airports. In fact, as noted previously, nearly two-thirds of all reported delays occur at the eight major airports surveyed in this study. At these locations, the operations reported delayed by more than 30 minutes cur-

* The quota system consists of FAA-established capacity ceilings and operations reservations procedures. These quotas are currently in force during certain peak hours at New York (Kennedy and La Guardia), Chicago O'Hare, and Washington National Airports.

rently average about 1% of total operations. In spite of the recent increase, the incidence of delays at these eight airports is still significantly lower than the delay levels which were experienced at these locations in 1968 and 1969 (about 3% of total operations).

Air Traffic Levels and Airside Capacity

Over the next decade most of the major airports can expect a modest growth in traffic back to or above the 1968-1970 level. In particular, peak hour traffic can be expected to stay at its present high level or grow since these peaks represent the public's highest desire to travel and the flights on which the airlines experience their highest load factors. The trend to lower aircraft operations capacities brought about by wake vortex problems makes it imperative that means be provided to return VFR operations capacity to the previous levels and to raise IFR operations capacity to more nearly equal that experienced in VFR. Currently six of the eight airports experience peak hour IFR airside saturation. By 1982, without the provision of planned ATC improvements, all of the airports could experience IFR saturation, and six of the eight could experience VFR saturation. Such high levels of airside congestion would severely impact total aircraft delay.

Passenger and Cargo Movement

Pending evaluation of the future impact of fuel shortages, passenger enplanements were forecast to increase dramatically over the next decade, doubling nationally with even larger increases at some airports. This increase would be accomplished through extensive use of wide body aircraft, with peak hour mixes of 60-80% wide body vehicles projected for the 1980's. This growth will be accompanied by similar large increases in air cargo tonnage. Thus a major problem these airports will face is the movement of masses of people and goods, with consequent landside congestion. The extensive use of wide body aircraft to accomplish this movement could, moreover, further contribute to losses in airside capacity. The consequent airside congestion will impose limitations on passenger and cargo movement unless the requisite improvements in terminal and en route ATC are made.

Discussion The major findings of the study were:

On Delay

Much delay is not of direct ATC origin. Major delays come from weather, overscheduling of available capacity during peak hours, schedule clustering within the hour (i.e., built-in delays due to temporary overloading), and gate overloading problems that tax the available system capacity. While one long run solution is to provide more system capacity, the airlines can help to relieve many situations of excess demand and uneven utilization through:

- Use of weather alternate routes
- Spreading of intrahour and interhour schedules
- Use of common departure procedures
- Use of gate sharing and remote parking with mobile lounges or other passenger transport devices
- Diverting some scheduled traffic to air carrier reliever airports, and balancing demand among the several airports in a metroplex area such as New York.

In any case, additional capacity cannot eliminate all delays.

For the Short Term (1973-1975)

1. The F&E program continues to upgrade the capabilities of the major airports through:

- CAT I instrumentation of all arrival runways
- CAT II/III instrumentation to increase all weather operations

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Category I Weather—Weather allowing a forward visibility of ½ mile. Under Category I, the pilot should be able to see the runway from an altitude not in excess of 200 feet.

Category II Weather—Weather allowing a forward visibility of ¼ mile. The pilot should be able to see the runway from an altitude not in excess of 100 feet.

Category III Weather—Runway effectively not visible from any altitude and all landing decisions are left to the pilot. Category III breaks down into three subcategories.

IIIA. Forward visibility is 700 feet, a distance sufficient for a landing abort.

IIIB. Forward visibility is 150 feet, a distance sufficient to permit taxiing.

IIIC. Zero forward visibility.

- Provision of high reliability and backup instrumentation air/ground communications, and lighting
- ARTS III installations and software improvements
- ASDE-2 improvements.

Additionally, F&E to add arrival instrumentation on runways that are now primarily used for departures can provide:

- Backup ILS capability in the event of runway closures (a major problem because of runway deterioration caused by the introduction of wide body aircraft) or ILS outage.
- Instrument capability for staggered approaches to dependent parallel runways (i.e., those with 2,500 ft. to 5,000 ft. lateral separation) to increase arrival capacity.

2. The R,E&D program has developed the following items in support of these improvements:

- Dual-lane runway designs and procedures
- Analyses in support of independent parallel IFR operations at 4,300 ft. lateral separation

- ASDE-2 improvement packages (including new BRITE displays)
- Wake vortex behavior test data.

Further, the following R,E&D products, currently under development, could begin to help in short term improvement of airport capacity:

- Wake vortex alarm system (data evaluation, wind sensors, and acoustic monitors)
- VFR two-segment approach procedures and IFR avionics.

3. Short term gains will be achieved through FAA operational changes that will allow existing capacity to be utilized more fully:

- Departure and arrival airspace restructuring to add and/or balance the traffic load on fixes and routes, and to reduce inter-airport conflicts in metroplex areas
- Full employment of common departure speed profiles (e.g., ATA noise abatement takeoff procedures) to reduce the need for in-trail restrictions
- Use of independent parallel and staggered dependent parallel IFR approach procedures to increase arrival capacity under present or reduced standards.
- Establishment and use of severe weather alternate routing plans
- Utilization of wake vortex test data to determine meterological conditions when large vortex spacings are not needed
- Establishment of VFR two-segment approaches to reduce local noise impact of high operations rates. While not a capacity increase item, two-segment approaches may allow sustained high arrival rates and open up approach paths not currently available because of noise restrictions.

Summary of the short-term improvements (1973-1975):

E&D:
Under development
1. Wake vortex alarm systems (I)
2. Two-segment approaches (I)

Available for implementation
1. Dual-lane runway concepts (operations/sponsor) (D)
2. Parallel approaches to 4300 ft. (operations) (I)
3. ASDE-2 improvements (F&E) (I)

OPERATIONS:
1. Upgrade terminal departure capability (fixes, routes, alternates) (D)
2. Establish severe weather alternate routing plans (DR)
3. Establish realistic capacities and quotas for airports (DR)
4. Establish VFR two-segment approaches at noise impacted locations (I)
5. Establish common departure speed profiles (DR)

F&E
1. Instrument all arrival rwys. (D)
2. Retain/add instrumentation on departure runways (DR)
3. CAT II and III (DR)
4. Relocate VORTAC (I)
5. Remaining ARTS III deployment (I)
6. Implementation of E&D

SPONSOR/AIRLINES:
1. Additional/improved exits (I)
2. Ad hoc gate sharing and mobile lounge concepts (I)
3. Realistic hourly and intrahour scheduling (DR)
4. Use severe weather routing (DR)
5. Use common departure speed profiles (DR)
6. Employ VFR two-segment approach procedures (I)

NOTE: D - DIRECT, I - INDIRECT, DR - DELAY REDUCTION

Direct improvements refer to new runways, more gates, etc. to directly improve airport capacities.

Indirect improvements refer to reduced aircraft separation distances, improved approach control, better exits, and taxiways, etc.

Delay-reducing items refer to departure speed control, severe weather alternate routing, etc., that do not affect basic airport capacities but rather reduce delays.

FOR THE MEDIUM TERM (1976-1978)

1. Additional measures are required to provide the capacity needed to meet the possible increase in demand in the medium and long term for four reasons:

- Additional wide body aircraft in the fleet will further add to the severity of the wake vortex problem
- IFR capacity is only 60-80% of VFR capacity today and most of the airports surveyed experience saturation of capacity in IFR weather at present demand levels
- Few additional runways can be built at present locations and those currently planned or under construction will not meet the projected demand
- Air cargo growth will result in major increases in airport surface traffic in the gate/apron area.

2. Improvements to the terminal ATC system developed under the R, E&D program could provide substantial relief in the medium term and beyond. The key ATC improvement items are:

- Wake vortex avoidance systems (sensing and prediction)
- Basic metering and spacing
- Variable IFR longitudinal separation standards in final approach based upon wake vortex conditions (2 nmi. minimum)
- ASDE-3.

The wake vortex avoidance system (WVAS) is vital to recovering and increasing capacity. This system will be deployed in three stages:

- Sensors and operational procedures will reduce VFR vortex spacing behind heavy aircraft under many wind conditions (short term)
- More sophisticated sensing and prediction will reduce VFR vortex spacing for all aircraft under most wind conditions, and may provide some capacity relief in IFR
- Continuously variable automatic spacing performed by coupling WVAS to metering and spacing (M&S) will provide substantial aid in IFR and VFR conditions.

Basic metering and spacing are required for full employment of the wake vortex capability (i.e., variable spacing on final approach), regularization of delivery to the final approach course, and longitudinal separation monitoring during the approach. Reduced IFR longitudinal separation for final approach—to a 2 nmi. minimum (variably increased for vortex conditions), which would result in an average minimum interarrival spacing of 75 seconds, equivalent to that achieved in VFR today—is essential at most locations to meet projected IFR demand for the long term. WVAS, basic M&S, and well-located, well-marked high speed exits are required to implement this reduction.

3. Although there is every reason to believe the R,E&D program will successfully produce hardware and procedures that will result in the desired ATC improvements, any development program has its risks and the outcomes of a program are difficult to predict. Additionally, there is a lead-in time following development for implementation of these improvements through F&E and other improvements. It is therefore expected that major improvements resulting from the current R,E&D program will not be fully realized until the medium and long term. Full benefits will not be achieved without full success of key elements of the program.
4. Additional and improved high speed exits will be needed for the higher arrival rates, particularly for IFR operations. Construction of additional parallel runways beyond those currently started or planned would help but does not appear feasible at the airports surveyed.

Summary of the medium-term improvements:

E&D:
1. Wake vortex avoidance system (I)
2. Basic metering and spacing (I)
3. Reduced minimum longitudinal spacing on final approach (I)
4. New ASDE-3 (I)
5. Parallel approaches to 3500 ft. (I)

OPERATIONS:
1. Continue emphasis on efficient terminal airspace structures by
   - Employing parallel approach capabilities (I)
   - RNAV parallel offset routing (D)
2. Employ medium term E&D
3. Establish IFR two-segment approaches at noise impacted locations (I)

NOTE: D - DIRECT, I - INDIRECT, DR - DELAY REDUCTION

F&E:
1. Complete CAT I instrumentation (DR)
2. CAT II and III programs (DR)
3. ARTS III enhancements (inc. M&S) (I)
4. Continued implementation of E&D

SPONSORS/AIRLINES:
1. Additional/improved exits (I)
2. Some new/expanded terminal bldgs. (D)
3. New runways (D)
4. Access and parking improvements (D)
5. Mobile lounges and/or cargo transporters (I)
6. Formal gate sharing (I)
7. Continue emphasis on rational scheduling (DR)
8. Improvements in fleet noise mix (I)
9. Employ two-segment approach avionics (I)

Capacity benefits of ATC improvements:

Improvement Item	Incremental VFR Improvement	Incremental IFR Improvement
Wake vortex alarms	3%	....
Variable spacing	3%+*	5%
Basic metering and spacing with automated variable spacing	22%	9%
Reduced minimum IFR longitudinal spacing	....	31%
Advanced metering and spacing	....	7%

Notes: Percentage increases are additive median increases over ten airports.

Individual gains may be more or less at various airports, depending on aircraft mix and runway configuration.

* Increases range of VFR meteorological conditions over which the increase is applicable.

5. A surface traffic problem will arise with the construction of remote cargo facilities and the growth in wide body cargo service on passenger flights. Remote parking with passenger transporter connections can turn this liability into an asset by relieving gate loading and ground congestion. Routine gate sharing will also help to relieve gate delay.
6. The airlines should be able to meet FAR Part 36 noise standards by the end of the medium term. It is not yet evident if this will be sufficient noise relief to allow the projected growth in airport traffic. Schedule spreading may further help in limiting the operations demand and resultant noise exposure, but if noise (and air pollution) requirements cannot be met, the available capacity at these airports may be reduced by environmental restrictions.

FOR THE LONG TERM (1979-1982)

1. The following ATC improvements developed in the upgraded third generation ATC system will aid the airports in the long term:
   - Advanced metering and spacing for use in many of the major hubs (including departure metering and spacing)
   - The microwave landing system, which may assist through its flexible approach and departure path capability in redistributing noise and in more efficiently structuring metroplex airspace
   - 2,500 ft. simultaneous parallel IFR approaches to aid in achieving increased arrival capacity at selected locations
   - Airport surface traffic control systems for use in high density ground operations.
2. The airside capacity of these airports can be extended, within the present E&D and F&E framework, to meet projected demand for the mid- to late 1980's provided the wake vortex problem is solved. Under current and proposed plans, most of the surveyed airports will have exceeded their landside capacity before these air traffic levels are reached. The problems are primarily physical access/egress/parking limitations. Solutions to the problems will involve new access concepts and possibly new major airports that should be planned for now.

The application of these improvements will have substantial benefits at the airports surveyed. VFR capacity will improve by a median increase of about 25% over today, and IFR by about 50%. IFR capacity will rise from its present level of about 75% of VFR capacity to about 90%. This will have an important impact on the ability to maintain sustained all-weather operations. Most importantly, if all improvements are achieved no airport of those surveyed will in the long term experience peak hour VFR saturation, and only one airport is projected to experience peak hour IFR saturation. This should act to substantially reduce routing delays.

Summary of the long-term improvements (1979-1982):

E&D:
1. Advanced metering and spacing (I)
2. Microwave landing system (I)
3. Airport surface traffic control (I)
4. Parallel approaches to 2500 ft. (I)
5. QSATS vehicles (D/I)

OPERATIONS:
1. Employ curved approach/departure capabilities of MLS (noise & airspace impact) (I)

F&E:
1. Implement upgraded third generation ATC system
2. Continued implementation of E&D

SPONSORS/AIRLINES:
1. New terminal bldgs. (D)
2. New parallel runways (dual or independent) where possible (D)
3. People movers or other improved access/movement means (D)
4. Satellite/downtown terminals (D)
5. New airports where feasible (D)
6. Short haul service (QSATS)
   - Existing rwys. (I)
   - New rwys. (D)
   - Reliever airports (D)
     For noise and demand relief of major airports

NOTE: D - DIRECT, I - INDIRECT, DR - DELAY REDUCTION

Median capacity benefits of ATC improvements:

	Short Term		Medium Term		Long Term	
	Without Improvement	With Improvement	Without Improvement	With Improvement	Without Improvement	With Improvement
■ Changes in:						
IFR capacity	0%		−4%	+14%	−6%	+52%
VFR capacity	−1%	+3%	−5%	+25%	−7%	+21%
■ IFR as a percentage of VFR capacity	74%				71%	88%
■ Airports at which demand exceeds capacity:						
In IFR	7		9	5	10	1
In VFR	1	0	1	0	7	0

NOTE: Projected gains at 10 major airports

Conclusions The eight airports studied represent a cross section of airports where capacity and delay problems are recognized or anticipated. They are the most difficult cases and it is expected that the conclusions here are directly applicable to other airports. With respect to the primary objectives established for this study, the following general conclusions may be stated:

- Delays have dropped substantially from the 1969-1970 peak but have begun to increase again as the traffic has begun to grow. This growth can be met on the airside through F&E and E&D actions, but gate and scheduling conflicts must be resolved as well if the total delay problem is to be adequately resolved. Though delays are down from the peak, they remain undesirable and substantial increases may be expected in the future if the improvements to the system are not instituted.

- Short term F&E can help most in increasing the IFR system capacity and reliability (CAT I/II ILS, ASDE). Operational changes can provide additional capacity to meet adverse conditions such as severe weather and uneven traffic loads. There are identifiable past and expected outputs of the E&D program that, when implemented into F&E and ADAP actions, will increase airside capacity and decrease airside delays.

  Those R,E&D areas with highest priority (and most promise of capacity improvement) are wake vortex avoidance and the consequent reduction in final approach spacing. Metering and spacing is required to fully implement these improvements.

With respect to the secondary objectives:

- Airlines and sponsors can help by reducing gate delays through the provision of more gates, employment of gate sharing concepts where feasible, or through the use of passenger transporter concepts such as mobile lounges or buses. Redistribution of demand by the airlines through quotas and rescheduling would further help in short term delay reduction.
- This study indicates that, with an active program to institute terminal ATC improvements, saturation of the airports airside can be postponed a decade, into the mid- to late-1980's. The airport landside will become the ultimate source of congestion and restriction to further growth in the early 1980's at nearly all locations. The landside system is a complex amalgam of three separate subsystems: terminal buildings and aircraft boarding areas, on-airport access and parking, and the off-airport access system. The major limitation at the survey airports appears to be in their access/egress capabilities.

Attachment 2

4. UPGRADED THIRD GENERATION AIR TRAFFIC CONTROL SYSTEM

UPGRADED 3rd GENERATION FEATURES	FUNCTIONS	UPGRADED 3rd GENERATION FEATURES	FUNCTIONS
Intermittent Positive Control (IPC)	Provide automatic ground-based proximity warning indicator (PWI) and collision avoidance service to normally uncontrolled aircraft when necessary to avoid mid-air collisions.	Airport Surface Traffic Control (ASTC)	Provide modularized system for all-weather surveillance, guidance and simultaneous control of increased numbers of aircraft on the ground.
Discrete Address Beacon System (DABS)	Upgrade the present ATCRBS in an evolutionary and compatible manner to provide more accurate, reliable, and increased aircraft surveillance capacity and also a high capacity, low cost, ground-air-ground ATC data link.	Wake Vortex Avoidance System (WVAS)	Provide increased airport capacity by reducing aircraft separation standards during take-offs and landings as a result of predicting and detecting the presence of high energy wake vortices caused by large aircraft.
Area Navigation (RNAV)	Provide additional and more flexible air routes.	Aeronautical Satellites (AEROSAT)	Improve air traffic control communications and surveillance during oceanic flights.
Microwave Landing System (MLS)	Provide more flexible, precise, safe airport approach and departure paths for civil and military aircraft in all weather conditions.	Automation of Flight Service Stations (FSS)	Improve Flight Service Station (FSS) operations to meet the increasing demand for flight services while reducing the cost per service unit and the reliance on manpower.
Upgraded Air Traffic Control Automation	Provide increased automation emphasizing ATC decisions and enabling higher ATC system capacity and greater controller productivity.		

(From "An Overview of the FAA Engineering & Development Programs, 1974-1975, FAA, March 1974)

STATEMENT OF JAMES G. HARLOW

Morgantown/West Virginia University
Personal Rapid Transit System

Actions Leading to Present Problems:

1. A proposal for a "Feasibility Study of an Integrated City and University Transportation System" was submitted by the University to the U.S. Department of Housing and Urban Development (which was in charge of urban transportation) on June 27, 1967. APPENDIX A

2. As a result of a meeting between U.S. Secretary of Transportation, John A. Volpe and a Morgantown-University delegation, the Department of Transportation (DOT) (which became responsible for urban transportation) funded the Study on July 1, 1969. " B

3. The Study was concluded and a report was presented to DOT in August, 1970. " C

4. A proposal to design and construct a six-station, 3.6-mile guideway and approximately 100-vehicle system was submitted by the West Virginia Board of Regents to the Department of Transportation on August 5, 1970. " D

   A. The proposal was based on a comprehensive system designed by Alden Self-Transit Company. " D

   B. The total cost was $18 million. Only $13.5 million was requested from DOT. " D

   C. WVU had a firm bid from Alden, which was to be backed by a bond as a condition for awarding the contract. " E

5. Shortly thereafter (around August 24, 1970), the Urban Mass Transportation Administration (UMTA) of DOT decided to take over the management of the project from the University "... to insure the reproducibility and utility of the System in nationwide locations..." (1972 House Budget Hearing, pages 471 and 455). " F

6. Secretary Volpe announced (in Morgantown) that the Department had chosen Morgantown as the sight for the first PRT. That was on September 24, 1971. At that time the Department announced that it would build the System for $13.5 million. " G

7. Very shortly thereafter, UMTA decided to abandon Alden in favor of the open bid approach. Alden, which since September 15, 1970, was under contract to the Jet Propulsion Laboratory (JPL), the first System Manager for the PRT project, was notified on September 29, 1970, of the contract cancellation. This was a very critical action with far-reaching implications because: " H

   A. It meant that the System, which UMTA proposed to develop, had to be designed from A to Z rather than acquiring one already operating as a prototype.

   B. Being the first of its kind, this decision resulted in extensive planning, delayed the schedule considerably, and required the expenditure of very large sums of money.

   C. The University was barred from attending meetings or becoming involved in decisions that dealt with cost.

8. When the decisions were made by UMTA to take over the Project's management, the University requested in turn assurance that the

final System would be one that in fact meets the intent of the University's proposal. UMTA proposed a tri-management approval procedure by a project manager from JPL, a project manager from UMTA, and a project manager from the University. This arrangement lasted approximately six months resulting in approval of the System's Requirement and Constraints Document (12/17/70) and route plans (2/17/71). APPENDIX I

UMTA then dropped this arrangement, explaining that it wanted full control of the project, and in turn it proposed to sign a contract with the West Virginia Board of Regents giving the Board the right to require that the System be removed after its completion if it did not meet the intent.

9. A contract was proposed and delivered by UMTA to the Board during the month of ~~May or June~~ March, 1971, which generally stated: " J

   A. The System was to include six stations, 3.6 miles of guideway, and approximately 100 cars. " I

   B. A joint acceptance test for System performances to be conducted by JPL, UMTA, and WVU. " I

   C. A live demonstration and evaluation program then shall be conducted to last 24 months. " I

   D. The Board may request removal of the facilities if they do not meet the performance specifications. " J

10. Although the contract was signed by the Board on 7/16/71, UMTA refused to sign it and cited these reasons:

   A. JPL's cost estimate of $37 million.

   B. Such funds were not available in UMTA's Research, Development, and Demonstration Budget.

   C. UMTA proposed building the system in two steps--Phase I under the Research, Development, and Demonstration Budget and Phase II under the Capital Grant Budget.

11. The Board of Regents signed the new contract, Phase I, in September, 1971. There was no question then as to UMTA's commitment to the total Project. (The same commitment was repeated and appeared in the 1974 House Budget Hearings, page 809.) APP. K " L

12. JPL in their role as System Manager was directed by UMTA to design the System. Preliminary bid packages were proposed for the vehicle and the Communication and Control System. The Boeing Aerospace Company was awarded the contract for the vehicle design and Bendix Aerospace for the Communication and Control System design.

13. JPL remained in the role of System Manager until August, 1970, when it withdrew because of several disagreements with UMTA and was replaced by Boeing. It is interesting to note that, between July 1, 1969, and the present time, UMTA had the Project reporting to at least six different Project Managers.

14. Boeing immediately rejected JPL's cost estimates and proposed new and higher estimates. To accommodate the higher cost, UMTA redefined Phase I boundaries, deleting and deferring items to Phase II (over 12 major items). Furthermore, many of these changes occurred under the pressure of the deadline associated with the PRT Dedication and Demonstration. Thus the System's costs were escalated and eventual technical problems were created. " M

15. Groundbreaking was in October, 1971.
Dedication of a portion of Phase I was in October, 1972.
Testing was concluded in June, 1973, under the following limitations:

    A. Five vehicles were built but only one vehicle mostly was in operation at any one time.

    B. Testing was conducted by Boeing.

    C. No passengers were involved in the testing and the System never has been operated for public use.

PRESENT PROBLEMS

1. In September, 1973, UMTA asked WVU to submit the Capital Grant Application for Phase II. In turn, WVU requested Boeing to prepare a budget to be based on:

    A. Extension of the present System.

    B. Using the same pricing formula that Boeing used with UMTA in Phase I.

2. When Phase II costs were proposed to be $49 million, UMTA said it could not fund Phase II because its plans allowed for spending $30-$35 million. (This seems to trigger all our present problems.) APPENDIX N

3. Furthermore, UMTA wished to change the existing contract by: " O

    A. Dropping the clause giving the Board of Regents the right to request removal of the System if it did not come up to specifications.

    B. Agreeing that the Board would accept the System when UMTA requested it.

    C. Deleting any system testing with passengers.

    In fact, UMTA already has certified (to Boeing) that the System has met the specifications regarding safety, operations and maintenance costs, and reliability. This was based on analytical analysis, notwithstanding the fact that the 45 vehicles have not yet been built or tested as a fleet and that the computer programs, which will control and run the system, have not been written. " P

WHY NOT ONLY PHASE I

1. The present System goes from downtown Morgantown to the Evansdale Campus. Since it does not reach the Coliseum or the Medical Center, the System will not serve the citizens of Morgantown.

2. The present System is of very limited value to the University.

    A. The total system was projected to carry 14.5 million passengers a year. The expected use of the present system only will be 3.5 million passengers a year.

    B. The University still will need to operate the existing bus system between the three campuses; thus downtown bus trips will continue and there will be no relief for traffic.

    C. Only a third of the Engineering Station was constructed (the remainder was to be constructed under the Capital Grant),

making it physically impossible to carry its projected traffic, let alone the traffic from the three other stations should they not be constructed.

D. To operate the PRT System, the Board of Regents was prepared to assess a $5 a month fee on all University students. However, since the existing portion of the system only will serve a small segment of the student body, it would be unfair to ask all students to pay such a fee.

-- Morgantown/West Virginia University
PRT Advisory Committee
May 9, 1974

APPENDIX A

BOARD OF GOVERNORS OF WEST VIRGINIA UNIVERSITY
Morgantown, West Virginia

Engineering Experiment Station
Date: June 27, 1967

RESEARCH PROPOSAL SUBMITTED TO: The Department of Housing and Urban Development

PROPOSAL NO:

TITLE: Feasibility Study of Integrated City and University Transportation System

INVESTIGATOR:	Dr. Samy E. G. Elias
PROPOSED STARTING DATE:	September 1, 1967
PROPOSED DURATION:	15 months
FUNDS REQUESTED:	$82,885.

_____
Principal Investigator

_____
Departmental Chairman

_____
Dean

I certify that the distribution of costs between the direct categories as shown in the proposal conforms to the usual accounting practices of the institution and to the distribution used by the cognizant Federal Audit Agency.

West Virginia University complies with the regulation under Title IV of the Civil Rights Act of 1964 and has filed the appropriate "Assurance of Compliance" forms.

Approved for Submittal:

_____
Harry B. Heflin, Acting President of the University and Chief Executive Officer of the Board of Governors.

APPENDIX B

BOARD OF GOVERNORS OF WEST VIRGINIA UNIVERSITY
Morgantown, West Virginia 26506

Engineering Experiment Station
Date: June 24, 1969

Research Proposal Submitted to: The Department of Transportation

Proposal Number: 69032

Title: Feasibility Study of Integrated City and University Transportation System

Investigator: Dr. Samy E. G. Elias

Proposed Starting Date: July 15, 1969

Proposed Duration: 9 months

Total Funds Requested: $133,500

_____
Principal Investigator

West Virginia University complies with the regulation under Title IV of the Civil Rights Act of 1964 and has filed the appropriate "Assurance of Compliance" forms.

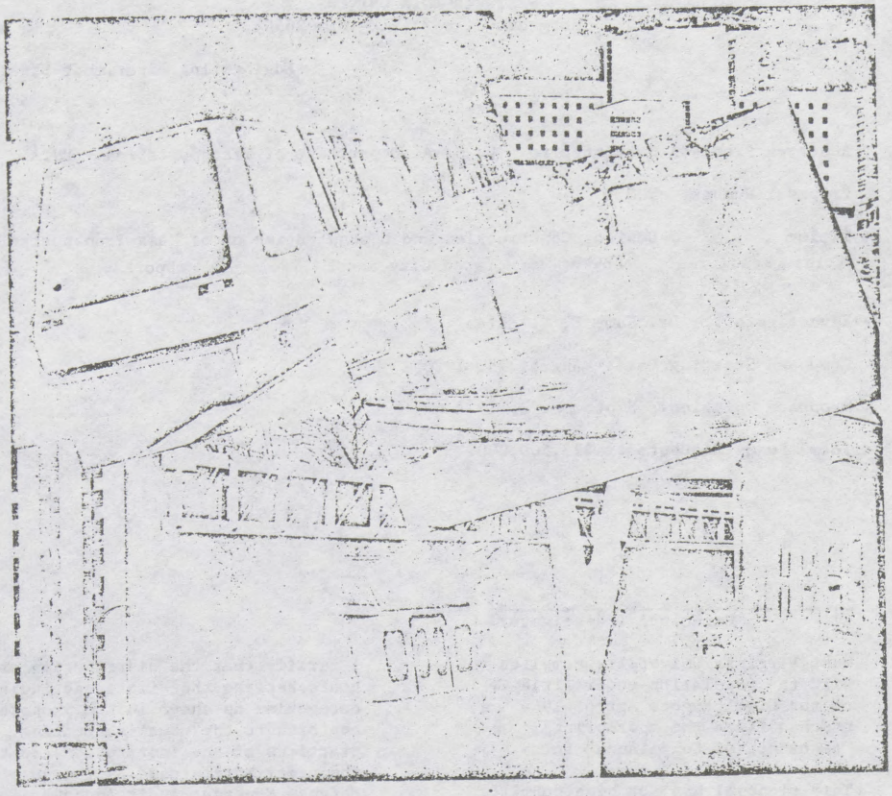
This proposal has not been submitted to other possible sponsors.

I certify that the distribution of costs between the direct and indirect categories as shown in the proposal conforms to the usual accounting practices of the institution and to the distribution used by the cognizant Defense Contract Audit Agency.*

Approved for Submittal:

_____
James G. Harlow, Chief Executive Officer of the Board of Governors

APPENDIX C



A Feasibility Study of An Integrated City and University Transportation System

Engineering Experiment Station Bulletin 97
College of Engineering, West Virginia University, Morgantown

West Virginia University Bulletin/Series 71, No. 1-7, July, 1970
Issued Monthly
Second class postage paid at Morgantown, West Virginia 26506

APPENDIX D

WEST VIRGINIA UNIVERSITY
Morgantown, West Virginia 26506

Engineering Experiment Station
Date:

Research Proposal Submitted to: U. S. A. Department of Transportation - UMTA

Proposal Number: 70031

Title: Design, Construction and Demonstration of of Mass Transportation System

Investigator: Dr. Samy E. G. Elias

Proposed Starting Date: August 15, 1970

Proposed Duration: September 1, 1974

Total Funds Requested: $13,500,000.

_____
Principal Investigator

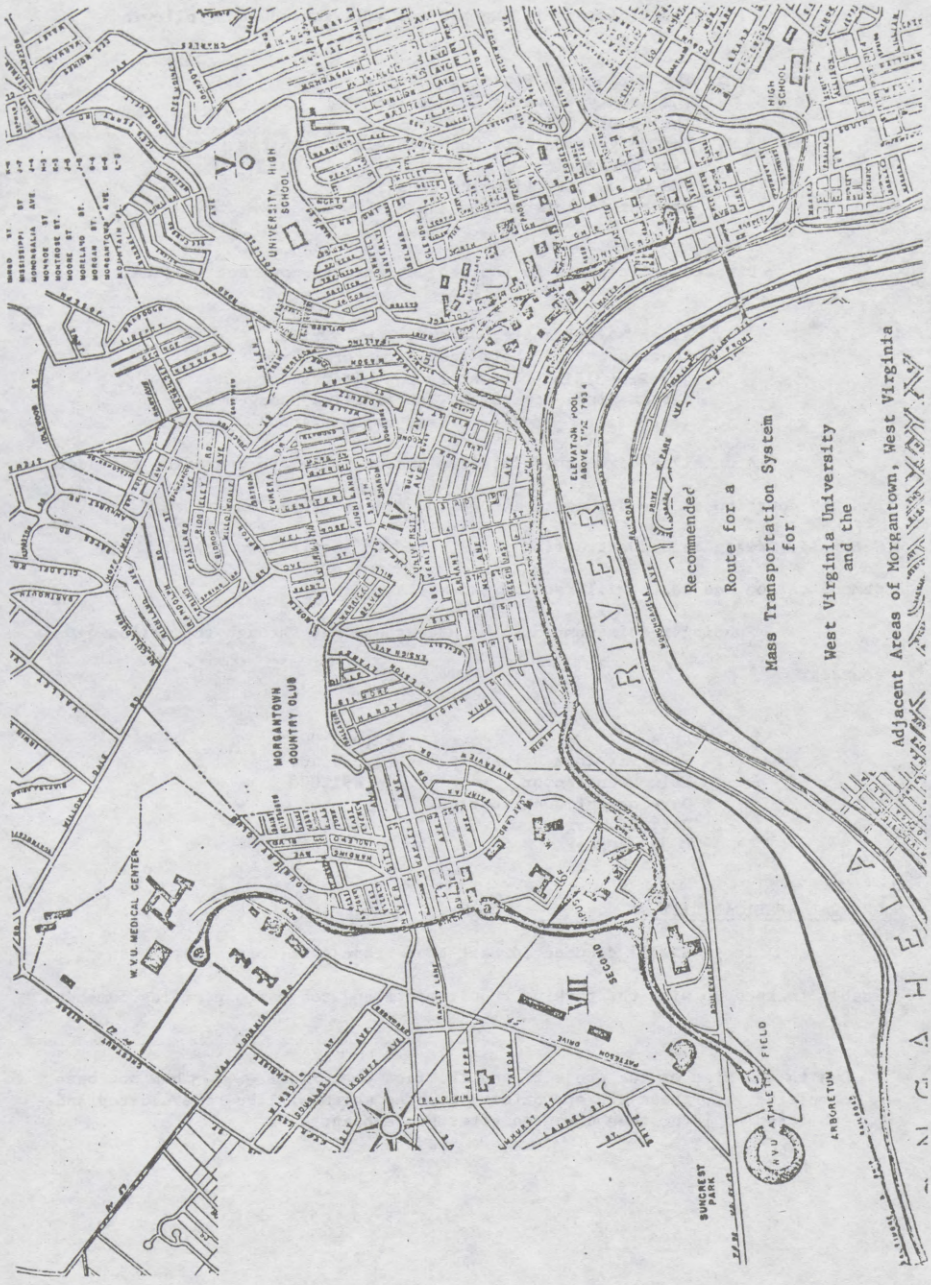
West Virginia University complies with the regulation under Title IV of the Civil Rights Act of 1964 and has filed the appropriate "Assurance of Compliance" forms.

This proposal has not been submitted to other possible sponsors.

I certify that the distribution of costs between the direct and indirect categories as shown in the proposal conforms to the usual accounting practices of the institution and to the distribution used by the cognizant Defense Contract Audit Agency.

Approved for Submittal:

_____
West Virginia Board of Regents
Prince B. Woodard, Chancellor


Recommended
Route for a
Mass Transportation System
for
West Virginia University
and the
Adjacent Areas of Morgantown, West Virginia
MORGANTOWN
COUNTRY CLUB
W.V.U. MEDICAL CENTER
UNIVERSITY HIGH SCHOOL
ELEVATION POOL
ABOVE THIS 1934
RIVER
SECOND
SUNCREST
PARK
ARBORETUM
HIGH
SCHOOL

Direct participants in the project will include the following:

- The Morgantown Planning Commission
- The County Planning Commission
- The County Court
- The Morgantown City Council, along with the City Manager
- The University Planning Council
- Project Administrators and Staff

Direct participants in the project through contract include:

- Alden Self-Transit Systems, Inc., Prime Contractor and their subcontractors
- Jet Propulsion Laboratory Consultants for System Final Design and Installation Management (acceptance pending current negotiations)

A detailed time schedule, from status review to operation turnover and the duration of the demonstration period can be viewed on Figure 6. Generally, design and construction is expected to require two years, while demonstration and tests will require two years.

Funding requirements can be adequately met through the following sources:

. UMTA	$13,500,000*
. West Virginia University	3,831,500
. Prime Contractor, Development Contribution	491,000
. City of Morgantown	100,000
. County Court	54,000

GENERAL APPLICABILITY

It is a well documented fact that urban settlements have been unable to keep up with the parking requirements and roadway capacities demanded

* Due to the size of the project, and the fact that final design has not been completed yet, these are approximate figures which will be re-evaluated and submitted no later than 6 months after project approval.

A. GENERAL DESCRIPTION OF PROJECT

PROJECT OBJECTIVE

Whereas, the specific objective of this project is to demonstrate the technological, operational and economic feasibility of the Alden Self-Transit System "StaRRcar" as being a truly workable new transportation mode, while at the same time being able to meet the future transportation demands of the West Virginia University as well as the adjacent areas of the City of Morgantown, West Virginia; the overriding, more general, objective of this project is to demonstrate the feasibility of a new system concept of public transportation as being able to respond to the transportation needs of either a middle size urban community, or a major activity center. Furthermore, this project will be conducted in such a manner as to permit the demonstration of enumerable secondary transportation oriented objectives. The ultimate number of secondary demonstrations is limited only by the imagination.

SUMMARY OF PROJECT ACTIVITIES

The demonstration objectives will be conducted in Morgantown, West Virginia with the principle demonstration site being located on the grounds of the West Virginia University, along with the project administrative and control arm.

The demonstrations will be achieved through the implementation of the following sequence of projec activities:

- Review of preliminary engineering design, system capabilities, and University-City general planning and transportation
- Preparation of Final Design Specifications
- Final Engineering Design
- Final Cost Estimate
- Fabrication
- Installation and System Tests
- Operation and Demonstration

APPENDIX E

Western Union Telegram

CTA003 SPY150 BA359 1970 OCT 24 AM 8 11

B WZA225 RW PDF 2 EX=BEDFORD MASS 23 606P EDT=
DR SAMY E G ELIAS=
368 KENMORE ST MORGANTOWN WVIR=

WE ARE PLEASE TO CONFIRM OUR APPROXIMATE PRIRE OF $12,799,500 COVERING TASK NBL 1 THRU 11 AS SHOWN ON PAGE 11-6 OF OUR JUNE 30TH PRELIMINARY DESIGN. BASED UPON A GO AHEAD BY AUGST 15TH 1970 BY PARALELLING MANY OF THE TASKS AND THE OMISSION OF A FULL SCALE PROTOTYPE THE HARDWARE FOR SYSTEM ROUTING AS SHOWN ON REVISION "B" TO PLATE H-1 CAN BE INSTALLED AND THE SUBSYSTEMS FUNCTIONALLY CHECKED OUT BY SEPT 1, 1972. THIS FURTHER ASSUMES THAT APPROVALS ARE OBTAINED AS FOLLOWS:=
ITEM 1. DESIGN SPECIFICATIONS - 3 MONTHS=
ITEM 2. FIRM HARDWARE COSTING - 4 MONTHS=

WU 1201 (R 5-69)

Western Union Telegram

1970 OCT 24 AM 8 11

ITEM 3. PROCUREMENT APPROVAL - 6 MONTHS=
THE BREAKDOWN OF SUBSYSTEM COSTS IS AS FOLLOWS=
ITEM 1 - GUIDEWAYS INCUDING FOOTING STRUCTURES EXCLUSIVE OF RAILINGS BUT INCUDING EMERGENCY WALK WAYS POWER DISTRIBUTION AND CONTROL - $6,142,500=
ITEM 2 - NNETY VEHICLES INCLUDING TOOLING - $1,844,00#=
ITEM 3 - CENTRAL CONTROL - $1,258,000=
ITEM 4 - SIX STATIONS INCLUDING FOOTBRIGES AT FIELDHOUSE AND MAIN CAMPUS - $1,008,000=
ITEM 5 - MAINTENANC FACILITY INCLUDING TWO SUPPORT VEHICLES - $632,500=
ITEM 6 - FINAL ENGINEERING DESIGN/CONSTRUCTION

Western Union Telegram

1970 OCT 24 AM 8 12

MANAGEMENT - $1,892,000=
SEVERAL ITEMS INCLUDED IN THE ABOVE MAY BE CONSIDERED PART OF ALDEN'S NORMAL DEVELOPMENT EXPENSE IF REQUIRED WE WOULD ASSUME AS OUR SHARE OF THE PROG AM UP TO 300K IN SOFTWARE 50K IN SUPPORT VEHICLES AND 141K IN VEHICLE TOOLING COST ANY CONTRACT RESULTING FROM THE ABOVE WILL BE IN ACCORDANCE WITH OUR STANDARD TERMS AND CONDITIONS DETAILED CONFIRMATIONWILL FOLLOW=
ALDEN SELF-TRANSIT SYSTEM CORP WALTER H AMADON VICE PRE

$12,799,300 1 THRU 11 11-6 30TH 15TH 1970 "B" H-1 1 1972 1. 3 2. 4 3. 6 1 $6,142,500 2 $1,844,000 3 $1,258,000 4 $1,008,000 5 $632,500 6 $1,92,000 300K 50K 641J.=(650).1

WU 1201 (R 5-69)

APPENDIX F

a fleet of computer-controlled vehicles operating on either a passenger demand or a completely scheduled mode on a separate dedicated guideway between off-line stations. Three stations are planned along the 2 miles of double guideway to provide service within and among the campuses of West Virginia University for both university and nonuniversity users. System innovations to be tested include (1) complete automation, (2) computer control, (3) self-service, (4) close headway operations and (5) off-line stations.

Vehicles will be rubber tired to accommodate 10-percent grade requirements and no provisions will be made for operating personnel on the vehicle. System requirements presently indicate that vehicles will be operated individually as opposed to a trained configuration. The vehicle power system will be electric.

A computer system will be used to supervise and control all operations. Vehicle start, stop, loading, unloading, switching, and all system monitoring functions will be under computer control.

The guideway will be primarily above grade, but locally on or below grade depending on terrain features. Vehicle switching and guidance is needed to enter and leave each area, merge into other guideway stations and to steer around curves in the guideway. An on-board device, rather than articulated guideways, will be used to switch each vehicle. Guidance will be accomplished by using a mechanical guide attached to the vehicle steering to follow the guideway geometry.

(2) Why Morgantown?

Since we are dealing with new systems and concepts, prospective owners and operators would be reluctant to invest large amounts of money in untried equipment and facilities. Neither could capital grants be available without experimental evidence of technological maturity.

It was decided to design, build, test and experimentally operate one of the new systems to gather information on operational cost, maintenance and public acceptance under actual service conditions and to qualify it for capital grants. This project required suitable real estate, a sizable community of potential users, the cooperation of local governments on all levels and the willingness of all participants to accept the risks of a research and development activity conducted within their midst which might affect their community in unpredictable ways.

The West Virginia University had conducted a feasibility study of a people mover system under UMTA funding to provide a dependable transportation link between their Evansdale and downtown campuses to make more efficient use of the facilities and staff. In the process, they outlined a system which in many ways corresponded to UMTA's requirements for such a project, in terms of degree of innovation and achievability of objectives. The climatic and topographic environment was sufficiently severe to be inclusive of the great majority of U.S. cities and the traffic peaks sufficiently frequent to guarantee a fairly severe operational test. The university asked UMTA for a grant to conduct the project under its own management. In preparation for this event the university had obtained assurances of full cooperation from the city of Morgantown and the county to the point that the county acquired a property to be made available as downtown terminal of the system.

In order to achieve national relevance, tighter experimental design and development of reproducible equipment, facilities and methods, UMTA decided to retain management responsibility for the project. The commonality of interest was sufficiently strong to produce agreement between UMTA and the University in which the university would make its own real estate available at no cost to the project and acquire either possession of additional properties or required right-of-way. In view of the community and university interest exhibited and of the groundwork already accomplished, UMTA found the conditions suitable for immediately starting the project activities.

HOW PEOPLE MOVER FITS OBJECTIVES

Mr. MCFALL. Would you also explain how this project fits in with your overall objectives listed on page 44, that is, accessibility of public transportation, quality of service, economic performance, and impact on the urban environment?

integrated urban mass transportation system. The lessons learned at Morgantown should be invaluable in planning a program for development of even more advanced systems.

The New Systems Program includes an effort designed to determine whether such systems have a role in urban mass transportation (a program area called New Systems Requirements Analysis) and a complementary effort (New Systems Developmental Engineering) concerned with the technological feasibility of these new systems.

The New Systems effort includes both R&D and Demonstrations, as follows:

Detail		FY 1970	FY 1971	FY 1972
		(dollars in thousands)		
3A	Research and Development	$ 1,781	$ 2,534	$ 3,000
3B	Demonstrations	1,021	15,280	36,400
	Total	$ 2,802	$17,814	$39,400

By subactivity area, the New Systems effort is comprised as follows:

Detail		FY 1970	FY 1971	FY 1972
		(dollars in thousands)		
3.1	Morgantown Demonstration	$ 20	$ 6,985	$21,400
3.2	Future New Systems Demonstrations	...	4,190	15,000
3.3	New Systems Requirements Analysis	1,200	100	1,500
3.4	New Systems Developmental Engineering	1,582	1,938	1,500
	Total	$ 2,802	$13,213	$39,400

3.1 Morgantown Demonstration — **FY 1972: $21,400,000**

Purpose of Project

During FY 1971, UMTA initiated work on what will be the first fully automatic, demand-responsive, advanced-technology transit system to be demonstrated in actual daily public service.

The Morgantown Project is intended to demonstrate the feasibility of an advanced system of public transportation and determine, through operational experience, the potential applicability of this concept to a variety of urban transportation requirements. UMTA will test and perfect the system and generate the data necessary to ensure the reproducibility and utility of the system in nationwide locations that may have similar transportation needs. The system will use a fleet of computer-controlled vehicles operating in either a passenger-demand or completely scheduled mode on a dedicated guideway between off-line stations. Service will be provided within and among the campuses of West Virginia University and to the community of

reluctance -- for whatever reason -- to go ahead and get those plans off the drawing board and into an operation demonstration project. We intend to make this an action project here in Morgantown. We will come up with a system of transportation that people will use, that will ease traffic congestion, will cut down on the rapidly-increasing volume of auto exhaust pollutants, and will set the pace for the Nation.

We are delighted to be here, and to have the chance to work in close connection with the University, the city, state government and your Congressional delegation in initiating this exciting project.

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DEPARTMENT OF TRANSPORTATION | NEWS

OFFICE OF THE SECRETARY

WASHINGTON, D. C. 20591

FOR IMMEDIATE RELEASE
Thursday, September 24, 1970

DOT -- 20870
Phone: (202) 426-4321

Secretary of Transportation John A. Volpe today announced a $90,000 grant to the University of West Virginia to design an urban transportation "people mover."

The "people mover," which is expected to be in operation by late 1972, initially will connect the University's downtown campus with the engineering school and the medical school. The Department of Transportation will make more than $13 million available for the project.

Secretary Volpe announced the grant and project today in Morgantown, West Virginia.

"This system--which we call a 'people mover' for lack of a better name--will provide fast, clean, efficient transportation," Secretary Volpe said. "The system in Morgantown will be the first of a series of projects to develop and test a high-capacity, automated personal transit system.

"It will be a breakthrough, a great step forward in the Department of Transportation's quest for better mobility and improved accessibility."

The $90,000 grant will provide first year funding for the engineering and design data. The grant was made through the Department's Urban Mass Transportation Administration, headed by Carlos C. Villarreal, who accompanied Secretary Volpe to Morgantown.

"This is an important occasion for those of us concerned with urban mobility," Villarreal said. "The announcement of this grant today means we're moving from study to action, from thinking to doing.

"Before the end of 1972, we hope to have this experiment carrying students, professors and others on 3.2 miles of guideway on 90 fully automated cars at speeds up to 25 miles per hour."

Under terms of the grant, West Virginia University will define the system and determine the locations for the six planned stations. In cooperation with the Jet Propulsion Laboratory of the California Institute of Technology at Pasadena, California, the project's system manager, the University also will determine the location of the guideway and related ground facilities.

"For too long," Secretary Volpe declared, "transportation experts have talked about new directions and have drafted blueprints and even built working models. But there has been a reluctance--for whatever reason--to go ahead and get those plans off the drawing board and into an operation demonstration project. We intend to make this an action project in Morgantown."

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APPENDIX H

T W X -- Dated, October 6, 1970 (9:30 AM)

Your P.O. GP 539249 is hereby terminated in its entirety for the convenience of the Institute pursuant to Article GP-35. Termination for the convenience of the general provisions of the P.O. concerning our verbal agreement of October 2, 1970. The effective date of this termination is 12:00 noon September 28, 1970, except to the extent that you are a subcontractor wish to retain or continue for your own account any work in process or other material -- all work should have been stopped and all subcontracts terminated as of the above date. Letter and instructions will follow. Immediate written acknowledgement of this TWX is requested.

Signed: M. R. McClain
Manager Procurement Division
J.P.L.
Pasadena, California

APPENDIX I

MORGANTOWN PROJECT
REQUIREMENTS AND CONSTRAINTS
DOCUMENT
(TRD 100-1)

1200-17 December 21, 1970

APPROVED BY:

Howard H. Haglund, Project Manager
Morgantown Project
Jet Propulsion Laboratory

Dr. Sammy E. G. Elias, Project Director
Morgantown Project
West Virginia University, Morgantown

James B. Winn, Program Manager
Morgantown Project
DOT/UMTA

The requirement shall be interpreted under the following assumptions:

a) Movement is considered one-way only from the Towers Station to the Beechurst Station. Under this interpretation, service is not being provided to other stations.

b) Passenger flow and the fare collection system shall be designed not to limit vehicle queueing and motion.

c) The first vehicle loads at the platform at the beginning of the 10-minute period.

d) The last vehicle shall unload at the Beechurst Station platform at the end of the 10-minute period.

3) The system shall be capable of serving the traffic demands listed in Tables 3-1 and 3-2, as furnished by West Virginia University, under the constraint that the travel time between Station No. 2 and Station No. 3 shall not exceed six minutes in either direction during normal scheduled mode operations where travel time shall be measured from the time a passenger enters the origin station until he leaves the exit station.

4) The system shall be capable of operating at speeds which can meet the above traffic demands, considering the criteria and requirements for safety, passenger comfort, service performance, noise levels, routing, and route grades specified in this document.

APPENDIX G

DEPARTMENT OF TRANSPORTATION | NEWS

OFFICE OF THE SECRETARY

WASHINGTON, D. C. 20591

55-S-70

EXCERPTS OF REMARKS BY U.S. SECRETARY OF TRANSPORTATION JOHN A. VOLPE
MORGANTOWN, WEST VIRGINIA, THURSDAY, SEPTEMBER 24, 1970, 2:00 P.M.

I am delighted to be here. This is my first official trip to West Virginia since becoming Secretary of Transportation. I am reminded often and emphatically that West Virginia is indeed vitally interested in improved transportation services.

We are here today to announce the beginning of a great breakthrough in transportation. It's not something with a lot of glamour like a metroliner or a 300-mile-an-hour tracked air cushion vehicle, but it is a project that will -- in the years ahead -- certainly have a profound effect on the lives of every man, woman and child living in the great congested urban areas of this nation.

Our cities are the economic and cultural hubs of our society, yet our cities are in a state of crisis -- largely because of creeping paralysis afflicting downtown circulation and distribution of people and goods.

Too many cities are chocked with congestion, with air pollution -- with too many people trying to get to too many places in too much of a hurry, utilizing inadequate, antiquated facilities. We need new thinking, new technologies

We are today announcing a $90,000 grant to West Virginia University to plan, develop, and construct just such a radical new mode of automated personal transportation.

This system -- which for lack of a better name we still refer to simply as a "people mover" -- will initially connect the University's downtown campus with the engineering school and the medical school.

It will provide fast, clean, efficient transportation. It will be fully automated. It will be a breakthrough -- a great step forward in our quest for better mobility and improved accessibility.

The initial $90,000 will provide first-year funding leading to engineering design data on the configuration, location, demand characteristics and station design of the system. We have contracted with the jet propulsion laboratory of Pasadena, California, to serve as systems manager for this first phase. Their expertise as the Nation's foremost systems management organization will be invaluable. The University's role will be to define the system and major subsystem requirements.

For too long, transportation experts have talked about new directions, and have drafted blueprints and even built working models. But there has been a

5) The design shall ensure that adequate parking exists in order to demonstrate the auto-intercept concept. As a minimum, there shall be spaces provided for parking 1000 automobiles at each of the Medical Center and Coliseum areas.

B. BASELINE ROUTE

1) The system shall provide service to the following six stations:

Station 1. County Court House (Walnut Street).
Station 2. Main campus Armstrong building (Beechurst Street).
Station 3. Engineering science buildings.
Station 4. Coliseum.
Station 5. Towers dormitories.
Station 6. Medical Center and County Hospital.

It should be noted that the Medical Center area is required to demonstrate the auto-intercept concept and the Coliseum area is required to demonstrate system traffic merging from different activity areas.

2) The route selected shall permit the connection of the six stations listed above by a double guideway structure. The location of the route selected shall be based on a minimum of community and campus disruption and it shall be based on system compatibility with surrounding landscape and architecture."

Table 3-1. Traffic demand first peak, 7:50 a.m. to 8:00 a.m.

Origin Stations	Destination Stations					
	1	2	3	4	5	6
1 (Walnut Street)	0	N.A.	40	15	50	35
2 (Beechurst)	N.A.	0	175	30	200	10
3 (Engineering Bldg.)	N.A.	50	0	N.A.	N.A.	N.A.
4 (Coliseum)	60	25	15	0	N.A.	N.A.
5 (Towers Dormitories)	50	800	70	30	0	N.A.
6 (Medical Center)	N.A.	N.A.	N.A.	N.A.	50	0

N.A. = Not available; however, travel between the stations so noted is not expected during this time period.

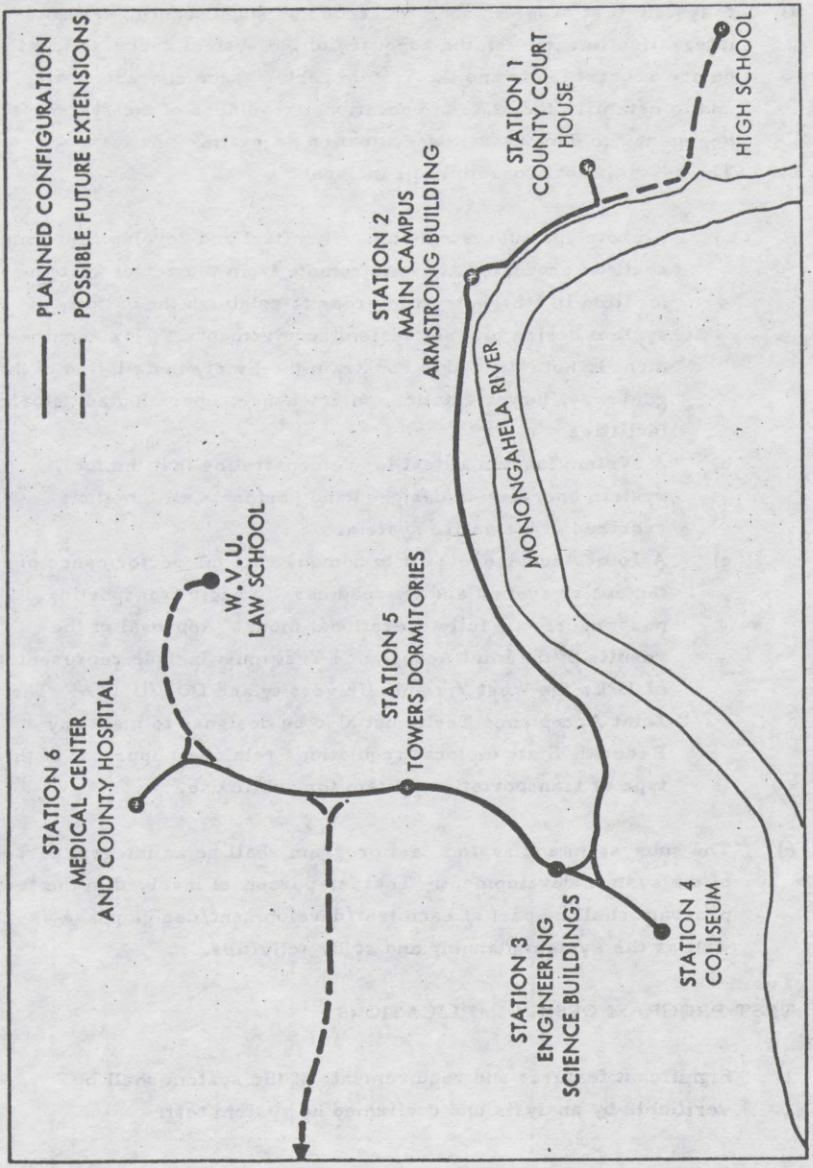

Fig. 3-1. Planned configuration and possible future extension

4) A system test program shall be conducted subsequent to system integration to establish the adequacy of the system design to meet design requirements and the system performance characteristics, and to establish the state of operational readiness of the system for beginning the demonstration/evaluation program.

5) The system test program shall include:

a) A prototype subsystem and system test and development program shall be conducted at a site remote from the actual system location in Morgantown in order to establish the validity of system design to meet system requirements. This requirement is not intended to constrain the timely installation of the guideway, power, station, maintenance, operation and storage facilities.

b) A system functional test for demonstrating that the total system operates as designed and performs all functions required of the entire system.

c) A Joint Acceptance Test to demonstrate the performance of the entire system and its readiness to begin transporting passengers in a fully operational mode. Approval of the results of the Joint Acceptance Test must include representatives of JPL, the West Virginia University and DOT/UMTA. The Joint Acceptance Test must also be designed to meet any Federal, State or local regulations related to approval of this type of transportation system for public use.

6) The subsystem and system test program shall be an integral part of the system development. That is, personnel involved in the test program shall be part of each test/development/design phase as well as the system planning and study activities.

B. TEST PROGRAM DESIGN IMPLICATIONS

1) Significant features and requirements of the system shall be verifiable by analysis and confirmed by system test.

SECTION VIII

SYSTEM DEMONSTRATION AND EVALUATION

A. SYSTEM DEMONSTRATION AND EVALUATION PROGRAM PURPOSE AND SCOPE

1) System Demonstration and Evaluation program shall be performed for the purpose of establishing the level of achievement of the Project Objectives (Section II) and the Project Requirements (Section III). In addition, system demonstration and evaluation shall be oriented toward providing parametric information on the engineering performance, reliability, economic and public acceptance characteristics which will enable communities and urban activity centers to examine the feasibility of utilizing the Morgantown transportation concept to help solve their transportation problems.

2) System demonstration and evaluation shall be performed during two operational phases subsequent to the Joint Acceptance Test described in Section VII.

   The first operational evaluation phase, termed initial demonstration, shall be completed within the first 6 months following the completion of the Joint Acceptance Test. The second operational demonstration shall be completed within the first 18 months following completion of the initial demonstration phase.

3) The initial demonstration phase shall be devoted to an early establishment, under actual operating conditions, of the level of achievement of meeting actual traffic demands.

4) The initial demonstration shall provide information to determine if refinement of system control functions for optimal operating conditions is possible.

5) The initial demonstration phase shall also provide information regarding schedule vs demand mode conditions to meet actual operating needs.

APPENDIX J

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION

WASHINGTON, D. C. 20591

URBAN MASS TRANSPORTATION DEMONSTRATION GRANT CONTRACT

BETWEEN THE

WEST VIRGINIA BOARD OF REGENTS FOR

WEST VIRGINIA UNIVERSITY, MORGANTOWN,

WEST VIRGINIA

AND THE

UNITED STATES OF AMERICA

PART I

Project No. TRD-100-2
Contract No.

THIS CONTRACT, consisting of this Part I, and the terms and conditions (form DOT-UMTA-5, dated 7-68) forming Part II hereof (which together are herein called the "Contract"), effective on the date herein below specified, by and between the United States of America (herein called the "Government") and the West Virginia Board of Regents — for West Virginia University, Morgantown, West Virginia — (herein called the "Public Body") WITNESSETH:

In consideration of the mutual covenants, promises, and representations herein, the parties hereto agree as follows:

Sec. 1. Purpose of Contract — The purpose of this Contract is to provide for the undertaking of an urban mass transportation research demonstration effort with Government financial assistance to the Public Body in the form of a research demonstration grant (herein called the "Grant"), under Section 6 of the Urban Mass Transportation Act of 1964, as amended, and to state the terms and conditions upon which such assistance will be provided and the understandings as to the manner in which the effort of the Public Body will be undertaken and completed.

Sec. 2. The Project — The Public Body agrees to participate in the Project described in the Requirements and Constraints Document dated December 21, 1970, relating to the transit system and subsequent changes thereto. The document was jointly generated by the Public Body, UMTA, and the Jet Propulsion Laboratory (JPL). UMTA will follow these requirements in providing a system to be tested for its capital grants program, as well as in providing the City of Morgantown and the Public Body, with a solution to their internal transportation problems, and relief to their growing traffic congestion.

UMTA will provide the required funding for the Project which consists of the design, development, installation, and experimental operation of the system, and has as a primary objective, designing and building a system which minimizes the costs of operation and maintenance, within the framework of the Requirements and Constraints Document dated December 21, 1970.

UMTA will test and perfect the system, and generate the data necessary to ensure the reproduceability and utility of the system in nation-wide locations that may have similar transportation needs.

The rights and responsibilities of the Public Body under this Project are as follows:

a) Although final design responsibility will rest with the Government, UMTA will be responsive to the suggestions and opinions of the Public Body with regard to system design features, within the constraints of the Project objectives, schedule, and budget;

b) The design of those features which affect the architectural appearance of the system will be submitted to the Public Body for review and recommendations as to changes. These recommendations will be considered by UMTA to the extent possible;

c) Possession of all Project-connected facilities and equipment shall vest in the Public Body after completion of the demonstration phase, expected in the fall of 1974. The Public Body may request removal of the facilities, if the system does not meet the performance specifications and cannot be brought up to minimum performance standards within one year. Under these circumstances UMTA will take the necessary steps to remove the facilities;

In order to meet these performance specifications the system shall be capable of:

(1) transporting 1,100 passengers between Beechhurst and Towers Stations within 20 minutes

(2) operating satisfactorily in a demand-responsive as well as a scheduled mode

(3) performing all system functions under normal operating conditions without the use of operational personnel aboard the vehicles

(4) operating under all weather conditions as specified in the Requirements and Constraints Document

(5) operating and maintenance costs are acceptable to the Public Body

d) The Public Body, in cooperation with the systems manager selected by UMTA, will define the system and major subsystem requirements to form the basis of the system design for the demonstration Project;

e) The Public Body in cooperation with the system manager selected by UMTA, will establish the location of the guideway, including stations, maintenance shops, and other Project related ground facilities;

f) The Public Body will perform the required work to arrange for acquisition of the necessary right-of-way and will make it available to UMTA when needed, at no cost to the Project;

g) The Public Body will provide liaison with local governments participating in, and affected by the demonstration Project to determine their needs and constraints, and to make this information available in suitable form, to the system manager selected by UMTA;

h) The Public Body will hold a public hearing at which anyone with a social, economic or environmental interest in the Project, will be given an opportunity to be heard;

i) In order to avoid delays in Project execution, the Public Body will name an officer who can act on behalf of the Public Body in regard to this Project, and an alternate individual or individuals who can act in the absence of the officer, to ensure the continuous availability of a spokeman for the Public Body at all times during the system development and demonstration effort;

j) The Public Body will start immediately to develop the capability required to take on the operating responsibility of the new transportation system at the completion of the demonstration;

k) The Public Body will prepare and publish a comprehensive report on the results of the Project, the conclusions reached and the methods utilized;

l) The Public Body' obligation for rendering the above services shall cease upon expiration of Federal funding of the Public Body's effort.

Sec. 3. The Grant - In order to assist the Public Body in this effort, which cost is estimated to be Ninety Thousand Dollars ($90,000) during the time period of September 1, 1970, to June 30, 1971, the Government will make a Grant in the mixiumum amount of Ninety Thousand Dollars ($90,000).

Sec. 4. Patent Rights - In the event that any invention, improvement or discovery may be conceived or first actually reduced to practice by the Public Body or its consultants or employees, or by any contractor working for or under direction of the Public Body, or employees or consultants of such contractor in the course of or under this Contract, DOT shall promptly be given written notice thereof, which notice shall include complete information concerning the invention, improvement or discovery. Any such invention, improvement or discovery, together with all information, designs, specifications, know-how, patent rights, and findings in connection therewith which arose or were developed in the course of the performance of this Contract or any subcontract hereunder, shall be made available to the public through dedication, assignment to the Government, or such other means as the Secretary shall determine.

The Public Body agrees (1) to cooperate in the preparation and prosecution of any domestic or foreign patent applications which the Government may decide to undertake covering any such invention, improvement or discovery, (2) to execute any and all papers and other documents requisite to prosecuting such patent applications and making the same available to the public by assignment to the Government, dedication or otherwise, and (3) to secure the cooperation of technical personnel (including employees, consultants and contractors) working for or under the direction of the Public Body in connection with this Contract, in the preparation and execution of all such papers as may be required in the prosecution of such patent applications and the disposition of rights thereunder pursuant to this section.

The Public Body shall disclose, in the final report herein provided for, all inventions, improvements and discoveries in the performance of this Contract or in any subcontract hereunder, and shall certify on the last page of such report that to the best of its knowledge and belief such disclosure has been made therein.

The Public Body shall require provisions, satisfactory to DOT, appropriate to effectuate the purposes of this section in all contracts entered into by it with any person, firm, corporation or association whose services or undertakings are to be paid for in whole or in part with funds to be furnished by the Government under this Contract.

Sec. 5. Publication, Reproduction, and Use of Project Reports - All published reports, data and other materials prepared as part of the Project, except those prepared exclusively for internal use of the Public Body, shall contain an appropriate notice of the Grant provided by DOT under this Contract. No such publication shall be made without the written consent of DOT; and such materials shall not be subject to copyright in the United States or in any other country. The Government shall have unrestricted authority to publish, disclose, distribute and otherwise use, in whole or in part, any reports, data, or other materials prepared with Project Funds.

Sec. 6. Labor Protections - The Public Body agrees that the following terms and conditions shall apply for the protection of employees of Mountaineer Bus Company and Star Bus Company and any other employees in the mass passenger transportation industry in the service area of the Project:

a) The Project shall be carried out in such a manner and upon such terms and conditions as will not in any way adversely affect employees of Mountaineer Bus and Star Bus or any other employees in the mass passenger transportation industry within the service area of the Project;

b) All rights, privileges and benefits (including pension rights and benefits) of employees (including employees already retired) shall be preserved and continued;

c) No employee shall be laid off or otherwise deprived of employment or placed in a worse position with respect to compensation, hours, working conditions, fringe benefits, or rights and privileges pertaining thereto at any time during his employment as a result of the Project, including any program of efficiencies or economies directly or indirectly related thereto. An employee shall not be regarded as deprived of employment or placed in a worse position with respect to compensation, etc., in case of his resignation, death, retirement, dismissal for cause, or failure to work due to disability or discipline;

d) The Public Body shall be financially responsible for any such deprivation of employment or other worsening of employment position as a result of the Project;

e) In the event an employee is terminated or laid-off as a result of the Project, he shall be granted priority of employment or reemployment to fill any vacant position for which he is, or by training or retraining can become qualified. In the event training or retraining is required by such employment or reemployment, the Public Body shall provide or provide for such training or retraining at no cost to the employee, and such employee shall be paid, while training or retraining, the salary or hourly rate of his former job classification or that of the classification for which he is training, whichever is higher;

f) The rights, privileges and benefits contained in the provisions of the Order of the Interstate Commerce Commission, in Finance Docket No. 15920, New Orleans Union Passenger Terminal Case, 282 ICC 271, January 16, 1952, will apply to any employee of the System whose position with respect to his employment is worsened as a result of the Project. The phrase "as a result of the Project" as used herein shall include events occurring in anticipation of, during, and subsequent to the Project;

g) These conditions shall be subject to the legal limitations, if any, of the Public Body. In the event any provision of these conditions is held to be invalid or otherwise unenforceable, the Public Body, the employees and/or their representatives may invoke the jurisdiction of the Secretary of Labor to determine substitute fair and equitable employee protective arrangements which shall be incorporated in these conditions;

h) The Public Body agrees that any controversy respecting the effect of the Project upon employees, the interpretation or application of these conditions, and the disposition of any claim arising thereunder may be submitted by the employees, or their representative, to the determination of the Secretary of Labor, whose decision shall be final;

i) The Public Body shall maintain and keep on file all relevant books and records in sufficient detail as to provide the basic information necessary to the making of such decisions;

j) The Public Body will post in a prominent and accessible place, where employees of the bus companies are employed, a notice informing such employees that the Public Body is a recipient of Federal assistance under the Urban Mass Transportation Act, and that the Public Body has agreed to comply with the provisions of Section 13(c) of the Act. The notice shall also inform employees of their right to invoke the jurisdiction of the Secretary of Labor in accordance with Item "h" above.

Sec. 7. Modification To Terms and Conditions Part II - The term Project in Part II of this contract refers to the Public Body's effort hereunder. Likewise the Project Budget is the budget for this effort.

Sec. 8. Counterparts of Contract - This Contract may be simultaneously executed in several counterparts, each of which so executed shall be deemed to be an original, and such counterparts together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the Public Body has caused this Contract to be duly executed in its behalf and, thereafter the Government has caused the same to be duly executed in its behalf this_____ day of_____1971.

SEAL

WEST VIRGINIA UNIVERSITY, MORGANTOWN, WEST VIRGINIA

ATTEST

By_____
President

_____
Title

WEST VIRGINIA BOARD OF REGENTS

By Earle T. Andrews
President

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION

By_____
Assistant Administrator
Urban Mass Transportation Administration

APPENDIX K

URBAN MASS TRANSPORTATION DEMONSTRATION GRANT CONTRACT

BETWEEN THE

WEST VIRGINIA UNIVERSITY, MORGANTOWN,

WEST VIRGINIA

AND THE

UNITED STATES OF AMERICA

PART I

Project No. TRD-100-2
Contract No. DOT-UT-546

THIS CONTRACT, consisting of this Part I, and the terms and conditions (Form DOT-UMTA-5, dated 7-68) forming Part II hereof (which together are herein called the "Contract"), effective on the date herein below specified, by and between the United States of America (herein called the "Government") and the West Virginia Board of Regents -- for West Virginia University, Morgantown, West Virginia -- (herein called the "Public Body") WITNESSETH:

In consideration of the mutual covenants, promises, and representations herein, the parties hereto agree as follows:

Sec. 1. Purpose of Contract - This Contract provides for the undertaking of an urban mass transportation research demonstration effort with Government financial assistance to the Public Body in the form of a research demonstration grant (herein called the "Grant"), under Section 6 of the Urban Mass Transportation Act of 1964, as amended, which states the terms, conditions and understandings of this effort between the parties hereto.

Sec. 2. The Project - The Personal Rapid Transit System at Morgantown is defined by the UMTA Requirements and Constraints Document which sets forth the technical objectives of the demonstrations intended for national application and defines the operations and control concept. It is understood that this Requirements and Constraints Document is being developed concurrently with the Project where continued trade offsare made between time, costs and systems performance. It is further understood and agreed that this Document is controlled by UMTA and may be revised or modified by UMTA with solicited comments by the Public Body.

The Personal Rapid Transit System at Morgantown will begin with:

a. Fifteen (15) vehicles.

b. Three stations designated as Walnut Street Station, Beechurst Station and Engineering Station and located in the general areas specified on the route Plan for Personal Rapid Transit System at Morgantown.

c. Approximately 2 miles of double track guide-way connecting the three stations.

d. Power supply system, control and communications system and related equipment and facilities required for automatic operation of the total transit system, designed to accommodate further expansion up to 100 vehicles and six stations.

e. The facilities necessary for maintenance and repair of the vehicles and the facilities necessary to accommodate the operations and control center.

UMTA will test and evaluate the system, and generate the necessary data to ensure the reproduceability and utility of the system in nation-wide locations that may have similar transportation needs. Successful completion of this Project will qualify this system concept for capital grant in appropriate locations.

The rights and responsiblities of the Public Body under this Project are as follows;

a. Although final design responsibility will rest with the Government, UMTA will be responsive to the suggestions and opinions of the Public Body with regard to system design features, within the constraints of the Project objectives, schedule, and budget;

b. The design of those features which affect the architectural appearance of the system will be submitted to the Public Body for review and recommendations as to changes. These recommendations will be considered by UMTA to the extent possible;

c. Possession of all Personal Rapid Transit System-connected facilities and equipment shall vest in the Public Body after completion of the UMTA Technical Evaluation of the system. The Public Body may request removal of the facilities, if the system does not meet the intent of the specifi-

cations described hereafter and cannot be brought up to minimum performance standards within one year. Under these circumstances UMTA will take the necessary steps to remove the facilities;

In order to meet the specifications the system shall be capable of:

(1) a transport rate equivalent to 1,100 passengers in a 20 minute period from the Beechurst Station to the Engineering Station assuming

- schedule mode operation
- cars will be fully loaded
- no passenger flow impedance through station
- travel time is included

(2) operating satisfactorily in a demand-responsive as well as a scheduled mode

(3) performing all system functions under normal operating conditions automatically

(4) operating under all weather conditions under which normal surface transit system continue to operate

(5) *See * below.*

d. Operating and maintenance costs will be primarily a function of the vehicle miles traveled and the size of the fleet. Other factors to be considered in the operating and maintenance costs will be (a) learning curve, (b) maintenance costs of equipment, (c) electric power. Items not to be included are vandalism costs, university overhead, capital amortization. A final determination of the projected system operating and maintenance costs shall be made at the end of the test period.

e. The Public Body will acquire the necessary right-of-way and will make it available to UMTA when needed, at no cost to the Project;

f. The Public Body will provide liaison with local governments participating in, and affected by the Personal Rapid Transit Project to determine their needs and constraints, and to make this information available in suitable form, to UMTA;

*(5) *Operating and maintenance costs shall be reasonable and acceptable to the Public Body.*

g. The Public Body will hold a public hearing at which anyone with a social, economic or environmental interest in the Project, will be given an opportunity to be heard;

h. In order to avoid delays in Project execution, the Public Body will name an officer who can act on behalf of the Public Body in regard to this Project, and an alternate individual or individuals who can act in the absence of the officer, to ensure the continuous availability of a spokeman for the Public Body at all times during the system development and demonstration effort;

i. The Public Body will start immediately to develop the capability required to take on the operating responsibility of the new transportation system at the completion of the demonstration;

j. The Public Body will prepare and publish a comprehensive report on the results of the Project, the conclusions reached and the methods utilized;

k. The Public Body's obligation for rendering the above services shall cease upon acceptance by the Public Body of the systems.

Sec. 3. The Grant - In order to assist the Public Body in this effort, which cost is estimated to be Two Hundred Thirty Thousand Dollars ($230,000) during the time period of September 1, 1970, to June 30, 1972, the Government will make a Grant in the amount of Two Hundred Thirty Thousand Dollars ($230,000).

Sec. 4. Patent Rights - In the event that any invention, improvement or discovery may be conceived or first actually reduced to practice by the Public Body or its consultants or employees, or by any contractor working for or under direction of the Public Body, or employees or consultants of such contractor in the course of or under this Contract, DOT shall promptly be given written notice thereof, which notice shall include complete information concerning the invention, improvement or discovery. Any such invention, improvement or discovery, together with all information, designs, specifications, know-how, patent rights, and findings in connection therewith which arose or were developed in the course of the performance of this Contract or any subcontract hereunder, shall be made available to the public through dedication, assignment to the Government, or such other means as the Secretary shall determine.

The Public Body agrees (1) to cooperate in the preparation and prosecution of any domestic or foreign patent applications which the Government may decide to undertake covering any such invention, improvement or discovery, (2) to execute any and all papers and other documents requisite to prosecuting such patent applications and making the same available to the public by assignment to the Government, dedication or otherwise, and (3) to secure the cooperation of technical personnel (including employees, consultants and contractors) working for or under the direction of the Public Body in connection with this Contract, in the preparation and execution of all such papers as may be required in the prosecution of such patent applications and the disposition of rights thereunder pursuant to this section.

The Public Body shall disclose, in the final report herein provided for, all inventions, improvements and discoveries in the performance of this Contract or in any subcontract hereunder, and shall certify on the last page of such report that to the best of its knowledge and belief such disclosure has been made therein.

The Public Body shall require provisions, satisfactory to DOT, appropriate to effectuate the purposes of this section in all contracts entered into by it with any person, firm, corporation or association whose services or undertakings are to be paid for in whole or in part with funds to be furnished by the Government under this Contract.

Sec. 5. Publication, Reproduction, and Use of Project Reports - All published reports, data and other materials prepared as part of the Project, except those prepared exclusively for internal use of the Public Body, shall contain an appropriate notice of the Grant provided by DOT under this Contract. No such publication shall be made without the written consent of DOT; and such materials shall not be subject to copyright in the United States or in any other country. The Government shall have unrestricted authority to publish, disclose, distribute and otherwise use, in whole or in part, any reports, data, or other materials prepared with Project Funds.

Sec. 6. Labor Protections - The Public Body agrees that the following terms and conditions shall apply for the protection of employees of Mountaineer Bus Company and Star Bus Company and any other employees in the mass passenger transportation industry in the service area of the Project:

a) The Project shall be carried out in such a manner and upon such terms and conditions as will not in any way adversely affect employees of Mountaineer Bus and Star Bus or any other employees in the mass passenger transportation industry within the service area of the Project;

b) All rights, privileges and benefits (including pension rights and benefits) of employees (including employees already retired) shall be preserved and continued;

c) No employee shall be laid off or otherwise deprived of employment or placed in a worse position with respect to compensation, hours, working conditions, fringe benefits, or rights and privileges pertaining thereto at any time during his employment as a result of the Project, including any program of efficiencies or economies directly or indirectly related thereto. An employee shall not be regarded as deprived of employment or placed in a worse position with respect to compensation, etc., in case of his resignation, death, retirement, dismissal for cause, or failure to work due to disability or discipline;

d) The Public Body shall be financially responsible for any such deprivation of employment or other worsening of employment position as a result of the Project;

e) In the event an employee is terminated or laid-off as a result of the Project, he shall be granted priority of employment or reemployment to fill any vacant position for which he is, or by training or retraining can become qualified. In the event training or retraining is required by such employment or reemployment, the Public Body shall provide or provide for such training or retraining at no cost to the employee, and such employee shall be paid, while training or retraining, the salary or hourly rate of his former job classification or that of the classification for which he is training, whichever is higher;

f) The rights, privileges and benefits contained in the provisions of the Order of the Interstate Commerce Commission, in Finance Docket No. 15920, New Orleans Union Passenger Terminal Case, 282 ICC 271, January 16, 1952, will apply to any employee of the System whose position with respect to his employment is worsened as a result of the Project. The phrase "as a result of the Project" as used herein shall include events occurring in anticipation of, during, and subsequent to the Project;

g) These conditions shall be subject to the legal limitations, if any, of the Public Body. In the event any provision of these conditions is held to be invalid or otherwise unenforceable, the Public Body, the employees and/or their representatives may invoke the jurisdiction of the Secretary of Labor to determine substitute fair and equitable employee protective arrangements which shall be incorporated in these conditions;

h) The Public Body agrees that any controversy respecting the effect of the Project upon employees, the interpretation or application of these conditions, and the disposition of any claim arising thereunder may be submitted by the employees, or their representative, to the determination of the Secretary of Labor, whose decision shall be final;

i) The Public Body shall maintain and keep on file all relevant books and records in sufficient detail as to provide the basic information necessary to the making of such decisions;

j) The Public Body will post in a prominent and accessible place, where employees of the bus companies are employed, a notice informing such employees that the Public Body is a recipient of Federal assistance under the Urban Mass Transportation Act, and that the Public Body has agreed to comply with the provisions of Section 13(c) of the Act. The notice shall also inform employees of their right to invoke the jurisdiction of the Secretary of Labor in accordance with Item "h" above.

Sec. 7. Modification To Terms and Conditions Part II - The term Project in Part II of this contract refers to the Public Body's effort hereunder. Likewise the Project Budget is the budget for this effort.

Sec. 8. Counterparts of Contract - This Contract may be simultaneously executed in several counterparts, each of which so executed shall be deemed to be an original, and such counterparts together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the Public Body has caused this Contract to be duly executed in its behalf and, thereafter the Government has caused the same to be duly executed in its behalf this 14th day of September 1971.

SEAL

WEST VIRGINIA BOARD OF REGENTS

ATTEST

BY Earle T. Andrews

Title

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION

By

Urban Mass Transportation Administration

APPENDIX L

3.6 Morgantown Personal Rapid Transit Sytem — **FY 1974: $10,500,000 (Transportation Systems Center $270,000)**

The primary objectives of the Morgantown PRT system are to dimension the service benefits of such a system, and to assess the institutional problems encountered in building such a system in an urban environment. Simply stated, technical feasibility has been simulated on the computer and tested on short guideways such as those constructed for the four PRT's at the 1972 International Transportation Exposition at Dulles Airport. Such factors as the costs to build, maintain and operate a PRT system; its reliability and availability over time, and the system's impact on urban congestion can only be assessed by building and operating a complete system.

Morgantown, West Virginia, was selected as the site for the demonstration because it offered a built-in ridership--the students of West Virginia University--topographic and climatic challenges; severe congestion on local roads not only at peak-hours but also during much of the day; and strong institutional support for construction of such a system on the part of state, local and university officials and the local populace. Periodically, 1,100 people need to move between campus locations in twenty minutes but cannot do so under present conditions. The PRT is designed to meet this need.

Originally conceived as a 6-station, 100-vehicle configuration, RD&D funding constraints and detailed engineering evaluation caused the program to be redefined as follows:

Phase 1A--construction of a 3-station, 5-vehicle system with limited operational software and associated equipment to test the technical feasibility of the system (October 1971-June 1973);

Phase 1B--construction of an additional 40 vehicles, development of fully operational software, and the provisioning for and demonstration of the 3-station system in revenue service (July 1973-December 1974);

Phase II-- expansion of the system to its 6-station, 100-vehicle configuration by means of a capital grant.

System design, route lay-out, soil survey and soil boring work started in the Fall of 1970. Ground-breaking ceremonies were held in October 1971 when actual construction was started, and the system was dedicated and a limited demonstration of the 5-vehicle system conducted one year later in October 1972. This October 1972 demonstration, however, satisfied only part of the system development objectives. To satisfy the demonstration objectives of the Morgantown PRT system, it is necessary to procure the Phase 1B portion of the system, an integral part of Phase 1.

At the present time, construction of the guideway and 3-station system is virtually complete, and extensive system tests of the Phase 1A system are being conducted. These are scheduled to run through May 1973 at which time negotiations for the Phase 1B effort will be initiated. The Phase 1B effort will expand the existing system by adding 40 more

APPENDIX M

Summary

PRT Characteristic Changes

CHARACTERISTIC	TYPE OF CHANGE	IMPLICATION
A. Performance		
1. Travel Times	Increased	The increased travel times may result in students being late for classes thus affecting public acceptance and patronage of the system. It also tends to increase the number of cars in the fleet required to do the same job.
2. Headway	Increased	Reduces maximum number of vehicles that can be operated, thus reduces total system capacity.
3. System Capacity	Reduced	Places a more restrictive constraint on meeting future capacity requirements as well as adequately serving present demands.
4. Traffic Demand	Fails to meet decreasingly less restrictive demands	Inability to meet two major traffic peaks will result in missed classes and therefore, decrease public acceptance and patronage.
5. Environmental Constraints	Less restrictive	Places restrictions on the adaptation of the system for other geographical locations.
6. Reliability	Reduced	Excessive downtime will reduce the public acceptance and patronage of the system.
Waiting Times	Increased	Increased waiting times will lead to a decrease in public acceptance and patronage of the system.
C. Structures/Stations		
1. Guideway		
a. Construction	Heavy	Increases construction costs and visual blight
b. Heating	Not automatic anymore	Requires additional maintenance activities
c. Refuges	Removed	Increases the impact of system downtime by increasing failed vehicle recovery time.
2. Stations		
a. Heating	Removed	Reduces passenger comfort and thus may affect public acceptance of the system.
b. Gates & Signs	Reduced	May lead to confusion in passengers unfamiliar with the system.
c. Handicapped Accommodations	Eliminated	Will place limitations on the use of the system by handicapped persons.

CHARACTERISTIC	TYPE OF CHANGE	IMPLICATIONS
/ehicle		
1. Capacity	Increased	Less personalized service.
2. Passenger Comfort Criteria	Less Comfortable	Could lead to a decrease in the public acceptance of the system.
3. Induced Environments	Less Comfortable	May lead to decrease in patronage during periods of temperature extremes.
4. Steering/ Forward & Reverse Capability	Removed	Will increase the duration of system down-time events.
5. Push/Pull Capability	Removed	Increases system downtime due to increased vehicle recovery time.
E. Safety		
1. Vehicle Operations Safety	Reduced	Decreases public's feeling of security when using the system.
2. System Operation Safety	Reduced	May lead to increased vandalism.
F. Testing And Demonstration	Reduced from 2 years to zero	May lead to excessive failures during initial operation thus affecting public acceptance of the system.
G. Operations	Management Information System Reduced in Scope O&M increased	Decreased the effectiveness of system operation.
H. Maintenance		
1. Facilities	Reduced to bare minimum	Reduces effectiveness of maintenance activities-constrains expansion capabilities.
2. Building Space	Reduced to bare minimum	Reduces effectiveness of maintenance activities-constrains expansion capabilities.
3. Storage Facilities	Reduced to bare minimum	Reduces effectiveness of maintenance activities-constrains expansion capabilities.

APPENDIX N

Attachment A-1

Morgantown PRT Capital Grant
Estimate
(Dollars in Thousands)

Facility Construction	Planning Estimate	Sub Total
A&E	$ 1,357	
Guideway	16,643	
Power Distribution & Electrification	2,511	
Station	3,129	
Maintenance Area	770	$24,410
Equipment Services		
Control & Communications System	$6,525	
Vehicles	3,238	
Installation & Check Out	2,246	
System Management	1,465	
System Definition	158	$13,632
Sub Total		38,042
Fee 7 1/2 %		2,853
Warranty		4,714
W. V. U. Staff		1,008
Sub Total		$46,617
Contingency		2,383
GRAND TOTAL		$49,000

APPENDIX O

Department of Transportation
Urban Mass Transportation Adm.
Washington, D.C. 20590

PRECEDENCE
ACTION P
INFO
TYPE OF MESSAGE
☐ SINGLE ☐ BOOK
☒ MULTIADDRESS

MESSAGE TO BE TRANSMITTED (Use double spacing and all caps for letters)

TO: MR. EARLE T. ANDREWS
MEMBER, WEST VIRGINIA
BOARD OF REGENTS
PENNSYLVANIA GLASS SAND CORPORATION
BERKELEY SPRINGS, WEST VIRGINIA 25411

DEAR MR. ANDREWS:

I HAVE RECEIVED YOUR LETTER AMENDMENT OF FEBRUARY 26, 1974. THE LETTER AMENDMENT WOULD INCORPORATE THE SPECIFICATION INTO THE CONTRACT, BUT IT WOULD NOT ACCOMPLISH OTHER MATTERS THAT MUST BE RESOLVED IF WE ARE TO BE ABLE TO COMPLETE THE PROJECT IN A MANNER THAT PROTECTS THE INTEREST OF ALL PARTIES.

OUR AGREEMENT OF SEPTEMBER 9, 1971, HAS BEEN REVIEWED WITH EMPHASIS ON IDENTIFYING THOSE AREAS WHICH HAVE BEEN ACCOMPLISHED OR MODIFIED AS THE PROJECT HAS PROGRESSED. AN AMENDATORY AGREEMENT REFLECTING THESE MODIFICATIONS FOLLOWS UNDER SEPARATE COVER. BRIEFLY THE CHANGES ARE AS FOLLOWS:

THE PERFORMANCE/DESIGN SPECIFICATION FOR THE MORGANTOWN OPERATIONAL PRT SYSTEM, DATED

Department of Trans rtation
Urban Mass Transportation Adm.
Washington, D.C. 20590

ACCOUNTING CLASSIFICATION
074-01-60.01.02.00 63000 2334

THIS BLOCK FOR USE BY COMMUNICATIONS UNIT

PRECEDENCE
ACTION: P
INFO:
TYPE OF MESSAGE
☐ SINGLE ☐ BOOK
☒ WITH ADDRESS

MESSAGE TO BE TRANSMITTED (Use double spacing and CAPITAL letters)

NOVEMBER 6, 1973, IS SUBSTITUTED FOR THE REQUIREMENTS AND CONSTRAINTS DOCUMENT. THIS NEW DOCUMENT SETS FORTH THE TECHNICAL REQUIREMENTS OF THE SYSTEM, AND CAN ONLY BE CHANGED WITH CONCURRENCE BY THE UNIVERSITY.

THE NUMBER OF VEHICLES PROVIDED IS INCREASED FROM 15 TO 45.

THE RIGHTS AND RESPONSIBILITIES OF THE UNIVERSITY ARE CLARIFIED BY RECOGNIZING THAT UMTA AND THE SYSTEMS CONTRACTOR HAVE ESTABLISHED A COMPREHENSIVE SERIES OF ACCEPTANCE TESTS. THESE TESTS ARE DESIGNED TO VERIFY COMPLIANCE WITH THE SYSTEM CHARACTERISTICS IDENTIFIED IN THE DETAILED REQUIREMENTS OF THE PERFORMANCE/DESIGN SPECIFICATION.

SUCCESSFUL COMPLETION OF ACCEPTANCE TESTING SHALL CONSTITUTE THE "UMTA TECHNICAL EVALUATION"

Department of Transportation
Urban Mass Transportation Adm.
Washington, D.C. 20590

PRECEDENCE
ACTION
INFO P
TYPE OF MESSAGE
☐ SINGLE ☐ BOOK
☒ MULTI-ADDRESS

ACCOUNTING CLASSIFICATION
074-01-00.01.03.00.63000 2334

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MESSAGE TO BE TRANSMITTED (Use double spacing and all caps for letters)

AND ACCEPTANCE BY UMTA SHALL CONSTITUTE ACCEPTANCE OF THE SYSTEM BY THE UNIVERSITY. UMTA WILL TAKE NECESSARY STEPS TO REMOVE THE SYSTEM, AT THE REQUEST OF THE UNIVERSITY, IF THE SYSTEM FAILS THE UMTA ACCEPTANCE TESTS AND CANNOT BE MADE TO SATISFY THE UMTA SPECIFICATION REQUIREMENTS WITHIN ONE YEAR FROM SCHEDULED ACCEPTANCE TEST COMPLETION, NOW PLANNED FOR APRIL 1975.

IT IS UNDERSTOOD THAT THE PARTIES HAVE AGREED TO THE MAXIMUM ACCEPTABLE OPERATING AND MAINTENANCE COSTS AND ITS TEST CRITERIA. THESE COSTS WILL NOT EXCEED $350,000 PER YEAR FOR THE SYSTEM AND, ALONG WITH CONVEYANCE DEPENDABILITY AND SAFETY, WILL BE VERIFIED BY ANALYSIS AT CRITICAL DESIGN REVIEW (CDR).

I REALIZE THAT THE PERFORMANCE OF THE SYSTEM WILL HAVE AN IMPORTANT IMPACT ON THE FUTURE OF MASS TRANSPORTATION.

Department of Transportation
Urban Mass Transportation Adm.
Washington, D.C. 20590

ACCOUNTING CLASSIFICATION
074-01-60.21.02.00 63000 2334

PRECEDENCE
ACTION
INFO P
TYPE OF MESSAGE
☐ SINGLE ☐ BOOK
☒ MULTI-ADDRESS

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MESSAGE TO BE TRANSMITTED (Use double spacing and all capital letters)

I ALSO RECOGNIZE THE TYPICAL PROBLEMS ASSOCIATED WITH THE INITIAL OPERATION OF ALL NEW SYSTEMS, BOTH PROCEDURAL AND HARDWARE RELATED. I HAVE, THEREFORE, DISCUSSED WITH THE PROJECT OFFICE THE ADVANTAGES OF SUPPORTING THE INITIAL WEST VIRGINIA UNIVERSITY OPERATING PERIOD WITH THE BOEING DESIGN TEAM. I HAVE CONCLUDED THAT, WITH YOUR CONCURRENCE AND CONTRACTUAL ASSISTANCE, UMTA WOULD FUND A 12-MONTH LEVEL-OF-EFFORT SUPPORT BY THE BOEING AEROSAPCE COMPANY. THE 12-MONTH PERIOD WOULD BEGIN AT THE COMPLETION OF ACCEPTANCE TESTING AND WOULD SUPPORT WEST VIRGINIA UNIVERSITY'S INITIAL REVENUE OPERATIONS. A CADRE OF KEY BOEING TECHNICAL PERSONNEL WOULD ASSIST THE WEST VIRGINIA UNIVERSITY DURING THE FIRST YEAR OF OPERATION TO AID IN OPTIMIZING OPERATIONAL PROCEDURES, MAINTENANCE PRACTICES AND RELATED ACTIVITIES. BOEING'S ROLE WOULD BE TO ADVISE AND ASSIST WEST VIRGINIA UNIVERSITY IN THE CONDUCT OF OPERATIONS AND IN DEVELOPING SOLUTIONS TO UNIQUE OPERATIONAL PROBLEMS. DURING THIS TIME, UMTA WILL CONDUCT A SYSTEM DEMONSTRATION STUDY

Department of Transportation
Urban Mass Transportation Adm.
Washington, D.C. 20590

ACTION NO. P

TYPE OF MESSAGE ☐ SINGLE ☐ BOOK ☐ MULTI-ADDRESS

ACCOUNTING CLASSIFICATION
074-01-60.01.02.00 63000 2334

THIS BLOCK FOR USE OF COMMUNICATIONS UNIT

SECURITY CLASSIFICATION

TELEGRA

OFF
U. S

MESSAGE TO BE TRANSMITTED (Use double spacing and all capital letters)

TO GATHER DATA NECESSARY TO ESTABLISH USER ACCEPTANCE AND SYSTEM ECONOMICS. THESE ARRANGEMENTS WOULD BE ACCOMPLISHED THROUGH A SEPARATE GRANT TO THE UNIVERSITY WHICH WOULD IN TURN CONTRACT FOR THE SERVICES.

IT IS MY SINCERE HOPE THAT YOU CAN EXECUTE THE CONTRACT SO THAT THE SYSTEM CAN BE COMPLETED, TESTED AND DELIVERED AS PLANNED. IF THE UNIVERSITY DOES NOT WISH TO ACCEPT THE SYSTEM I WILL HAVE NO ALTERNATIVE BUT TO REDIRECT OUR EFFORTS TO MAXIMIZE OUR RESEARCH INVESTMENT AND PROVIDE FOR THE DISASSEMBLY OF THE FACILITY. I WOULD REQUEST THAT YOUR REPLY BE PROVIDED BY NOON FRIDAY, MARCH 29, 1974, BECAUSE OF THE CRITICAL TIMING IN THE COSTLY VEHICLE AND CONTROL SYSTEM PRODUCTION.

IF YOU HAVE ANY QUESTIONS OR COMMENTS PLEASE CONTACT ME, OR IN MY ABSENCE, MS. SALLYANNE PAYTON, THE URBAN MASS TRANSPORTATION ADMINISTRATION CHIEF COUNSEL.

SINCERELY,

DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION
WASHINGTON, D.C. 20590

MAR 2 1 1974

Mr. Earle T. Andrews
Member, West Virginia
Board of Regents
Pennsylvania Glass Sand Corp
Berkely Springs, West Virginia 25411

Re: Project No. TRD-100-2
Amendment No. 2

Dear Mr. Andrews:

As indicated in Mr. Herringer's telegram of 21 March, 1974, enclosed are five counterparts of the amendment to the project of the West Virginia University, Morgantown, West Virginia.

The counterparts should be executed in accordance with appropriate procedures of the Board of Regents and returned to this Administration with an opinion of its Legal Counsel approving the validity of the procedures and the execution of the amendment, and also including certification with respect to any legislation or litigation which might affect the consummation of the project in accordance with the terms of the contract as amended.

Sincerely,

Sallyanne Payton

Sallyanne Payton
Chief Counsel

cc: Dr. James Harlow, President

Enclosures

34-206 O - 74 - pt.2 - 35

URBAN MASS TRANSPORTATION

AMENDATORY AGREEMENT

Project No. WV-06-0006 (TRD-100-2)

AMENDMENT TO URBAN MASS TRANSPORTATION DEMONSTRATION GRANT CONTRACT

This Amendatory Agreement by and between the West Virginia University (herein called the "University") and the United States of America (herein called the "Government") WITNESSETH:

WHEREAS, the parties have entered into a Mass Transportation Demonstration Grant Contract as of the 4th day of September 1971, subsequently amended as of the 29th day of September 1972, pursuant to which the University agreed to undertake a Mass Transportation Demonstration Project and the Government agreed to provide financial assistance to the University in the form of a Mass Transportation Demonstration Grant; and

WHEREAS, the purpose of this Amendment is to revise the Urban Mass Transportation Demonstration Grant Contract to include the Performance/Design Specification for the Morgantown Operational Personal Rapid Transit System, SS191-90000-3, dated November 6, 1973, and to provide additional staff support, testing, planning, public relations, and training activities and the supply of electrical power needed to test the PRT System through June 1974;

NOW, THEREFORE, in consideration of the mutual promises herein set forth, the parties hereto agree that the Mass Transportation Demonstration Grant Contract shall be amended as follows:

Sec. 1. Sec. 2 of the Contract is amended to read as follows:

"The Project

A. The Personal Rapid Transit System at Morgantown is defined by the Performance/Design Specification for the Morgantown Operational Personal Rapid Transit System, SS191-90000-3 dated November 6, 1973, (incorporated herein by reference) which sets forth the technical requirements of the System intended for national application and defines the operations and control concept.

UMTA will test and evaluate the system, and generate the necessary data to ensure the reproduceability and utility of the system in nation-wide locations that may have similar transportation needs.

B. The rights and responsibilities of the University under this Project are as follows:

1. Although final design responsibility will rest with the Government, UMTA will be responsive to the suggestions and opinions of the University with regard to system design features, within the constraints of the Project objectives, schedule, and budget;

2. The design of those features which affect the architectural appearance of the system will be

submitted to the University for review and recommendations as to changes. These recommendations will be considered by UMTA to the maximum extent possible;

3. Possession of all Personal Rapid Transit System connected facilities and equipment shall vest in the University after successful completion of the acceptance testing of the system. The University may request removal of the facilities if the system fails acceptance testing by UMTA and cannot be modified to attain specified performance requirements within one year after the scheduled completion of the acceptance testing. Under these circumstances UMTA will take the necessary steps to remove the facilities if requested to do so by the University;

4. Acceptance tests shall be conducted in accordance with Section 4, Quality Assurance, of Specification SS191-90000-3C, dated November 6, 1973, which is incorporated herein by reference, to demonstrate that production hardware has been manufactured in conformance with design documentation and that it is operating within prescribed performance tolerances.

Acceptance tests shall be conducted by the system contractor to verify to UMTA that the system meets performance requirements and upon successful completion of the UMTA acceptance testing the University agrees to accept the system in its entirety. Each production vehicle will be tested individually to demonstrate its compliance with vehicle requirements. Operation of the fleet at Morgantown shall be demonstrated utilizing operational software programs. Characteristics of the system which are not demonstrated by system level acceptance test will be satisfied by physical inspection, continuity checking, reference to previous test results at the subsystem or component level, or by analysis where this approach is technically adequate and cost effective. The following specific items are included in those System characteristics which will be verified by analysis at the Critical Design Review: conveyance dependability, safety, operation and maintenance cost;

5. The University will provide liaison with local governments participating in, and affected by the Personal Rapid Transit Project to determine their needs and constraints, and to make this information available in suitable form, to UMTA;

6. In order to avoid delays in Project execution, the University will name an officer who can act on behalf of the University in regard to this Project, and an alternate individual or individuals who can act in the absence of the officer, to ensure the continuous availability of a spokesman for the University at all times during the system development and demonstration effort;

7. The University will start immediately to develop the capability required to take on the operating responsibility of the new transportation system at

the successful completion of the acceptance test and concurrent transfer of facilities and equipment to the University;

8. The University will prepare and publish a comprehensive report on the results of the Project, the conclusions reached and the methods utilized;

9. The University's obligation for rendering the above services shall cease upon successful completion of the acceptance test, transfer of the facilities and equipment constituting the system to the University, and submittal of the above report.

Sec. 2. Sec. 3 of the Contract is amended to read as follows:

"The Grant - In order to assist the University in this effort, which cost is estimated to be Five Hundred Forty-Five Thousand Dollars ($545,000) during the time period of September 1970, to June 30, 1974, the Government will make a Grant in the amount of Five Hundred Forty-Five Thousand Dollars ($545,000)."

This Amendatory Agreement may be simultaneously executed in several counterparts, and such counterparts together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the University has caused this Contract to be duly executed in its behalf, and, the Government has caused the same to be duly executed in its behalf this _____ day of _____, 19__.

SEAL

WEST VIRGINIA UNIVERSITY
Morgantown, West Virginia

ATTEST

BY_____
President

TITLE_____

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION

BY_____
Administrator
Urban Mass Transportation Administrati

WEST VIRGINIA BOARD OF REGENTS

1316 CHARLESTON NATIONAL PLAZA
CHARLESTON, WEST VIRGINIA 25301

TELEPHONE 304 348-2101

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OKEY L. PATTESON
MOUNT HOPE
DANIEL B. TAYLOR
STATE SUPERINTENDENT
OF SCHOOLS (EX OFFICIO)

Berkeley Springs, W. Va. 25411
March 28, 1974

TELEX

Mr. Frank C. Herringer
Administrator
Urban Mass Transportation Administration
Department of Transportation
Washington, D. C. 20590

Dear Mr. Herringer:

This letter is in response to your telegram dated March 21, 1974. I feel that I must, as the representative of the West Virginia Board of Regents in the matter of the PRT System, decline to accept the terms of your offer to modify the existing contract between the Board of Regents and UMTA.

I have discussed this matter with Dr. James G. Harlow, President of West Virginia University and Dr. Samy G. Elias, as fully as the time limit set in your telegram will permit, and we are all in agreement on this point. The major reasons for our reluctance to accept the modification you offer are as follows:

We entered into our agreement, and have always understood, that the University would wind up with a full six station system extending from the center of Morgantown, West Virginia to the West Virginia University Hospital on the University Medical Center Campus. This was spelled out in the original contract proposal we had mutually agreed to but was modified in the final executed contract in deference to UMTA's need to align spending with the annual flow of budgetable funds. It was understood by the parties that the full six station system would be provided even though the second phase might well have to be constructed through capital grant funding. On the strength of the promise of the United States Government to provide the complete system the Board expended substantial sums of money, and used its power of eminent domain, in acquiring various rights-of-way for the project. This was in addition to supplying several rights-of-way over land the Board already owned. Similarly, the West Virginia Department of Highways, the County Court of Monongalia County, the City of Morgantown, and the Monongalia County Board of Education all supplied land and rights-of-way for the project.

The existing system runs from the City of Morgantown to the Engineering Sciences Building, about halfway to its planned terminus. The latter station is not designed as a terminal and is totally inadequate to serve such function. Further, it is too remotely removed from the Towers Student Dormitory Complex to serve a useful purpose in that respect. The bus systems would have to be maintained to provide adequate transport facilities for the students among the three University campuses. As you know, the PRT System was changed from a West Virginia University to an UMTA project to be constructed on property to be supplied by the Board and other local agencies. You also know when UMTA preempted our right to approve the system design it gave us the existing contract to assure us that the end product would be a viable one.

There is no provision in your proposed modification for taking care of the system, other than the solving of problems of an operational nature during the initial year of operation. We feel that many problems involving design, failures, and necessary modifications will present themselves during the real testing period, that is, when the system is actually in service and carrying passengers. This is almost without exception the history of any unique engineering project no matter how intelligently and carefully a forecast has been made on the basis of an integration of known data relevant to a multiplicity of component elements. It is this historical truism that gives us concern. It was our understanding that UMTA would support the system during the first year of operation in taking care of such critical problems which might arise. We further understood that UMTA intended to use the system as a demonstration project which, of course, implies public use and reaction. As the installation now stands it can serve only as a testing stand for design and equipment evaluation. If Phase One is completed, while it will not serve as a viable transportation entity to meet the needs of the University and the people of the area, it should well serve as a research and demonstration vehicle for UMTA, which was the Department of Transportation's intent and publicly avowed purpose in undertaking the Morgantown PRT.

While we want to cooperate with your agency in every feasible manner, we are frankly concerned that if we agree to the modification of the contract suggested by you that we will have a system on our hands that, while it may meet your specifications, will not operate satisfactorily under actual conditions. If the cause of the failure were a "unique operational problem" your suggestion that you provide a grant for a Boeing "back-up" design team for the first year of operation might take care of it. But we do not know what the quoted phrase actually means, and it does not appear to include design, hardware, software, or other possible failures of a critical nature. In any of such cases the correction of the defects

may well require the expenditure of large sums of money which the Board would not have at its disposal. We cannot conceive that your agency, after having expended the large sums required to construct the system, would even consider turning it over to us for the first year of operation under these conditions. We have thought, and still think, that the first year of operation would be part of the research and development phase of the project. If your agency should construct the system and turn it over to us in such a status that it, for unexpected reasons, would not operate successfully for more than a few months and we not have the funds to correct conditions, both UMTA and the Board would be subject to merited public criticism.

We sense that you believe the system will work without any trouble other than some conventional operational problem if it meets to your satisfaction the specifications you have set up. We do not share that feeling, yet we would be taking the entire risk in case of failure. At least we believe that would be the situation if we should agree to your suggested modification of the agreement.

Sincerely,

Earle T. Andrews
Member, West Virginia
Board of Regents

DEPARTMENT OF TRANSPORTATION
URBAN MASS TRANSPORTATION ADMINISTRATION
WASHINGTON, D.C. 20590

APR 8 1974

Mr. Earle T. Andrews
Member, West Virginia Board
of Regents
Pennsylvania Glass Sand Corp.
Berkely Springs, West Virginia 25411

Dear Mr. Andrews:

I have received your letter of March 29, 1974 and appreciate your prompt response. I greatly regret that the University felt itself unable to accept my proposed modifications to the existing agreement No. WV-06-0006, dated September 9, 1971 between the Urban Mass Transportation Administration and the West Virginia University Board of Regents.

In view of the position you have taken, UMTA has determined to meet its obligations in a manner that optimizes the research objectives that are the purpose of our contract. We are therefore eliminating the automatic recording of passenger information and off-line schedule generation software and reducing those items or costs not necessary to the accomplishment of our research objectives. We will also take other appropriate measures to eliminate or reduce any items or costs not necessary to the accomplishment of the research objectives, including possible reduction in the total number of vehicles.

We look forward to a continuing relationship with the University, and hope that we will both benefit from the completion of the project. If at the conclusion of our acceptance testing you wish to reconsider your present position, you may then apply for a capital grant for additional vehicles and such other modifications which may be necessary to make the three-station system operational.

Sincerely,

Frank C. Herringer

cc: Dr. James G. Harlow

WEST VIRGINIA BOARD OF REGENTS

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MOUNT HOPE
DANIEL B. TAYLOR
STATE SUPERINTENDENT
OF SCHOOLS (EX OFFICIO)

May 3, 1974

Mr. Frank C. Herringer
Administrator
Urban Mass Transportation Administration
Department of Transportation
Washington, D. C. 20590

Dear Mr. Herringer:

We acknowledge your letter of April 8 advising of your purpose to complete phase "1-B" of the Morgantown PRT curtailed, however, to the bare essentials you deem necessary to fulfill UMTA's original research objectives.

The attention the project has been receiving recently from the news media and the character of the resulting articles and comments could well lead to the surmise that UMTA and the University were endeavoring to communicate through the press. This is not our intent and I assume it is not yours.

With further reference to your letter, although we recognize the right of UMTA to make constraining decisions regarding the project commitment without our concurrence, this most recent restriction suggests a review of some of the typical events which have contributed to our adverse reaction to your proposed contract revision.

Your files will show that the project design called for several sidings on the guideways, which would permit the storage of relief vehicles and the removal of inoperative vehicles. These sidings, with the exception of one, which we understand to be inoperative, were deleted by UMTA, regardless of our expressed concern, for reasons which were not communicated to us, but which we understand were based on time pressures, cost, and the presumption of a remarkably high vehicle reliability.

The originally specified vehicle capability for pushing an immediately-ahead vehicle was removed also over our stressed objection; again, we understand, for financial reasons and again upon the presumption of an exceedingly high vehicle reliability.

The obvious consequence of these two unrealistic engineering decisions is a requirement for a zero-failure vehicle. Otherwise a single vehicle failure will stop the entire system until the guideways can be cleared and the inoperative vehicle removed. Since a zero-failure vehicle is statistically impossible substantial down time for the system is easily predictable, regardless of theoretical vehicle reliability. So, also, are high inspection and maintenance costs, which such a zero-failure vehicle requirement would impose.

The cumulative effect of the decision to discard the sidings and the pushability of the vehicles, as well as other decisions of similar impact leave UMTA with the impossibility, in our view, of generation of a zero-failure vehicle in order to maintain a viable transportation system.

Your decision not to provide software for offline schedule generation and equipment for passenger information gathering is, in effect, a unilateral redefinition of the purposes of the project. The latter deletion makes it impossible for the system to describe its users and therefore reduces its research capability in studies of the usage aspects of the project. Assuming that it becomes feasible to accept the installation and subsequently, under the obvious demands of analysis we are asked why we do not know who uses the PRT and why, we can only reply that this capacity was removed from the system.

The agreement to restore the software and the passenger information capability is only a few weeks old, and already it has been abrogated. Obviously, under the agreement that UMTA can make technical modifications without the concurrence of the University, you are within your rights. This event however, in the light of our subscription, at your request, to the recent specification revision, adds to our growing feeling that UMTA has in fact abandoned its stated intention to fund the remaining three stations of the original system design.

The Morgantown PRT was undertaken in good faith as a joint effort between WVU (West Virginia Board of Regents and others) and UMTA to seek a better way to deal with National mass transit problems. It was an R/D project, and not a project designed to adjust to the winds of political expediency. We continue to adhere to the R/D view, and reiterate:

1) The project should and could provide a basis for continuing research into the technological problems associated with PRT systems;

2) the project should and could provide a basis for research into the effective use of PRT systems; and

3) finally, it should show promise of handling the transportation problem at Morgantown.

PRT's are going to become an essential segment of our National transportation scene before the close of this century. Stated simply, the Morgantown PRT can function viably in one of two ways, either as a 3 station research entity or as a 6 station research and transportation entity in the Morgantown area.

I am constrained to submit however that the seemingly excessive cost characteristic of this project does not have to be repeated. Detached, experienced engineering management of definitive planning, design and construction will effect obvious improvement and economies in the transformation of your concepts, plans, and objectives, necessarily made within the governmental structure, into accomplished realities.

We will continue to cooperate to the fullest extent consistent with our resources with the sincere hope that the project may be brought to successful fruition and thus justify the substantial investment of public funds thus far committed and the dedicated efforts of those who have been involved in its development.

Sincerely yours,

Earle T. Andrews
Member, West Virginia
Board of Regents

cc: Dr. James G. Harlow
Dr. Samy E. G. Elias

APPENDIX P

PRODUCT ASSURANCE CDR MINUTES

26 March 1974

Meeting convened at 9:00 a.m. by T. M. Davidson.

Mr. Davidson responded to a question asked the previous day regarding the comparability of calculated MTBF's with general field experience. He stated that there was generally good correlation. Previous Boeing studies indicate that calculated values may be slightly conservative.

J. H. Keeney then presented an overview of the M-PRT O&M cost requirements, a description of the proposed M-PRT support organization, followed by a summary of annual O&M costs, and a list of personnel requirements for the system.

Operator/work week factors were presented. These included manpower requirements, personnel skills, probability of union involvement, and work shift structures. Mr. Keeney commented that the manpower assignments were a continuing effort which would be refined by field experience. Mr. Barsony suggested Boeing visit BART to review the O&M activity. Dr. Money agreed to make arrangements for this visit (has been accomplished).

During presentation of vehicle unscheduled maintenance parts cost, J. Winn questioned the apparent difference in cost between the current analysis and the earlier (August 1972) analysis. Boeing was requested to provide substantiation of vehicle brake pad costs (Action Item PS-13).

Action Item PS-6 was assigned to Boeing to show sample calculations comparing the cost of VCCS of line item 19, page 48, Boeing Document D191-93000-1 (earlier analysis) with the parts cost of the VCCS, line item 19 of the Vehicle Unscheduled Maintenance Parts Costs chart presented in the O&M session of the Product Assurance CDR, 26 March 1974.

Action Item #7 assigned to Boeing to provide clarification of (2% x 3868.00 + labor) service charge for the public address system shown on the C&CS overhaul labor and parts maintenance material and services chart.

The following note is to be added to the Maintenance Material and Services — Control & Communications chart on the subject of computer maintenance contract.

*"Subject to renegotiation, based upon operational experience."

The subject of equipment damage by lightning was discussed with reference to maintenance costs. Action item (PS-8) was assigned to Boeing to reaffirm that adequate lightning protection has been provided for structures and appropriate equipment.

An associated action item (PS-9) was assigned to Boeing to determine the extent Boeing takes into account failures resulting from lightning strikes with regard to O&M costs.

Electrical Power Analysis

A presentation was made showing the anticipated electrical power cost. It was

recognized that the charts portraying these data needed further clarification and it was requested that the minutes include the rationale used in determining system electrical power usage as follows:

Vehicles: Expected peak demand constant throughout the year.

Facilities: Expected peak demand corresponds to:
Summer/Day for six months of the year,
Winter/Night for 1.2 months of the year, and
Winter/Night/Snow for 4.8 months of the year.
A mean monthly peak equal to one-twelfth of the annual total is obtained by adding 0.5 times the Summer/Day peak, 0.1 times the Winter/Night peak and 0.4 times the Winter/Night/Snow peak.

These assumptions will be included as an addendum in the data package.

Meeting was adjourned at 12:30 p.m. for lunch.

The CDR reconvened at 1:40 p.m.

J. H. Keeney reviewed the outstanding action items.

PS-1 and PS-2 were closed and will be included in an attachment to the CDR minutes.

Three additional action items were assigned to Boeing. PS-10 requests Boeing to identify O&M expenditures in the local community (within an 80-mile radius).

PS-11 requests Boeing to provide an estimate of the life expectancy of the paint on the power rail carrier.

PS-12 requests Boeing to further explain a portion of the guideway heating system O&M cost.

Safety

The fault tree concept was presented by Ron Craig. Mr. Craig introduced the subject by defining terminology and symbology used in the analysis. It was explained that fault tree analyses are conducted to determine the probability of occurrence of an unsafe event causing personal injury or death or equipment damage.

A detailed review of the M-PRT fault tree analysis was conducted during which the data base and method of use were explained. In conclusion, Mr. Craig presented comparative data showing that on the basis of the fault tree assessment, the M-PRT system will be as safe on a passenger mile basis as bus, auto, rail, or airplane, and that all M-PRT safety requirements are met or exceeded.

Hazard Report Status

Jack Keeney presented the status of M-PRT hazard investigations to date. Mr. Barsony stated that hazard reports should be closed by the contractor and forwarded to the government for concurrence.

T. M. Davidson will forward by letter the following hazard reports, which are outside of Boeing's domain to UMTA, for closure.

SR-1	Encroachment of Outside Vehicles on Right of Way
SR-2	Power Lines Cross Guideway
SR-3	Passenger Gates in the Stations

Open Issues From March 4-8 CDR

J. Keeney presented a chart showing station closures per year.

J. Keeney discussed safety/manuals interface indicating safety critical items will be under procedural control.

The following action items from the March 4-8 CDR's were closed: C2, C3 and C4 dealing with fault message displays. In addition to MTBF of the CAS resulting from Action Item 8 of the CAS PDR was closed as a result of the presentations on system MTBF.

Discussion Item No. 4 from the March 4-8 CDR's dealing with the situation where the vehicle is stopped on the guideway and the 'Exits Not Closed' message is not downlinked to central control was discussed and is still open. It will be further expanded to include similar situations for in-station stops.

Action Item PS14 (due 4/12/74) was assigned to Boeing to provide the safety rationale for the current door design and recycle force.

Outstanding action items from the 14 action items established by this CDR were reviewed and due dates were assigned.

In conclusion it was agreed, that, subject to closure of assigned action items, the Conveyance Dependability, Operations and Maintenance Cost, and System Safety analyses presented at this Product Assurance CDR demonstrate that the M-PRT system complies with requirements of the specification, 191-90000-3C. (Specifically paragraphs 3.2.2, 3.2.3.2, 3.2.4.4, 3.3.6.1, 3.3.6.2, 3.3.6.3, 3.3.7, 3.3.7.1, and 3.5.1.) The analyses presented was based on the West Virginia University passenger demand table for the three station system in conformance with contract requirements set forth in the system specification and contract statement of work. It is recognized that actual operation of the M-PRT three-station configuration may not be in accordance with the three station passenger demand table.

Open hazard reports identified in the attached data package will be closed on a continuing basis in accordance with Boeing Memo 2-1710-0000-080 and Operating procedure MPRT-2516.

The meeting was adjourned at 6:20 p.m.

S. A. Barsony

T. M. Davidson

LETTER FROM JOHN T. CARLTON

Reserve Officers Association of the United States

Colonel JOHN T. CARLTON, USAR (Ret.), *Executive Director*

Colonel FLOYD H. HAYWOOD, JR., USAF (Ret.), *Deputy Executive Director*
Colonel ARTHUR A. BRACKETT, USAF (Ret.), *Director, Air Force Affairs* • Captain EDWARD L. HUIE, USNR (Ret.), *Director, Naval Affairs*
Colonel ROBERT L. MOORE, USA (Ret.), *Director, Army Affairs*

National Headquarters • MINUTE MAN MEMORIAL BUILDING • 1 CONSTITUTION AVENUE, N.E.
WASHINGTON, D. C. 20002 • 202/547-4300

24 July 1974

The Honorable Robert C. Byrd
Chairman, Subcommittee on Transportation
Senate Committee on Appropriations
Room S-146, The Capitol
Washington, D. C.

Dear Mr. Chairman:

As you know, for the past few years, the Coast Guard Reserve has undergone trauma because of those who would seek to eliminate this Reserve Component altogether. The Commandant of the Coast Guard completed a Reserve training concept and force analysis in 1969. This was an indepth study which concluded that a Selected Reserve of 16,590 was required and that these manpower needs could not be met from non-reserve sources. This 16,590 has been whittled away year after year until we reached a low level of 11,300 in Fiscal Year 1974.

In the 92nd Congress legislation was enacted which provided for a peacetime mission for the Coast Guard Reserve. Parts of the Coast Guard Reserve, from time to time, because of this enabling legislation, have been recalled to active duty involuntarily, at the request of the Secretary of Transportation and approved by the President, to assist the victims and protect property in flooded and disaster areas of this country. We applaud these actions.

We also applaud the Coast Guard for reversing the downward trend in the personnel strength of the Selected Reserve by requesting a minimum average strength for Fiscal Year 1975 of 11,700. This represents an increase of 400 over 1974. We support this figure and hope that it is only the first step in rebuilding this important reserve component to the strength required.

We request that you provide the resources to support this important program.

Very sincerely,

John T. Carlton
Executive Director

LETTER FROM SENATOR JAVITS

July 8, 1974

Dear Bob:

It has come to my attention that the House Appropriations Committee has deleted from the fiscal year 1975 transportation appropriation any funding for research or demonstration concerning dial-a-ride mass transit and that this action has been approved by the full House.

I consider this a serious mistake and very much hope that the Senate will restore this Administration requested appropriation. Dial-a-ride research has been funded for the past four years and the results have been extremely encouraging. In fact, they have been so successful that the House deemed it unnecessary to continue any federal involvement.

However, a critical point has been overlooked. Up till now, dial-a-ride research has been funded exclusively at the small community level, such as Haddonfield, New Jersey, where the system would constitute the community's sole mass transit service. But no research has been done on integrating dial-a-ride with an existing fixed route mass transit system in larger cities. There are tremendous benefits to be gained from such integration and they could be lost if the program is ended at this stage.

In New York, the Rochester-Genessee Transit Authority has been actively involved in dial-a-ride for some time. A system has been implemented by them in Batavia, New York (a small town) and work is now being done on integrating dial-a-ride with the existing mass transit in Rochester, New York. The Authority believes, and I agree, that continued appropriations for fiscal year 1975 are necessary if this program, and others throughout the country in larger cities, are to succeed.

I would very much appreciate it if you could schedule the Chairman of the Authority, Mrs. H. Jean Crapsey, and the Director, Mr. Robert Aex, for testimony before your subcommittee on this important matter. I would like to introduce them to the subcommittee and I am sure you will find their testimony informative and convincing.

Thank you for your consideration.

With best wishes,

Sincerely,

Jacob K. Javits, U.S.S.

The Honorable Robert C. Byrd
The United States Senate
Washington, D.C.

LETTER AND STATEMENT FROM CONGRESSMAN SEIBERLING

Congress of the United States
House of Representatives
Washington, D.C. 20515

June 26, 1974

The Honorable Robert Byrd
CHAIRMAN
Subcommittee on Transportation
Senate Appropriations Committee
Washington, DC

Dear Mr. Chairman:

Enclosed is a statement on the Alcohol Safety Action Programs.

I hope that the subcommittee will give serious consideration to providing the full budget request for the ASAP programs when you mark-up the 1975 Transportation Department appropriation.

I would appreciate it if this statement could be included in the hearing record.

Thank you for your consideration.

Sincerely yours,

JOHN F. SEIBERLING, M.C.

34-206 O - 74 - pt. 2 - 36

Mr. Chairman:

I appreciate the opportunity to address this Subcommittee about the Alcohol Safety Action Programs.

Your Subcommittee will shortly be making a decision on the funding level for the Alcohol Safety Action Programs-- commonly called ASAPs. As you know, the Administration requested $9 million in the '75 budget to continue for two years as many of the 27 remaining ASAP programs as possible.

The Transportation Appropriation bill (HR 15405) reported by the House Appropriations Committee and passed by the full House on June 19th, contained only $5 million for the ASAP programs-- a $4 million cut.

I want to urge your Subcommittee to restore this $4 million and fund the ASAPs at the full-- but very modest-- level requested by the Department of Transportation.

ASAPs are perhaps one of the least known-- and most effective-- government programs around. I know of few programs from which the taxpayers get so much for so little.

Briefly, the ASAP program has two purposes:

-- to get the drinking driver off the road before he kills himself or someone else;

-- to help assure that those who are arrested, and other who have not yet been arrested, will not drink to excess and drive.

The programs were started in 1971 in response to the alarming fact that 28,000 traffic fatalities a year-- over one-half the total-- involve alcohol. They were designed as demonstration projects to test the effectiveness of various ways of attacking the problem of the drinking driver. A total of 35 programs have been funded in 35 states. Without additional funding this year, the programs will be phased out entirely unless picked by state and local jurisdictions.

Although a final decision has not yet been made on which programs will be continued, program officials plan to fund the most promising and successful programs. The number of programs funded will depend on the size of this appropriation and the availability of partial state and local funding. However, it is probably not realistic to expect that more than 16 programs could be funded if the full $9 million were available.

Officials from the National Highway Traffic Safety Administration estimate that the $4 million cut voted by the House will mean dropping at least 8 ASAP programs.

I fully agree with the House Appropriations Committee's thinking, as expressed in the House report, that the states should begin sharing the cost of the ASAP programs. That is, in fact, precisely what is happening. But the states cannot "share" in funding programs if no Federal funds are available.

In Virginia, for example, home of one of the best ASAPs in the country in Fairfax County, the state has established 9 satellite programs modeled after the successful experience in Fairfax.

By funding these new programs, the state and local governments have made very clear their willingness to commit their own resources to help fight the problem of the drinking driver.

But the success of these new programs is dependent in large part on their ability to continue to draw on the expertise and knowledge of the Fairfax operation. It is critical, therefore, that the Fairfax ASAP, and others like it, be continued so that they may assist the newer programs and hopefully continue to stimulate the establishment of others. This modest appropriation is seed money in its truest sense.

Although the statistical evidence on ASAPs is not all in, the programs seem to have made a significant impact:

-- In those areas that have had programs operational for 2 years, the number of alcohol-involved fatalities has been reduced somewhere between 10 and 19 per cent.

-- In those same programs, there has been an even greater reduction-- about 22%-- in the number of people driving with high concentrations of alcohol in their blood.

-- Thousands of problem drinkers and potential problem drinkers heading down the road toward alcoholism have been identified and received counseling and rehabilitation which they might otherwise never have been exposed to.

-- Thousands of social drinkers have been exposed to badly needed information about alcohol and its effects on the body which will make them more responsible citizens.

As I mentioned earlier, one of the most successful ASAP programs in the country is located in neighboring Fairfax County. I'd like to briefly describe this program as an example of what is going on around the country in ASAP programs.

With the assistance of two mobile vans equipped to administer blood and breath tests on the spot, and 11 new police cruisers, regular duty policemen assigned to the Fairfax ASAP detail are on duty from 8 p.m. to 3 a.m., on the lookout for persons driving under the influence of alcohol. In 1971, prior to the establishment of the Fairfax ASAP program, there were 171 driving while intoxicated (DWI) arrests in Fairfax County and only 68 convictions. In each year of the program's operation, there have been more than 3,000 DWI's. Today, 2-1/2 years into the program, 7,500 people have been arrested by ASAP patrolmen. The percentage of alcohol-related fatal highway crashes in the County has been cut by at least 30%. The number of drivers on the road with a blood alcohol level (BAC) over the legal limit has decreased by 35%.

Although these figures are not perfection, they are encouraging. But there are a great many benefits from the ASAP program which cannot be easily measured by statistics.

One of the most valuable elements of the ASAP program is its identification system of the drinking population. Of the 7,500 people arrested in Fairfax County during the program's operation, 80% have been identified as either self-admitted problem drinkers or so-called social drinkers who are heading toward a serious problem and who, if they continue in their drinking pattern without help will probably be alcoholics 5 or 10 years down the line. The ASAP program screens the social drinkers from the problem drinkers-- and refers those with a problem or a potential problem to a variety of community agencies equipped to counsel and rehabilitate them. Since the rehabilitation programs are fee-paid, they are self-supporting.

Although persons picked up on a DWI in Fairfax County are given a choice between going directly to court or participating in the ASAP program, it is interesting to note, I think, that between 95 and 98% choose to go through the program.

For those with a drinking problem or a potential drinking problem, ASAP can literally be a lifesaver. As we all know, the stigma attached to alcoholism in this country is very great. And perhaps the greatest single problem we face

in battling the disease is to convince the alcoholic to seek help. ASAP programs present a unique environment in which the alcoholic or the problem drinker, surrounded by peers with the same problem, can feel comfortable in discussing his problem and asking for help.

The Fairfax ASAP program-- through its public information program-- has also contributed enormously to raising the awareness of County residents about the problems of drinking and driving. Through alcohol information programs instituted in the schools, ASAP is getting badly needed information on alcohol to young people. The sophistication of the law enforcement officials, from the police officer to the judge, about the nature of alcoholism, has grown substantially as a result of the ASAP program.

The First Special Report to the U.S. Congress on Alcohol and Health from the Secretary of HEW issued in December, 1971, depicts in vivid detail the enormous impact which the disease of alcoholism has on this society:

-- alcoholism drains the economy of an estimated $15 billion every year

-- approximately 5% of the work force are alcoholics and another 5% are serious alcohol abusers. The Federal government-- the largest employer of them all-- has 240,000 alcoholics on its payroll

-- alcohol abusers caused 28,000 highway fatalities in one recent year. Among youth aged 16 to 24, the ratio of alcohol related traffic fatalities is a startling 6 out of 10 highway deaths

-- public intoxication accounts for one-third of all arrests reported annually

-- only 3-5% of all alcoholics fit the stereotype of "skid row" inhabitants. In truth, alcoholism is a disease which strikes all segments of our society-- without regard to age, race, sex, or economic status.

These awesome statistics will be updated later this month when the Secretary releases his Second Report on alcoholism. Secretary Weinberger has already warned that the new report will offer even more disturbing evidence which, in his words, "may focus the attention of the American people as never before to the true scope and national implications of the evils generated by alcoholism."

We can anticipate some of this new evidence.

-- For example, it is generally recognized that the estimate that there are 9 million alcoholics in America is very low. A recent Gallup poll showed that 18% of those 18 and older-- some 25 million Americans-- sometimes drink to excess and more than they think they should.

-- There is new evidence indicating a considerable increase in the use of alcohol by young people-- some of them in their early and mid-teens. And recent studies have shown that there has been a significant increase in involvement in fatal crashes of drivers under 21 in areas that have changed the legal drinking age from 21 to 18.

-- Finally, experts acknowledge that alcohol abuse by women is on the rise.

In summary, all the indicators point to an increasing problem with alcohol in our society.

It seems to me, then, that this is a time when the Federal government should be moving forward-- exerting new and strong leadership in the battle against alcoholism. We have not yet reached the comfortable position where we can step back and leave this fight entirely to the states.

The ASAP programs have made a modest-- but very important-- contribution to efforts to decrease the number of alcohol-involved traffic fatalities. They have helped thousands of people confront their alcoholism and seek help. They have run interference for thousands of others who were headed toward alcoholism, but who were exposed to information and assistance in time. And they have made a significant contribution to an enlightened public attitude toward alcoholism and its impact on our society. They deserve to be re-funded at the very modest level proposed by the Department of Transportation.

Thank you.

LETTER FROM SENATOR COTTON

United States Senate

COMMITTEE ON COMMERCE
WASHINGTON, D.C. 20510

July 15, 1974

Honorable Robert C. Byrd, Chairman
Subcommittee on Transportation
Committee on Appropriations
1322 Dirksen Senate Office Building
Washington, D. C. 20510

Dear Mr. Chairman:

I shall appreciate it if you will have the enclosed copies of letters from Thomas A. Power, Coordinator of the New Hampshire Highway Safety Agency, and Joseph Foster, Chairman of the New Hampshire Highway Users Conference, inserted in the record of hearings of the Subcommittee on Transportation Appropriations.

With every good wish,

Yours sincerely,

Norris Cotton
U. S. Senator

LETTER FROM THOMAS A. POWER

STATE OF NEW HAMPSHIRE
OFFICE OF THE GOVERNOR
HIGHWAY SAFETY AGENCY
STICKNEY AVENUE
CONCORD 03301

July 8, 1974

Senator Norris Cotton
Room 4121 New Senate Office Building
Washington, D. C.

Dear Senator Cotton:

On June 19 the House of Representatives passed HB 15405 - The Department of Transportation's appropriations act including funds for federal highway safety and mass transit programs.

The budget bill includes a $100 million limit on new funding for the National Highway Traffic Safety Administration -- Federal Highway Administration state and community safety grant program.

This sum is 48 million below the request of the DOT but 20 million above the fiscal 1974 figure.

As Highway Safety Coordinator of New Hampshire I respectfully request that you support a restoration of 16 million dollars of the 48 million dollars cut made by the House. Thirty two million of the cut in the House was a specific denial of a DOT request for incentive grants to encourage states to enact mandatory seat belt laws. While such legislation might help, and while I personally favor such laws, I am a realist and I would guess the Senate would probably have the same antipathy toward seat belt laws as exhibited in the House.

But I would sincerely urge that you support a restoration of the other 16 million dollars in the DOT budget because this will directly affect New Hampshire.

The 1973 Highway Act established "incentive grants for states which make significant progress in reducing fatality rates".

Under departmental guidelines New Hampshire, because of an outstanding highway safety record in 1973, would receive an additional $100,000 in this program.

The recent house approved budget does not deny this incentive program but the money to fund it would have to come out of the $100 million appropriation.

If the House version is sustained, New Hampshire will in effect lose about $100 thousand and that, to us, is indeed a substantial sum.

The federal funds provided by the Congress under the National Highway Safety Act of 1966 in the state and community safety grant have been carefully expended in New Hampshire and with good results. Our highway fatality death rates have gone down every year since passage of the act and in 1972 and 1973 we were regarded as one of the best states in the country in the highway safety field.

Any support you can give to the continuation of this effort will be deeply appreciated.

Sincerely,

Tom Power

Thomas A. Power
Coordinator

LETTER FROM JOSEPH FOSTER

NEW HAMPSHIRE HIGHWAY USERS CONFERENCE
23 School Street — Concord, New Hampshire 03301
Telephone 224-4097

RICHARD G. KELLEY
N. H. Farm Bureau Federation
Vice Chairman

July 2, 1974

Honorable Norris Cotton
4121 Senate Office Building
Washington, D. C. 20510

Dear Senator Cotton:

Very soon, your Senate Transportation Appropriations Subcommittee will be considering the proposed Department of Transportation budget for the fiscal year 1975.

We are particularly interested in several aspects of the budget proposal dealing with highway safety programs, and urge you to support our position during the Subcommittee's deliberations.

First, we feel that the appropriations bill should not set a ceiling for the "Section 402" state and community safety grant program that is below the Administration's proposed budget level.

The "402" program has produced many positive results nationwide and in our state since its creation in 1966. With 18 national standards as guidance in areas such as driver licensing, pedestrian safety and emergency medical services, state and local officials have shown that they can turn Federal safety dollars into life-saving, accident reducing programs. In New Hampshire, for example, we have been able, through strenuous efforts, to reduce our fatality rate per 100 million miles of travel from 4.2% in 1967 to 3.8% in 1973.

The House version of the DOT budget bill (HR 15405) includes a $100 million limit on the grant program, a bare-bones figure that does not reflect the national priority Congress assigned to safety in authorizing $203 million for fiscal 1975.

We hope that your Committee will not go below the DOT ceiling of $148 million -- including funds for mandatory seat belt use law incentive grants -- and will encourage the DOT in your report to budget future "402" grants at the level of authorization.

Secondly, we believe that the Senate version of the DOT budget should follow the House-passed measure in establishing a separate appropriation for the various roadway safety construction programs (railroad grade crossing protection, improvements at high hazard accident locations, removal of roadside obstacles, hazardous bridge replacement, the safer roads demonstration program and pavement marking programs) without a limit on new obligations. The authorized fiscal 1975 funding for these programs is $475 million.

The DOT budget had proposed that these important safety programs be included under the regular Federal-aid highway construction appropriation, with an estimated fiscal 1975 obligational level of $250 million.

Various Congressional studies have shown that these roadway safety programs have proven live-saving potential. They should be funded separately to eliminate the present competition between highway building and safety funds that reduces the effectiveness of both efforts -- to the detriment of the highway user.

Thank you very much for your consideration of these matters. If we can provide any material on these essential safety activities, please let me know.

Sincerely,

Joseph Foster

Joseph Foster
CHAIRMAN
New Hampshire Highway Users Conference

*BENEFIT-COST RATIO
CORRIDOR B

The alternates for resolving the West "O"-BN crossing are to construct a separation structure or to relocate the railroad.

A separation structure, without consideration to "P" Street or future east-west streets north of "P", has an estimated 1974 cost of $1,865,000 Assuming that construction could be programmed as early as 1980, a conservative adjusted cost is $2,487,000. In the interim there would be a continuing cost of vehicular delay which is conservatively estimated at $864,000 for the six year period. Further, to efficiently handle the projected train movements would require approximately 4 miles of additional track at a cost in excess of $1,500,000.

The railroad relocation will resolve both the "O" and "P" Street conflicts and will permit future east-west crossings north of "P" with minimal conflict. There will be accruing benefits to the BN in the movement of south bound trains over and above that which can be attained with a double track in the existing location.

ITEM	BENEFITS		COSTS	
	ONE TIME	ANNUAL	ONE TIME	ANNUAL
Construction costs, B_1			$900,000	
Construction and R.O.W. costs, B_2			2,150,000	
Vehicular Delay		$144,000		
Reduced accident cost		50,000		
Annual savings for BN southbound unit coal trains (10 x 1 x 365 x $200)		730,000		
TOTALS		$924,000	$3,050,000	
ANNUAL TOTALS		$924,000		$254,170

NET BENEFITS $669,830

BENEFIT-COST RATIO 3.63

*This is a tentative ratio with conservative value placed on benefits.

STATEMENT OF MARVIN L. NUERNBERGER, EXECUTIVE DIRECTOR, LINCOLN, NEBR., RAILROAD TRANSPORTATION SAFETY DISTRICT

Mr. Chairman and members of the subcommittee, we are appreciative of the opportunity to direct your attention to the need for appropriating certain funds that are authorized in section 163 of the Federal Aid Highway Act of 1973.

In particular the referenced act authorizes $25 million to be appropriated in fiscal 1975 for railroad-highway crossings demonstration project. Accordingly, in your consideration of 1975 appropriations for the Department of Transportation and Related Agencies we would stress the importance of meeting the financial needs of those demonstration projects that have developed orderly and timely implementation schedules. Lincoln, Nebr.. as a demonstration site, has an individual need of $7,550,000 to maintain planned program commitments.

As executive director of Lincoln's Railroad Transportation Safety District, I am increasingly cognizant of the national significance involved in our solution to railroad-community conflicts. We have many, many inquiries from communities throughout the United States seeking advice and expressing interest in our progress. In terms of economic, environmental, and social costs Lincoln is involvsd in solving a serious national problem.

Many communities. including Lincoln, are still served by transportation corridors which were responsible for their founding and which have been a dominant force in their past and present growth and prosperity. However, today the movement of people and goods within the urban areas is virtually all by motor vehicle on city streets with trains remaining as the dominant carrier in the intermediate and long distance movement of goods. This means that with street traffic increasing and trains getting longer and longer urban transportation corridors are becoming so entwined that they are drastically impeding the operational efficiencies of each other. Accordingly, orderly community growth and development is being struggled within areas of conflict which, when added to the wanton destruction of property, limb and life that is inherent in accident exposures results in annual astronomical community costs. There is a critical need for an early solution to the problem.

Of the $15,000,000 authorized for fiscal 1974 for demonstration projects by the 1973 Federal Aid Highway Act only $6 million was included in the Department of Transportation and Related Agencies Appropriations Act of 1974. Subsequently, consideration was given by both the House and Senate to supplemental appropriations to fund the needs of those particular projects that had developed orderly and timely implementation schedules. Currently the House bill provides for a transfer of $1,500,000 from sections 203 and 230 funds to section 163 and the senate bill provides for certain unappropriated authorized section 163 funds to provide supplemental 1974 appropriations for such purpose. Lincoln has a definite need for $718,000 of the total sum which when added to the $700,00 provided in the referenced 1974 Appropriations Act indicates the progress that we are making with our demonstration project.

In Lincoln a goody portion of the necessary preliminary engineering was accomplished through the joint efforts of the railroads and the District prior to the availability of Federal funding. Accordingly, we have elected to divide our project into independent portions for the purpose of expediting the work. By so doing we are able to advance those portions which do not require the acquisition of additional right-of-way to the contract stage at an early date, and this results in the need for the requested supplemental fiscal 1974 appropriation of $718,000.

Lincoln's need for a fiscal 1975 appropriation of $7,550,000 is based on the work that is currently programed in that period. In order to finalize agreements with the railroads it is essential to have obligation authority available to cover the estimated cost of the work.

We would generalize our request by stating that it is important to establish recognition of the value of demonstration projects pursuant to section 163 and to provide adequate fiscal 1975 appropriations to permit timely and orderly implementation schedules.

We are including copies of our April 1, 1974 quarterly rport which was submitted to the FHWA.

We are also including copies of two newspaper editorials pertinent to Lincoln's demonstration project.

[From the Lincoln Journal, Dec. 7, 1973]

UNBLOCKING WEST O

The obvious solution to the problem of trains tying up traffic on West O Street is to build an overpass. But obvious solutions are not always the best, and often take a lot of time and money.

Thus it's encouraging to find Lancaster County's Railroad Transportation Safety District (RTSD) actively pursuing alternatives.

RTSD is working with the Burlington Northern on the possibility of rerouting trains so they don't have to cross O Street. If it can be done, this would be a preferable solution.

Some tracks apparently would need to be constructed south of O Street, and possibly a new crossing over Salt Creek. Whether the railroad should be expected to assume this financial burden is debatable, but perhaps the issue need not arise. As an innovative approach to ending a street-rail conflict, the rerouting might qualify as an RTSD demonstration project and thus be eligible for up to 95 percent federal financing.

The West O Street situation is still far from resolved. But by bringing expertise and imagination to bear on the problem, RTSD is functioning as it was intended—and improving odds that it can be resolved.

[From the Cedar Rapids Gazette, Dec. 17, 1973]

HOW TO UNTIE CROSSINGS

For all its good intentions, the plan that called for railroads to cut out evening rush-hour freight movements through downtown Cedar Rapids has not delivered the goods so far. If voluntary limitations fail, then the mandatory ban that had been contemplated in ordinance form may earn renewed consideration.

Even at its best, however, this approach to easing monitor-traffic-rail-traffic conflicts in the busy central core is superficial, mild and inadequate. Nothing fully satisfactory to all concerned can overcome the chronic tie-up trouble until it gets down to basics: grade separation, track relocation, or both.

In that light, last week's get-together for a look at Lincoln, Nebr.'s, new, solid attack on a similar problem represents a much more promising effort. Downtown interests, city officials, state legislators, industrial spokesmen and railroad men all joined in the hearing. And if any better answers come to Cedar Rapids' Fourth Street problem, they can be effectuated only through cooperation on the part of all these groups.

From Executive Director Marvin Nuerenberger of Lincoln's railroad transportation safety district came advice on several prime essentials for a crossing-untying of the scope both cities contemplate.

One of these is large-scale funding. There is no cheap way to do these things and do them right. Lincoln has developed prospects for up to $15 million from the federal department of transportation, 95 percent of the expense coming from Washington, 5 percent raised locally.

Another essential is also a prerequisite for obtaining the funds: There has to be a solid plan for what is going to be done—where, how and by whom. This, too, requires teamwork by the many sources vitally affected, plus an input of funds for the planning itself.

A third key element is the legal mechanism for developing the plan that qualifies for the federal funding, and then for executing it step by step through the period this takes. In Lincoln's case, an enabling act by the legislature laid foundations for a railroad transportation safety district on a countywide basis. The city council appoints three supplies directors for this board and the county commissioners three more. The district board has power to sell bonds and levy taxes up to three-fourths of a mill per year.

In Cedar Rapids now, the needed nucleus has jelled for a truly productive rail crossing program that can do what it finally must with real benefits to all concerned. The time will soon be here when necessary groundwork legislation can begin to move—adaptable to local needs and Iowa realities. The push now getting underway should target this as goal No. 1 in a great undertaking.

STATEMENT OF ROBERT E. MONROE, VICE PRESIDENT - POLICY AND TECHNICAL PLANNING, AIRCRAFT OWNERS AND PILOTS ASSOCIATION

Summary of Recommendations

1. Sustain and enlarge the reductions made by the House in all FAA budget requests.

2. Retain the prohibition against new or increased user charges.

3. Retain the prohibition against remoting or decommissioning flight service stations.

Introduction

AOPA is a national association of over 181,000 people who operate private aircraft for a variety of business and personal purposes. We appreciate this opportunity to present our views respecting the FAA budget application for FY 1975.

Inflation is ruining the nation's economy. One of the major factors has been the growth in federal spending. The enormous growth in the FAA budget in recent years is a classic example of federal spending out of control. As a consequence, the costs of aircraft operation have soared, programs inimical to the private use of aircraft have increased, taxes on selected people involved in aviation have been imposed, and more taxes are threatened. The FAA budget and its justifications are past due for critical reappraisal and major reduction. If it is not, aviation seems likely to be priced out of existence as the cost spiral increases.

Appropriations

While the House cut $22,500,000 from the FAA request for Operations, we think the reduction could be increased to as much as $95,800,000 without any real adverse effect upon safety or efficiency. Certainly, no additional personnel should be

allowed. The FAA is already over-employed. All but a dozen towers should be reduced to 16-hour days. Towers at low activity locations should be closed. Examination of airmen should be delegated to industry. The fleet of training aircraft should be eliminated. The unnecessary designation and training of Class III medical examiners should cease. Repetitive airport planning, ceaseless upward revision of airport standards, and the extension of certification to airports not originally intended should be stopped. Research and development management should be reduced and reoriented to respond to the economic realities faced by the aviation industry.

The request for Facilities, Engineering and Development should be reduced by eliminating the medical programs and the aircraft training equipment. Analysis of accident statistics is the proper task of the NTSB rather than the FAA.

It seems to us that recent experience with very large aircraft indicates the wisdom of the House reduction in National Capital Airports - Construction. A few paint stripes will provide the needed guidance for big aircraft and avoid the need for jet ramp enlargement.

Grants-in-Aid for Airports should be funded at the lowest possible level. This program has turned into a recurring dole for a few large airports. The original goals and purposes of the program have been set aside and never met. As a consequence thousands of communities and recreational resources still have no public use airport despite the expenditure of billions. Planning funds should be sustained.

Likewise the Facilities and Equipment appropriation should be as small as possible. We have more towers, more radars and more positive control airspace than the nation needs or we want. Airports already equipped with an instrument approach get addi-

tional ones while other airports, lacking one and needing it, do without. Often, instrument approach aids are changed or added to gain improvements of no real significance. Again, the House action should be sustained and enlarged if possible.

Research, Engineering and Development should be reduced even more than the House has reduced it. The aviation weather and medicine programs should be eliminated entirely. Weather research is the proper function of the National Weather Service and the medical research could be more economically performed by NIH if it is even necessary. We think it is not. NAFEC should be closed. The remainder of FAA's effort in this program should be redirected towards simplification and cost reduction rather than to enhancement of ever more sophisticated equipment for air traffic control and navigation.

General Provisions - Section 313 - Administrative Fees

The DOT and FAA have requested that Section 313 be deleted from Title III - General Provisions. This section prohibits, in the form of a limitation, the Department of Transportation from raising existing or imposing new fees administratively which were not in effect on January 1, 1973.

AOPA urges retention of this limitation. The reasons for its initial adoption still prevail. The Secretary of Transportation has again deferred, probably until late in the year, submission of Part 2 of the Cost Allocation Study report. Administrative fees and legislative user taxes should be considered en bloc - not separately. Nor should the general public escape financial responsibility for the burdensome paperwork imposed upon the aviation community in the name of public safety -- and that is very likely what will happen if the limitation is removed.

Flight Service Stations

The DOT and FAA have requested deletion of the final proviso in the Facilities and Equipment appropriation language that prohibits remoting or decommissioning any existing flight service station. We urge retention.

Before any change is made in the structure of the flight service station system, the Government (OMB, DOT and FAA) and the aviation community must come to a mutual agreement on the ultimate form of the system, the services it provides, and the steps by which the transition is to be made.

We are not insensitive to the cost of this system even though it amounts to only about 15% of the cost of the air traffic control system as a whole. We do think there is a better program than that proposed by the FAA and one which will be much less costly in the long run.

Cost Allocation

Secretary Brinegar, in the course of his appearance before your subcommittee, made remarks about the cost allocation study that deserve response. Since I participated in this project as much as any nongovernment person could, I have some firsthand knowledge of the subject.

The nature and structure of that study was tightly controlled by OMB and DOT to assure that the results would come out as they did. Virtually all but one of the various cost allocation methods employed was based ultimately on some application of use data. Given that fact, it is not remarkable that they all came out with similar results.

Repeated requests were made to actually inventory facilities, services, costs, uses and requirements. These were denied. We urged a study of the origin of requirements for facilities and services to determine who was the cause of the resulting costs. This was denied. We urged a study of benefits flowing from general aviation. This was denied. We urged an incremental cost study of a different nature. It was denied.

The Secretary's remark that "we (DOT) invited someone to prove us wrong and no one has" is a red herring. With the Government withholding access to the required data and refusing to make the studies indicated above, no such proof was physically possible to anyone outside government.

The Cost Allocation Study deserves to die an unlamented death.

Conclusion

We appreciate your consideration of these views and hope you respond favorably to our recommendations.

CONCLUSION OF HEARINGS

Senator BYRD. The subcommittee hearings are recessed.

[Whereupon, at 6 p.m., Wednesday, July 24, the hearings were concluded and the subcommittee was recessed to reconvene at the call of the Chair.]

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