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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR 1975

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HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

NINETY-THIRD CONGRESS

SECOND SESSION

SUBCOMMITTEE ON DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS

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THOMAS J. KINGFIELD and CHARLES G. HARDIN, *Staff Assistants*

PART 1

DEPARTMENT OF TRANSPORTATION

National Transportation Policy

Printed for the use of the Committee on Appropriations

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Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE
31-433 O WASHINGTON : 1974

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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1975

TUESDAY, MARCH 5, 1974.

NATIONAL TRANSPORTATION POLICY

WITNESSES

HON. CLAUDE S. BRINEGAR, SECRETARY OF TRANSPORTATION
JOHN W. BARNUM, UNDER SECRETARY OF TRANSPORTATION
ROBERT H. BINDER, ASSISTANT SECRETARY FOR POLICY, PLANS, AND INTERNATIONAL AFFAIRS (DESIGNATE)
THEODORE C. LUTZ, DEPUTY UNDER SECRETARY FOR BUDGET AND PROGRAM REVIEW
ASAPH H. HALL, SPECIAL ASSISTANT TO THE SECRETARY

Mr. MCFALL. We welcome you, Mr. Secretary, as the first witness to come before us this year.

WITNESSES

This afternoon and tomorrow we have a number of witnesses. We will put their names in the record at this point.

[The list of witnesses follows:]

Secretary Brinegar, Secretary of Transportation.
Secor Browne, formerly Assistant Secretary of Transportation and Chairman of the Civil Aeronautics Board.
Dr. William J. Ronan, president, Institute for Rapid Transit.
Ray W. Burgess, president of the American Road Builders Association—accompanied by Mr. Daniel J. Hansen, executive vice president of the American Road Builders Associaation.
Nello L. Teer, Jr., president, Associated General Contractors of America.
John Beck, vice president, Rohr Corp.
Harry Parrish, chief, Division of Mass Transportation, California Department of Transportation.
Dr. Lawrence Goldmuntz, chairman, Economics and Science Planning, Inc., formerly Assistant Director, Office of Science and Technology.
William Hamilton, technical staff, General Research Corp.
Congressman Bill Frenzel, Minnesota.
Congressman Frank E. Evans, Colorado.
Congressman Brock Adams, Washington.
Congressman Pete Stark, California.
Stuart Tipton, chairman, Air Transport Association.
Ed Stimpson, president, General Aviation Manufacturers Association.
J. Donald Reilly, executive vice president, Airport Operators Council International.
Jack R. Gilstrap, vice president, American Transit Association.
Dr. Vukan R. Vuchic, associate professor of Civil and Urban Engineering—Transportation, University of Pennsylvania.
Harry N. Cook, executive vice president, National Waterways Conference, Inc.

J. Edward Anderson, professor of Mechanical Engineering, University of Minnesota.

Mathew Triggs, assistant director, American Farm Bureau Federation.

Dr. Hayden Boyd, economist and coauthor of Evaluation of Rail Rapid Transit and Express Bus Service in the Urban Commuter Market.

Robert Monroe, vice president for Policy and Technical Planning, Aircraft Owners & Pilots Association.

Crocker Snow, director of the Massachusetts Aeronautics Commission and former Chairman, Aviation Advisory Commission.

Stephen Ailes, president, Association of American Railroads.

Introductory Remarks

Mr. McFall. Mr. Secretary, we are pleased to have you with us today to discuss national transportation policy.

When you appeared before us last year, and when you had just began as the Secretary of Transportation, we stated that:

> The field of transportation policy is one which I believe the Department has neglected to some extent. We can no longer afford to concentrate our efforts solely on transportation programs at the expense of transportation policy.

Our purpose here today is to offer some suggestions on the formulation of a policy, to see what progress DOT has made in developing a policy in the last year since you have been Secretary, and to provide a forum for an exchange of ideas on transportation policy between Government and industry. If a viable national transportation policy is to be developed, I feel it is obvious that it must evolve from a cooperative effort between the administration, the Congress, and industry.

As you know, Mr. Secretary, we are faced with an ever-worsening transportation quandary: How are we going to get there from here?

Studies indicate that by 1990, we will have to double the transportation capacity of this Nation; we will need twice the transportation facilities which we have developed and installed in this Nation since its founding in 1776. Not only that, we will have to accomplish all this without ruining our environment and without wasting our energy resources as we have done in the past. We believe a logical way to attempt this task is to begin with an articulation of goals and methods—a policy.

THE NEED FOR A TRANSPORTATION POLICY

We are all familiar with the Interstate Highway program and have our own opinions about its impacts, negative and positive, on America's cities and its transportation resources. Clearly, one major reason for this program's dramatic momentum and achievement has been its focus on reaching a simply described and easily understood, agreed upon goal. It is this sort of direction and commitment which is lacking with regard to the concept of all-mode transportation.

It is up to the Federal Government first to provide the substance of a national transportation policy and then to commit itself to put that policy into operation. The Federal role in this area is well established, and seems to consist of two elements. First, our transportation system is, by its very nature, a national one. Every major transportation mode not only crosses city and State boundaries, but often does so in a fashion designed to traverse distances as rapidly as possible. In this aspect, transportation serves as a skein of unifying threads tying the country together. Thus, to leave transportation policymaking to the

cities and States is to invite a plethora of separate and inconsistent approaches. The eventual result would be intolerable, affecting our resources, economy, and society in general. The second element of the Federal role in this area is the financial one. It seems obvious that, since the Federal Government provides billions of dollars annually in support of transportation facilities, it should devise some comprehensive mechanism for guiding these expenditures.

In essence, Mr. Secretary, the Department of Transportation has been asking the wrong questions. Currently, as in the past, the questions have been "How many highways, of what size, should we build, and where?" And then, separately, "How many airports, of what size, should we build, and where?" And so forth. To be sure, these are essential questions which demand answers. But first we must answer the question, "How are we going to move people from one place to another, and at what level of service?" Only then, with that end result fixed in our mind, should we become concerned with the modes which provide the means to that goal. A transportation policy would show us, or force us to decide, where we are going with our national transportation system; then we can "mix and match" the various modes into an integrated, efficient transportation network. Without such a policy, our transportation "system" will forever remain fragmented, duplicative, inefficient, and wasteful of our time, energy, and financial resources.

Clearly, what we have seen from the Department of Transportation so far cannot be considered a national transportation policy.

This year's budget includes some of the same three objectives which the Department has fallen back upon in previous years: Reorganization, revenue sharing, and deregulation.

The concept of a Department of Transportation was to pull together the fragmented transportation modes in order that they might function in a coordinated fashion. But instead of harmony among the modes, all we get is just a lot of noise. It seems obvious that a piecemeal approach won't work anymore.

FRAMEWORK FOR A NATIONAL TRANSPORTATION POLICY

I would like to outline some of the characteristics of the sort of national transportation policy which I think we need. While neither complete nor definitive, it is hoped that these thoughts can be a cooperative step toward the formulation of a policy.

First of all, there should be some minimal common denominator or standard of the Federal Government which outlines desirable levels of service, comfort, safety, amenities, and so forth. These standards could then be balanced against the ever-increasing aspiration for improved transportation. Thus, the basic framework of a transportation policy would consist of service criteria.

To be practical, these service standards, or criteria, need not be very elaborate or detailed in the beginning. A fictitious example of a service criteria would be: In any metropolitan area of population between 500,000 and 1 million; 65 percent of the people should be able to reach an airport with scheduled service within 1 hour by some mode of transportation, 82 percent of the people should be able to commute to 90 percent of the places of employment (based on employee density) by some mode of transportation within 45 minutes, and 75 percent of the

people should be able to get to 70 percent of the cultural and recreational activity locations within 1½ hours by some mode of transportation. In this example, the figures used are arbitrary and unimportant. What is important is the all-mode, or any-mode, orientation of the service standards.

Obviously, there are dangers involved in such an effort. We cannot allow the process to be dominated by the fertile imagination of planners restrained only by their ability to mark off pet projects on a regional map. If the output of a national planning effort is to have the validity needed to make it a compelling demand in the legislative process, it must be based on sound criteria for service and careful analysis of the optimum means to provide this service. But ultimately, some form of national program based on reasonable criteria as to whom we hope to serve, the general level of service and safety we will offer and the range of financing options must be produced.

The effect of a national transportation policy on federal financing would be a significant one. The policy should eventually incorporate a philosophy, sufficiently well-defined to be implemented, on the proper balance between public and private development and operation, as well as between federal and local participation. But even with rudimentary service criteria, the policy should immediately affect Federal funding. If a given geographical area already meets the policy criteria, then rational funding allocation would indicate that perhaps the Federal money would be better spent in some other area. If a local area wants a level of service above the national standard, it would probably have to pay for that additional service. The policy would also identify the sorts of problems which may exist within an area and highlight them as funding priorities. In a broader sense, the policy would reveal what general categories of transportation, such as, perhaps, high-speed inter-city ground transportation, could benefit from more Federal funding for research or application on a national basis. Good policy comes before good financing: we must have a firm understanding of the job that needs to be done before we go off to make up our minds about financing. With a transportation policy a logical foundation would be provided for the inevitable tradeoffs which occur in the competition for scarce dollars; without such a policy we could double our national transportation expenditures with little or no improvement in our transportation system.

Transportation is a means of moving people, things, and ideas from place to place. It is not an end in itself; modes should complement one another rather than conflict. If we are to avoid overduplication and waste, we must orient ourselves away from modalism toward a more functional perspective. We must formulate an understanding of what a transportation system is supposed to accomplish.

The essence of balanced transportation is the development of a "scale"—a tool for balancing the various transportation modes. The sort of policy we are looking for is one which will enable us to equate each of the modes to one another.

The kind of national transportation policy I am talking about would eventually lay out for us a system of arterials and ancillary routes—something like we already have for our Interstate Highways. But this would be a composite system showing our major and subordinate routes for all forms of transportation.

If we had such an integrated policy, obviously we would know where to locate our transportation facilities. We would be able to project the use of airports, for example, and perhaps to deal with the problems of loading capacity and ground passenger service. We would be able to spread the passenger load more evenly—not only among airports, but among the alternate modes of transportation. We would have an important leg up on the problems of noise and congestion if we knew well in advance where we are going to put our new transportation facilities. A national transportation policy would enable us to use each mode of transportation to its best advantage—and to make the best use of the scarce resources of our lands, waters, skyways, energy and dollars.

It is important to realize that this sort of policy will neither be "carved in stone" nor achieved overnight. The plan would be a foundation to build upon, but it must be flexible and dynamic; it must respond to changes in both society and technology.

Energy scarcity is imposing new requirements on the planning and implementation of transportation facilities. Transportation is by far the Nation's most wasteful user of energy. Our ships, planes, and cars burn up 8 million barrels of oil a day—22 percent of all the energy we use. Yet because of the nature of these vehicles, they convert only one-fourth of their fuel into propulsion; fully three-fourths of the energy input is wasted. Thus the policy must not only relate each transportation facility to the rest of the transportation system, but also consider the impact of future needs and future technology on the various transportation modes.

In addition to the factors mentioned above, the policy must also take into consideration the interrelation between transportation and society. In a recent address, Congressman Brock Adams of Washington said: "The failure of the Federal Government to adopt a national transportation plan is the primary cause of the massive urbanization of the last 30 years; we have allowed our communities to wither away, and we have caused a concentration of people in megalopolis-type centers." Transportation is at once both determinative and resultive of many aspects of contemporary life: commerce, ecology, housing, economics, defense, and social welfare, to name only a few. For example, the exodus from intercity work to suburban sleep and recreation is experienced by millions of people daily. While this exodus is made possible by existing transportation facilities, it also exerts demands for more such facilities. With the lack of a comprehensive policy, we have already seen how this "vicious cycle" functions to bog down the daily movement of people to the detriment of all. An integrated, rational network of transportation choices would allow the components of our system to complement one another rather than conflict. Thus, transportation policy must be designed so as to provide, through a rational mix of transportation facilities, opportunity for choice of life styles and environments.

IMMEDIATE ACTION NEEDED

We cannot allow the status quo—the lack of any conscious or express comprehensive policy—to become "policy" through neglect, abdication or happenstance.

Secor Browne, former Chairman of the Civil Aeronautics Board, has observed that Congress is tired of "tiptoeing from crisis to crisis" in the absence of a national policy. I think his observation is correct. Our transportation situation would be less of a crisis if we had a policy to form the foundation for effective action.

I stated earlier that our transportation quandry is the problem of how we are going to get there from here. Mr. Secretary, a national transportation policy is the vehicle we must use to arrive at the sort of integrated transportation system we need.

We cannot delay any longer. Together, we must push on with this task. I think the best interests of the Nation—its economy, its national security, and its future—demand such action.

Secretary's Opening Remarks

Secretary Brinegar. Mr. Chairman, members of the committee: We are pleased to be here today and perhaps christen this fine new room with some thoughts of large issues. We would like to take some time to review these issues in some perspective.

I have a fairly long statement that I would like to go through essentially in its entirety because I believe this to be a very important matter and I would like my views clearly stated in the record. At the end of that time, my associates and I would be most pleased to try to answer your questions or discuss some of the issues we raise in more detail.

I'm certain that we have no disagreement when I say that the subject for discussion—national transportation policy—is a most difficult one. Please recognize that today's comments on this subject are in the nature of a progress report on the Department of Transportation's continuing efforts to develop a useful statement on transportation policy. Your reaction to these comments, as well as the reaction of others, will be most welcome. We readily admit that our work on this subject is incomplete.

CONCEPT OF TRANSPORTATION POLICY

Let's start by shifting our thoughts away from today's transportation problems—and we have our share—to a broader perspective. I'd like to start by focusing on the role of transportation and on the concept of policy.

I have some slides that sort of touch on the highlights of some of the points that I will discuss. Transportation, it is important to recognize, is not an end in itself. It is a means to contribute to the economic well-being and quality of life in our Nation. Thus, transportation policy is developed to serve national goals.

The desirability of developing a statement of "national transportation policy"—one that would guide us to the solution of today's problems and to the avoidance of tomorrow's—is widely accepted. Agreeing on what that policy should be, however, is a far different matter. Almost any meaningful statement of policy will be seen as a threat by some interests. Moreover, the very concept of a "national transportation policy" is inherently vague and elusive. But progress toward a useful policy statement is possible—provided we recognize its limitations and stay away from indefinable platitudes.

First, the concept: "Policy," in our view, guides the way government at all levels moves from the establishment of attainable goals to specific action programs. Policy development is thus seen as the decisionmaking process by which we select from available courses those actions which are consistent with the goals and are best suited to the problems at hand. In this perspective, policy is the necessary link in the never-ending process of translating the many and often conflicting national goals into specific action programs. Policy should address large issues that affect all or major parts of the system rather than small pieces of the system.

An oversimplified, and somewhat idealized, view of this process is as follows: [1]

STEP I

Establish national goals of primary importance. Agree on priorities and levels of effort for—

National defense.
Relative roles of public and private sectors.
Regional growth and employment.
Energy conservation; safety; environmental protection.
Urban development.
Rural development.
Human development (aged; handicapped; and so forth.)
Civil rights.
And so forth, and so forth.

STEP II

Agree on policies to advance these goals—the mix of policies will vary as national priorities among the goals vary.

STEP III

Develop and implement programs to carry out the policies—Specific actions emerge at this step.

From the first step of establishing goals and assigning priorities to them, we move to the next step, which is to agree on the policies to advance these goals. I would note that the mix of policies will vary as national priorities among the goals vary. As we shift, for example, from more or less attention on national defense or more or less attention on urban development or on environmental matters, the policies must shift.

The third step is to develop and implement the programs to carry out these policies, and I would note it is here that the specific actions emerge—the programs, the legislation that actually causes things to happen.

"National transportation policy," in this perspective, can be seen as the collection of transportation-related policies that flows from the policy development process. But because a great many existing policies have been developed at different times in response to different problems and varying priorities of goals, the total of these policies does not necessarily constitute an integrated national transportation policy. Thus, while it is possible to organize the main elements of these policies into a formal statement, we must stress that such a statement will always be somewhat unsatisfying:

1. Because we have—and, by their very nature, will always have—many vague national goals, the transportation policies needed to sup-

[1] In actual practice, of course, the interactions which occur as part of the policy development process are complex and subtle. This simplified description, however, does help to conceptualize the place of "policy" in the business of Government.

port them will often be vague, and, in some cases, may even be contradictory.

2. Transportation is typically an intermediate, or linking, function between other economic or social activities. For this reason a single, absolute goal of, say, "efficient transportation" cannot be the sole objective. Since these other activities are continuously being affected by shifting social, economic, and political forces—that is, changing environmental objectives—transportation policy must also shift to accommodate these changes.

3. The mixed public-private nature of our economy and the division of governmental responsibilities at Federal, State and local levels make it impossible to identify any one group as being totally or even mainly responsible for transportation decisions. The independent actions of these multiple decisionmakers are incapable of being completely brought under the umbrella of a single "grand design."

4. Policy tends to be confused with programs. Thus, many expect policy statements to deal with specific programs, rather than principles of policy.

5. Significant advances in Federal policy require agreement between the legislative and executive branches.

HISTORICAL PERSPECTIVE ON TRANSPORTATION POLICY

Let me now shift to some historical perspective because there has been a great deal of effort in this country to establish what we might call national transportation policy.

First, in 1940, Congress enacted an amendment to the Interstate Commerce Act that in fact was called a national transportation policy. I think it is important to look at the words because in many ways this now constitutes our national transportation policy. This preamble says:

> It is hereby declared to be the national transportation policy of the Congress to provide for fair and impartial regulation of all modes of transportation subject to the provisions of the this act, so administered as to recognize and preserve the inherent advantages of each—

Let me pause at that point and note that that clause called the inherent advantage clause has, through the actions of the courts, been largely interpreted as meaning that the Congress intended that the various regulated carriers be protected from each other. [Preamble continuing.]

> . . . to promote safe, adequate, economical, and efficient service and foster sound economic conditions in transportation and among the several carrriers; to encourage the establishment and maintenance of reasonable charges for transportation services, without unjust discriminations, undue preferences or advantages, or unfair or destructive competitive practices; to cooperate with the several States and the duly authorized officials thereof; and to encourage fair wages and equitable working conditions; all to the end of developing, coordinating, and preserving a national transportation system by water, highway, and rail, as well as other means, adequate to meet the needs of the commerce of the United States, of the Postal Service, and the national defense. All of the provisions of this act shall be administered and enforced with a view to carrying out the above declaration of policy.

Appendix A provides brief summaries of three of the more notable post-1940 efforts at statements of national transportation policy. These

are the 1955 report of the group that was headed by Secretary of Commerce Weeks; the 1961 report of a special study group commissioned by the Senate Commerce Committee, usually called the Doyle Report; and, because of the similarity of our systems, the policy statement that was actually adopted in Canada in 1967. These statements show a generally consistent thread: a reliance on free market competition to allocate resources efficiently, with regulation limited to the minimum needed to protect the public interest. Thus, all advance a broader and more competition-oriented view of policy than the 1940 Interstate Commerce Act preamble.

Appendix A

A recommended declaration of national transportation policy from a report to the president by the presidential advisory committee on transport policy and organization (weeks report), (1955)

It is hereby declared to be the national transportation policy of the Congress—

First. To provide for and develop under the free enterprise system of dynamic competition, a strong, efficient and financially sound national transportation industry by water, highway, and rail, as well as other means, which is and will at all times remain fully adequate for national defense, the Postal Service and commerce.

Second. To encourage and promote full competition between modes of transportation at charges not less than reasonable minimum charges, or more than reasonable maximum charges, so as to encourage technical innovations, the development of new rate and service techniques, and the increase of operating and managerial efficiency, full use of facilities and equipment, and the highest standards of service, economy, efficiency and benefit to the transportation user and the ultimate consumer, but without unjust discrimination, undue preference or advantage, or undue prejudice, and without excessive or unreasonable charges on noncompetitive traffic.

Third. To cooperate with the several States and the duly authorized officials thereof, and to encourage fair wages and equitable working conditions.

Fourth. To reduce economic regulation of the transportation industry to the minimum consistent with the public interest to the end that the inherent economic advantages, including cost and service advantages, of each mode of transportation, may be realized in such a manner so as to reflect its full competitive capabilities.

Fifth. To require that such minimum economic regulation be fair and impartial, without special restrictions, conditions, or limitations on individual modes of transport.

All of the provisions of this act shall be construed, administered, and enforced with a view of carrying out the above declaration of policy.

National transportation policy from commerce committee report by the special study group on transportation policies in the united states (doyle report) (1961)

It is hereby declared to be the national transportation policy to provide for flexible, coordinated, and impartial promotion and regulation of transportation in interstate commerce to the end that the needs of the commerce of the United States, of the Postal Service, and of national defense be met.

To attain this objective, promotional and regulatory programs in transportation shall:

First. Foster a safe, adequate, and coordinated national transportation system composed of all economically suitable modes operating singly and in combination and having as its nucleus privately owned and operated common carriers.

Second. Recognize and fully develop the relative service and cost characteristics of each mode as a component part of a coordinated system.

Third. Recognize the public interest in safe and economical transportation at just and reasonable charges therefor.

Fourth. Be so administered in promotional programs as to identify national, regional, and local needs for transportation development and to satisfy these

needs in the most economical manner through expenditures which consider the relative economic fitness and the characteristics of the several modes, to the end that the transportation resources of the Nation are efficiently allocated.

Fifth. Be so administered in regulatory actions as to recognize cost relationship in the adjustment of rates and charges, without undue discrimination, preference, or advantages as between users of transportation or unfair competitive practices as between carriers.

Sixth. Foster adjustments in the organization and structure of the transportation system and the component modes thereof, through consolidation and otherwise toward maximizing the efficiency of each.

Seventh. Further coordination and cooperation with the several States and the authorized officials thereof toward the development of simplified and effective economic and safety regulation of transportation.

Eighth. Give primary consideration to the national public interest in all cases of conflict with other more limited interests of persons or localities.

All actions of Federal agencies in matters affecting transportation shall be carried out in accordance with the above declaration of policy.

CANADIAN NATIONAL TRANSPORTATION POLICY FROM THE NATIONAL TRANSPORTATION ACT OF 1967

It is hereby declared that an economic, efficient, and adequate transportation system making the best use of all available modes of transportation at the lowest total cost is essential to protect the interests of the users of transportation and to maintain the economic well-being and growth of Canada, and that these objectives are most likely to be achieved when all modes of transport are able to compete under conditions insuring that having due regard to national policy and to legal and constitutional requirements—

(*a*) Regulation of all modes of transport will not be of such a nature as to restrict the ability of any mode of transport to compete freely with any other modes of transport;

(*b*) Each mode of transport, so far as practicable, bears a fair proportion of real costs of the resources, facilities, and services provided that mode of transport at public expense;

(*c*) Each mode of transport, so far as practicable, receives compensation for the resources, facilities, and services that it is required to provide as an imposed public duty; and

(*d*) Each mode of transport, so far as practicable, carries traffic to or from any point in Canada under tolls and conditions that do constitute—

i. An unfair disadvantage in respect of any such traffic beyond that disadvantage inherent in the location or volume of the traffic, the scale of operation connected therewith or the type of traffic or service involved; or

ii. An undue obstacle to the interchange of commodities between points in Canada or unreasonable discouragement to the development of primary or secondary industries or to export trade in or from any region of Canada or to the movement of commodities through Canadian ports;

and this act is enacted in accordance with and for the attainment of so much of these objectives as fall within the purview of subject matters under the jurisdiction of parliament relating to transportation.

Secretary BRINEGAR. The next advance forward in our view was in the 1962 message to Congress by President Kennedy. This message spelled out suggested transportation policy objectives—which also represented a significant step forward from the Interstate Commerce Act preamble—in the following words:

A BASIC NATIONAL TRANSPORTATION POLICY

The basic objective of our Nation's transportation system must be to assure the availability of the fast, safe, and economical transportation services needed in a growing and changing economy to move people and goods, without waste or discrimination in response to private and public demands at the lowest cost consistent with health, convenience, national security, and other broad public objectives. In-

vestment or capacity should be neither substantially above nor substantially below these requirements—for chronic excess capacity involves misuse of resources, and lack of adequate capacity jeopardizes progress. The resources devoted to provision of transportation service should be used in the most effective and efficient manner possible; and this, in turn, means that users of transport facilities should be provided with incentives to use whatever form of transportation which provides them with the service they desire at the lowest total cost, both public and private.

The basic objective can and must be achieved primarily by continued reliance on unsubsidized privately owned facilities, operating under the incentives of private profit and the checks of competition to the maximum extent practicable. The role of public policy should be to provide a consistent and comprehensive framework of equal competitive opportunity that will achieve this objective at the lowest economic and social cost to the Nation.

This means a more coordinated Federal policy and a less segmented approach. It means equality of opportunity for all forms of transportation and their users and undue preference to none. It means greater reliance on the forces of competition and less reliance on the restraints of regulation. And it means that, to the extent possible, the users of transportation services should bear the full cost of the services they use, whether those services are provided privately or publicly.

DECLARATION OF PURPOSE IN THE DOT ACT

All in all, in our opinion, this was a good statement.

Although it was not acted upon by the Congress, this statement is a major improvement over the Interstate Commerce Act preamble. The need for such a broadened view of the Federal role was clearly evident in the 1966 declaration of purpose in the act that established the Department of Transportation. This declaration of purpose is not quite a national transportation policy, but it clearly has elements of policy in it.

DECLARATION OF PURPOSE

Sec. 2(a). The Congress hereby declares that the general welfare, the economic growth and stability of the Nation and its security require the development of national transportation policies and programs conducive to the provision of fast, safe, efficient, and convenient transportation at the lowest cost consistent therewith and with other national objectives, including the efficient utilization and conservation of the Nation's resources.

(b)(1) 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 government, 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.

Now, the last paragraph I think is most interesting:

"(2) It is hereby declared to be the national policy that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

This evolution of national transportation policy clearly shows the changing nature of the concept. In 1940, it was exclusively directed at the economic regulation of transportation. Later attempts to change the policy advanced the notion that greater competition among transportation firms would better serve the public interest, and that governmental activities, such as the financing of transportation investments, also constituted transportation policy. More recently it has become evident that the side effects of transportation—effects upon the usage of energy, the environment, and personal safety, for example—are properly concerns of national transportation policy as well.

President Nixon's message on the national transportation system reflected this more complete concept of national transportation policy. The President called for a policy which seeks to improve the economic regulation of transportation, the public promotion of transportation, and the protection of society from the adverse side effects of our transportation system.

LEGISLATIVE NATIONAL TRANSPORTATION POLICY

Let me now very briefly review some of what I might call legislative national transportation policy, because obviously by its long series of acts and appropriations affecting transportation, the Congress has made a great deal of policy. Some of it is implicit, some of it is explicit. I very briefly summarized these acts under the three categories of economic regulation, promotion, and protection.

ECONOMIC REGULATION OF TRANSPORTATION

Acts establishing these regulatory agencies:

Interstate Commerce Commission, which regulates common carrier operations of rail, truck, barge, freight forwarding, and pipelines.

Federal Maritime Commission, which regulates common carrier operations in the waterborne foreign and domestic offshore commerce.

Civil Aeronautics Board, which regulates common carrier operations by air.

Also:

Steamship Conference—Dual Rate Act (1961), which authorized use of dual rate contracts with shippers and consignees; authorized regulation of international ocean rates by Federal Maritime Commission.

Barge Mixing Rule Act (1973), which prevented the imposition of certain regulatory constraints on the inland barge industry.

Federal-Aid Highway Act and amendments (1956–73), which provided funds for Interstate Highway System, urban and rural highways; flexible funds for mass transit. (1973 act.)

Airport and Airway Development Act (1970; 1973), which provided financial assistance to improve and modernize airports and air navigation and traffic control systems, extended concept of user charges for financing Federal aviation expenditures.

Urban Mass Transportation Act (1964; 1970; 1973), which provided financing of improved mass transportation facilities, equipment, techniques, and methods.

High Speed Ground Transportation Act (1965; 1972), which authorized research, development, and demonstrations of high speed ground transportation and door-to-door ground transportation.

Rail Passenger Service Act (1970; 1973), which created a national railroad passenger system (Amtrak); provided funds for modernization and operation of rail passenger service.

Emergency Rail Services Act (1970), which authorized financial assistance to railroads undergoing reorganization under section 77 of the Bankruptcy Act.

Emergency Rail Facilities Restoration Act (1972), which authorized financial assistance to railroads to restore or replace essential facilities and equipment damaged or destroyed by Hurricane Agnes floods.

Regional Rail Reorganization Act (1973), which created a process by which the railroad network in the midwest and northeast region may be restructured into a viable and competitive network of rail carriers; authorized financial assistance for modernizing rail facilities in the region.

Merchant Marine Act (1970), which provided funding for construction of highly productive merchant ships; relieved St. Lawrence Seaway Development Corporation of the requirement to pay interest to the U.S. Treasury on its debt.

St. Lawrence Seaway Development Corporation Act (1954), which created Government-owned corporation to construct part of the St. Lawrence Seaway by the issuance of revenue bonds; provided for the cost of operations and the repayment of principal to be financed from tolls charged to users.

Rivers and Harbors Act (1970), which established and funded a multiagency program to determine the feasibility of lengthening the navigation season on the Great Lakes-St. Lawrence Seaway system.

Various annual appropriations to—

Corps of Engineers for waterway projects.

FAA to operate air traffic control systems.

Coast Guard for maritime traffic control systems.

CAB for feeder airline subsidies.

DOT for research and development projects.

PROTECTION AGAINST UNWANTED "SIDE-EFFECTS"

Section 4(f) of Department of Transportation Act (1966), which prohibited approval of any program or project which requires the use of any land from a public park, recreation area, wildlife and waterfowl refuge, or historic site unless: (1) there is no feasible and prudent alternative to the use of such land, and (2) all possible planning is included to minimize harm to these areas.

National Environmental Policy Act (1970), which created the Council on Environmental Quality; required environmental impact statements on proposals for legislation and other major Federal actions having a significant effect on the environment.

Clean Air Act (1970), which initiated a national research and development program to achieve the prevention and control of air pollution, including the establishment of clean air plans for certain areas; provided technical and financial assistance to State and local governments in connection with the development and execution of air pollution and control programs.

Noise Control Act (1972), which authorized establishment of Federal noise emission standards, provided for Federal regulation of railroad and motor carrier noise, as well as sonic booms and other aircraft noise.

Establishment of National Transportation Safety Board (NTSB) (1966), created NTSB to investigate and determine the cause of transportation accidents and review on appeal the suspension, amendment, or denial of any certificate or license issued by the Department of Transportation.

National Traffic and Motor Vehicle Safety Act (1966), which authorized motor vehicle and tire safety standards and research and development to reduce highway traffic injuries and fatalities.

Highway Safety Act (1966), which provided for a coordinated national highway safety program through financial assistance to the States to accelerate highway traffic safety programs.

Motor Vehicle Information and Cost Savings Act (1972), which required issuance of bumper standards for new passenger motor vehicles, new methods for determining damage susceptibility and crashworthiness of passenger cars, the development of improved means of diagnosis and repair of damaged vehicles and a study to develop automobile consumer information.

Federal Railroad Safety Act (1970), which promoted safety in railroad operations and related activities.

Federal Boat Safety Act (1971), which authorized Coast Guard to set small boat safety regulations; provided financial assistance to States for boating safety programs.

Ports and Waterways Safety Act (1972), which authorized protection against oil spills by: (1) controlling vessel traffic in our inland waters and territorial seas; (2) regulating the handling and storage of dangerous cargoes on the waterfront; (3) establishing safety requirements for waterfront equipment and facilities; and (4) setting standards for design, construction, maintenance, and operation of tank vessels.

Vessel Bridge-to-Bridge Radiotelephone Act (1971), which requires that a radiotelephone be available at the main control station of certain types of vessels operating on U.S. navigable waters.

All of the acts in this last category addressed the question of protection against environmental damage, against safety from various side effects, noise, what have you, an effort to redress some of the problems that came about in the earlier decades when we simply built a lot of things without consideration and operated a lot of things without consideration to their adverse impact.

STATE OF PRESENT TRANSPORTATION SYSTEM

As we more toward thinking about what elements of national transportation policy are most important today, I think we should pause first for a review of how we stand today. Let's take our modes one at a time and make somewhat of a cursory overview of how they are doing. I will readily admit that any of them could be discussed at greater length and there will obviously be disagreements on some of our appraisals of how we stand. We appreciate your comments at any time.

First, let's talk about highways.

HIGHWAYS

Since the end of World War II the Nation's highway system has been increased by 12 percent to a total of 3.7 million miles (split between 3.1 million rural and 0.6 million urban). About 25 percent of this total is now covered, in varying degrees, by the Federal-aid highway program. The heart of the system is the 42,500-mile Interstate and Defense highway system, which is now nearing effective completion (35,000 miles open). Its national coverage can be seen on the map in Figure 1. This system will, when fully complete, carry over 20 percent of all vehicle traffic. On the highway there are over 100 million automobiles, 23 million trucks, and 4 million motorcycles. In addition to about 315,000 school buses and 50,000 city buses, there are 25,000 intercity buses which carry about 400 million passengers annually.

I would like to stress that those relatively few buses, the 25,000 in the intercity bus fleet, do a fine job in moving 400 million people between our cities. The Nation's highway system carries 87 percent of the intercity passenger traffic and 23 percent of the total ton miles of freight.

31-433 (Pt. 1) O - 74 - 2

THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS

STATUS OF IMPROVEMENT AS OF DECEMBER 31, 1973

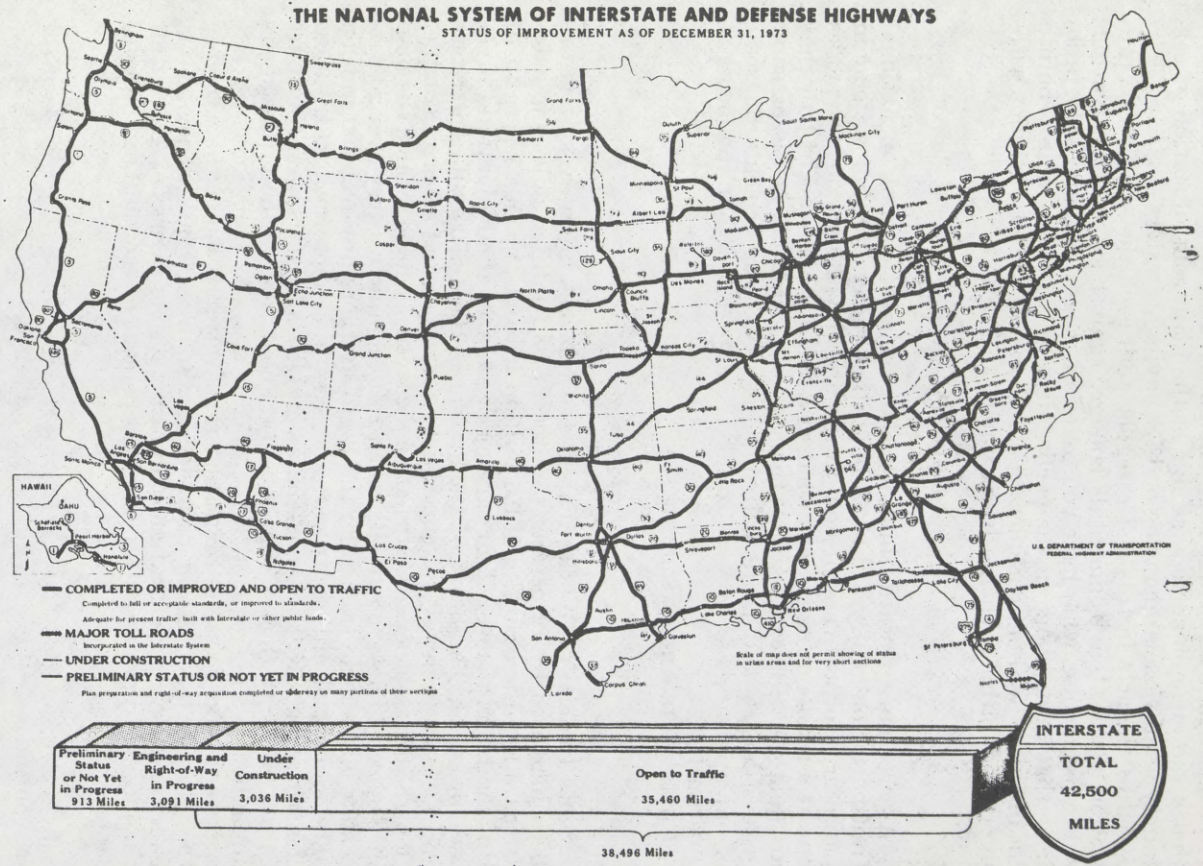

FIGURE 1

CAPACITY OF HIGHWAY SYSTEM

Secretary BRINEGAR. Physical capacity of the total highway system is, with very few exceptions, far beyond its actual usage. Traffic studies by the Federal Highway Administration indicate that approximately 25,000 miles of urban highways and 45,000 miles of rural highways—about 2 percent of the total system—are experiencing some peak-hour congestion during certain periods of the year, with the bulk of the economic losses due to congestion occurring in the urban areas. In our judgment future solutions to the urban congestion problem now lie more in the direction of traffic management and improvements to public transportation—through such actions as peak-hour stretchouts, incentives to car pooling, exclusive bus lanes, and so forth—than is simply adding more highways. There is, however, an ongoing need for continued Federal assistance to upgrade the quality of the heavily traveled highways, including bridges, and to eliminate various road hazards. We believe these future investments involve decisions that can best be made at the State level.

THE USERS OF THE HIGHWAY SYSTEM

The motor vehicle—ranging from the family car or recreational vehicle, to the intercity truck or trailer, the local delivery truck, the intercity, intracity and school buses, as well as the myriad of special purpose vehicles—has been for several decades the dominant element not only in the National Transportation System, but in the entire national economy and national lifestyle. It, coupled with our vast highway and street network, has given us a freedom of personal movement and our commerce a flexibility unmatched in the world. It has also given us a great many problems.

With respect to the personal auto, the competing demands of safety, energy, environment, and economy will continue to require of government, especially at the Federal level, wisdom and skill in balancing the constraints it places on users and manufacturers in pursuit of public goals. Because the automobile consumes some 30 percent of all liquid petroleum used in this country, it is essential that there be a high-priority effort—both by manufacturers and Government regulators—to improve vehicle fuel efficiency.

Further, although various public programs and heightened public concern have, in recent years, combined to help provide a safer driving and passenger environment, deaths, injuries and economic losses from motor vehicle crashes remain at unacceptable levels. Since 1968, the highway fatality rate has decreased from 5.4 deaths per 100 million vehicle miles to 4.3 in 1973. The absolute number of deaths, however, has continued to stay close to 55,000 annually, a figure that we want to see reduced in the years ahead. As a matter of current interest the lowered speed limits and reduced levels of driving have produced a very sharp drop—nearly 25 percent in traffic deaths—in the early weeks of 1974.

It seems clear that society is now changing its point of view with respect to the automobile and its uses on our highway system. Some

of the needed changes will continue to occur naturally as a response to forces such as higher energy prices and supply shortages, but other needed changes will require both political leadership and public consensus. High on the list of changes must be: (1) the acceptance by more people of high-quality public transportation as an alternative to private transportation; (2) the rationalization of sometimes conflicting energy, environmental, and safety goals; and (3) better planning and management in the public portions of the system.

The Federal Government's relationship to the commercial vehicle system, apart from its responsibilities in the safety field, lies principally in the economic regulation of common carriage trucking. Existing policy here is clearly in need of review and revision. The energy crisis has heightened our awareness of the inefficiencies introduced into the system by such matters as enforced excessive route circuitry, "gateway" restrictions, commodity and backhaul restrictions, and the lack of close coordination with energy-efficient rail freight service. In addition, regulatory changes are needed to encourage competitive pricing which more accurately reflects the real costs of providing the transport service involved.

In recent years, there has been a rising level of interest in the provision of public transportation in rural areas, particularly, though not solely, for those who are unable, either physically or financially, to use an automobile. The Federal-Aid Highway Act of 1973 provided that highway program funds could be used for purchase of transit equipment for rural service. Our recently proposed unified transportation assistance program legislation provides additional funds for demonstration programs in rural areas, including use for operating costs. High operating cost is the greatest difficulty in providing transit service in areas of low population density.

Let me now shift and talk about urban transportation.

URBAN TRANSPORTATION

The efficient transportation of people and freight within our major urban areas poses most difficult problems. Our cities have grown haphazardly, with little thought to future overall size, shape, or needs for transportation. Widespread automobile ownership has encouraged a "sprawl" that is now efficiently served only by the automobile. Various Federal programs (for example, housing, highways, welfare) have encouraged urban growth, but overall urban planning is not yet sufficiently effective. Recently, the requirements of the Clean Air Act, the pressures of the energy shortage, and the problems of peak-hour traffic congestion have combined into a demand for action.

But what kind of action?

Our analyses, as well as our experience in administering the urban mass transportation grant program (from which $3 billion has been given since 1970 to over 150 cities to buy buses and help build or improve rail systems), offer these guidelines:

1. It is extremely important to recognize that each urban area is different. No standardized solution is possible. An approach tailored to each individual case is called for.

2. The major obstacles to improving urban transportation are: (a) the lack of comprehensive local planning broad enough to embrace the entire spectrum of urban issues; (b) the lack of a public decision-making mechanism to resolve them; and (c) the lack of comprehensive management of the public transportation system of each urban area.

3. Except for our largest cities, the urban transportation problem is principally one of peak-hour capacity. During most of the day, the streets and particularly the transit systems are significantly under-utilized. Less than 25 percent of the available transit seat miles are actually in use.

4. Large cities with high-density cores face the most serious transportation problems. As a result of this high density and its accompanying congestion, the cost of constructing and operating transportation facilities in these city cores is significantly higher than in other areas.

5. Cities that do not now have rail transit systems should carefully consider all alternatives prior to starting new systems. The solution for most cities is more in the direction of traffic management, special bus systems, incentives for car pools, and peak-hour stretchouts.

6. Improved public transit can attract a great many new riders, yet the automobile will likely remain the dominant form of transportation for all but the largest cities for a long time. We should recognize this and move to do all we can to make sure that the automobile is energy-efficient and nonpolluting and that its role in the city is effectively managed.

By and large, the most serious urban transportation problems are concentrated in major areas with populations in excess of 1 million. These urban areas are shown on the map in figure 2, including the nine cities that now have fixed rail systems in operation or under construction.

FIXED RAIL TRANSIT SYSTEMS IN MAJOR URBAN POPULATION CENTERS



FIGURE 2

Secretary BRINEGAR. You see the concentrations obviously east of the Rockies.

Let me shift now and talk about railroads.

The size of the Nation's railroad system peaked in 1916, when it had a total of 255,000 route miles in service. Very little track has been laid since then, with the total shrinking slowly as the economy has changed, to its present level of 204,000 route miles. This system is mainly served by 73 class I railroad companies—that is, annual revenues over $5 million—which carry 95 percent of all rail freight tonnage. Altogether there are 1.7 million freight cars and 27,000 locomotives. The overall system contains considerable trackage that is used so seldom that it is not economically self-sustaining. We estimate the excess at between 10 percent and 20 percent. While there are some bottlenecks (especially in tunnels, bridges, and yards) the capacity of the mainline track system is several times the present level of usage. The mainline routes between principal freight traffic generating centers (which can be compared to the Interstate Highway System) can be seen on the map in figure 3.

The many problems—structural, regulatory, managerial, labor—affecting the railroad industry are most vividly evident in its poor financial health. The railroads in total earn only 3 percent on invested capital and, as a consequence, lack the financial resources to make needed roadbed improvements and freight-yard consolidations and modernizations, and to acquire adequate amounts of rolling stock. We believe that the needed long-term improvements in rail service will come as a result of reduced regulatory restrictions, interim Federal financial assistance, and, in time, through rail mergers or operating agreements in order to rationalize the interstate rail networks. Through institutional changes and the development of new rail car technology, we would like to see trains become more efficient freight "wholesalers," with close coupling to truck lines which would serve, at least in part, as "retailers." We also favor the development of a coordinated nationwide freight car management and control system. For most long-haul service, rail freight is an extremely efficient user of energy—surpassed only by pipelines and water-borne freight. It is vital that the various advantages that rail freight offers be permitted to be realized by the Nation as a whole.

Intercity rail passenger service is now largely handled by Amtrak; its routes are shown on the map in figure 4. Service in 1974 is expected to total about 19 million passengers, up nearly 25 percent from 1973.

U.S. RAILROAD MAINLINES

(ROUTES BETWEEN PRINCIPAL CITIES)

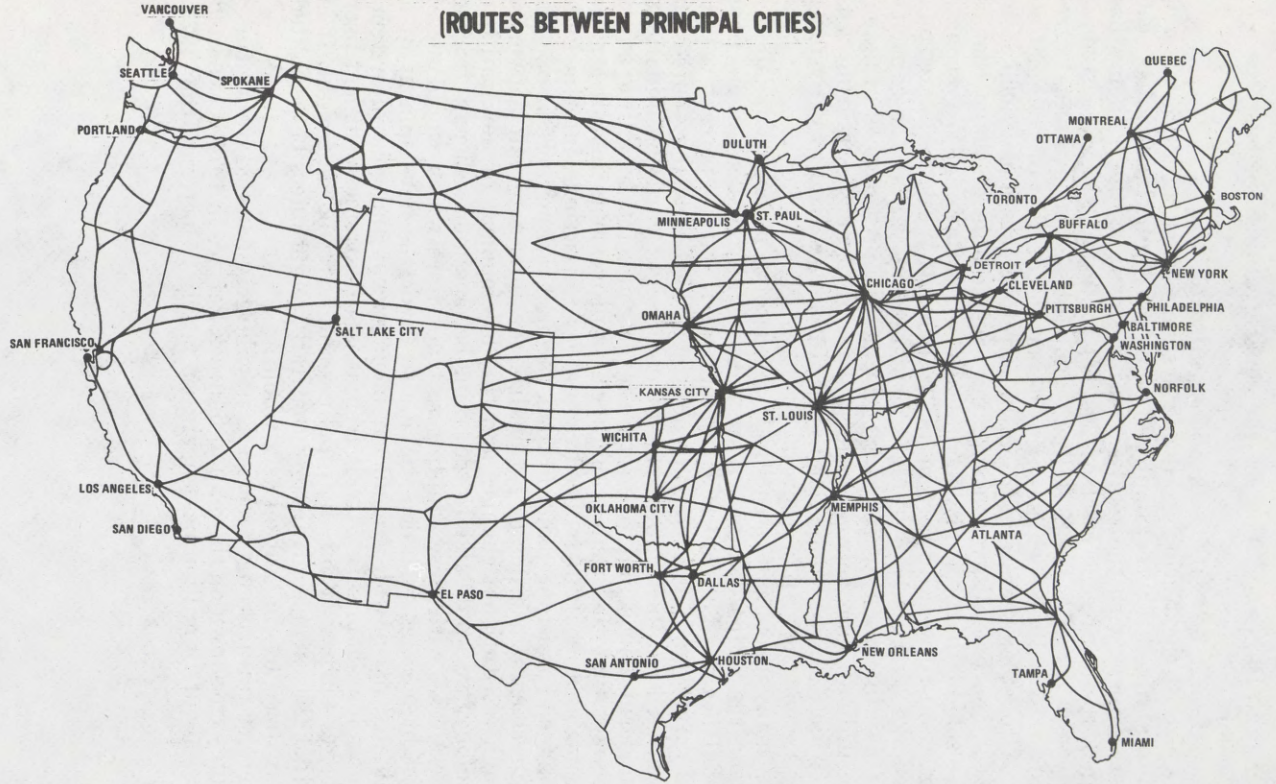

FIGURE 3

INTERCITY RAIL PASSENGER ROUTES
(Amtrak and Others)

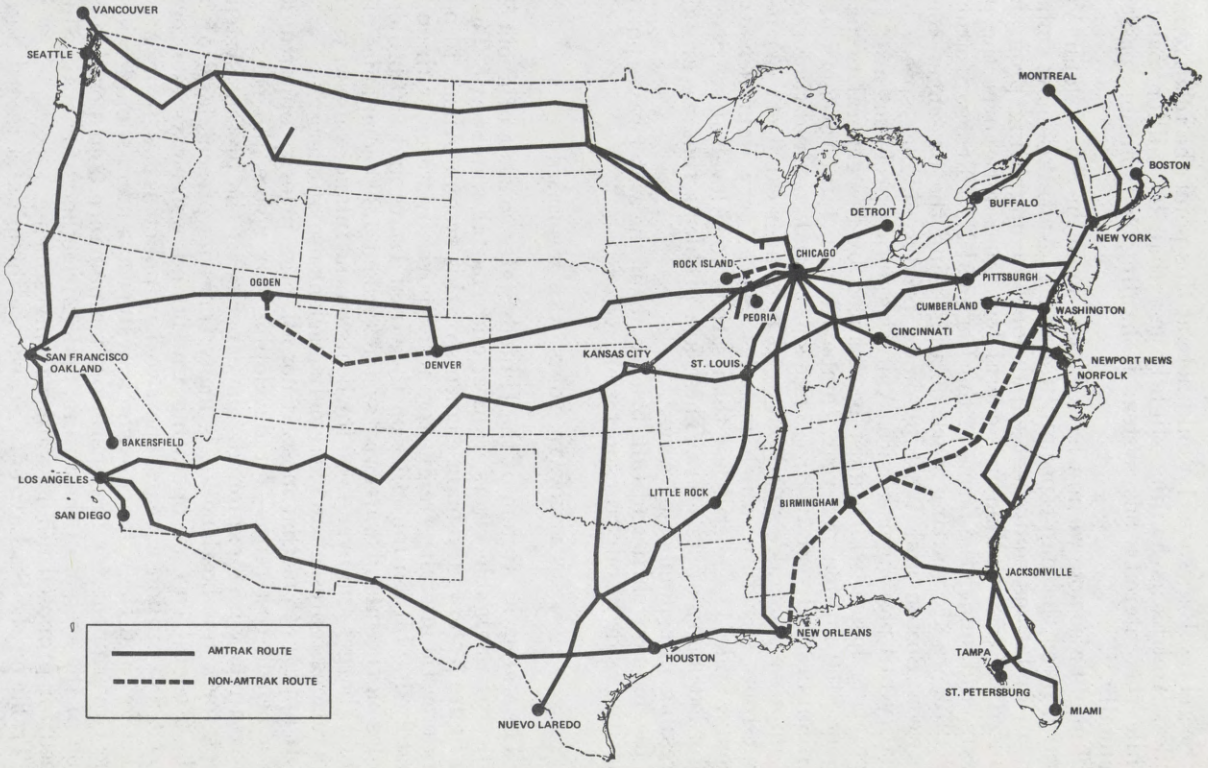

FIGURE 4

AMTRAK EXPANSION PROGRAM

Secretary BRINEGAR. I would note at this point the relative magnitudes. Amtrak is hauling slightly less than 20 million passengers while the intercity bus system is hauling 400 million passengers annually.

I might also note we now have a train down the San Joaquin Valley, drawn in on the map especially for today. Amtrak is now embarked on an ambitious equipment expansion and upgrading program—financed by $500 million in Federal loan guarantees over the past 3 years, and, under the terms of the Regional Rail Reorganization Act of 1973, we are starting work on upgrading the passenger corridor between Boston and Washington to produce higher speed, higher quality rail passenger service. Amtrak's major problems are: (1) its operating losses, which must be financed by the general taxpayer—about $150 million per year, compared with total revenues of $177 million in fiscal year 1973; (2) the substantial cost and time required to improve Amtrak's small but aged passenger car fleet; (3) its current route structure, which includes several very light density segments; and (4) the still less than satisfactory level of service being afforded many of its users. These are problems that we are all addressing in a number of ways.

Let me now shift and talk briefly about the waterways, ports and maritime side of our transportation system.

WATERWAYS, PORTS, AND MARITIME

The waterway system of the United States consists of about 25,000 miles of navigable rivers, canals, and coastal waterways, The map in figure 5 shows the main elements of this system. About 16 percent of domestic intercity freight ton-miles moves by water, with approximately 100 billion ton-miles on the Great Lakes and 200 billion ton-miles on the inland waterway system. About 1,800 companies operate 21,000 barges and over 4,000 towboats on the inland waterways. These operations represent an extremely efficient use of energy.

It appears to us that most, if not all, high priority opportunities—in a benefit-cost sense—for developing our rivers and coastal areas have already been exploited. The capacity of the present system. except for a few bottlenecks, is many times its present level of usage. The Federal cost of operating the inland waterways is averaging about $80 million a year. The two key policy issues to us are: (1) whether, and the extent to which, waterways users should reimburse the Government for the operation, maintenance, and possible extension of the system in the future, and (2) methods for evaluating the need for proposed inland waterway investments.

Traffic on the St. Lawrence Seaway, although at a record high, has been leveling off in recent years. Future traffic trends are unclear as trade patterns and cargo-carrying technologies continue to change, although some growth in overall volumes seems most likely. In the long run, however, successful efforts to increase the seaway system season, increase the use of containers, and provide uninterrupted shipper/receiver service, combined with a more stable world charter

market, should provide for increasing traffic through the St. Lawrence Seaway. Its capacity can easily be raised manifold.

WATERWAYS OF THE UNITED STATES

America's 130 deepwater (25 feet or more) ports (including the Great Lakes) are a vital link between land and sea transportation. Responsibility for transportation to, from and through these ports is divided at the Federal level among: the Corps of Engineers—responsible for channel and harbor projects; the Maritime Administration—responsible for promotion of maritime commerce; and the Department of Transportation—responsible (through the Coast Guard) for safety, navigation, and security in ports plus a general role in the coordination of the transportation system.

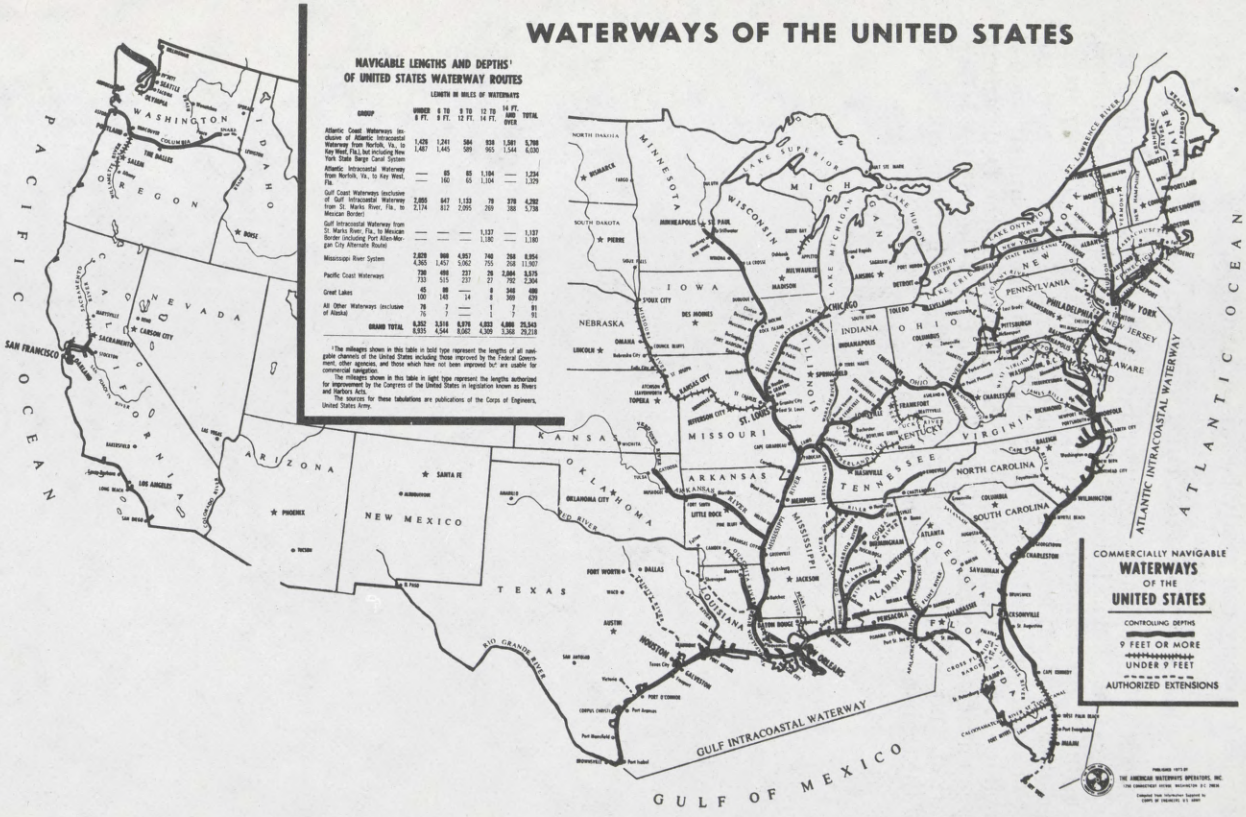
WATERWAYS OF THE UNITED STATES
NAVIGABLE LENGTHS AND DEPTHS[1] OF UNITED STATES WATERWAY ROUTES
LENGTH IN MILES OF WATERWAYS
GROUP | UNDER 6 FT. | 6 TO 9 FT. | 9 TO 12 FT. | 12 TO 14 FT. | 14 FT. AND OVER | TOTAL
Atlantic Coast Waterways (exclusive of Atlantic Intracoastal Waterway from Norfolk, Va., to Key West, Fla.), but including New York State Barge Canal System | 1,426 | 1,241 | 584 | 938 | 1,581 | 5,788
Atlantic Intracoastal Waterway from Norfolk, Va., to Key West, Fla. | 1,487 | 1,445 | 589 | 965 | 1,544 | 6,030
Gulf Coast Waterways (exclusive of Gulf Intracoastal Waterway from St. Marks River, Fla., to Mexican Border) | — | 89 | 65 | 1,104 | — | 1,234
Gulf Intracoastal Waterway from St. Marks River, Fla., to Mexican Border (including Port Allen-Morgan City Alternate Route) | 2,055 | 647 | 1,133 | 79 | 370 | 4,282
Mississippi River System | 2,174 | 812 | 2,095 | 269 | 388 | 5,738
Pacific Coast Waterways | — | — | — | 1,137 | — | 1,137
Great Lakes | — | — | — | 1,180 | — | 1,180
All Other Waterways (exclusive of Alaska) | 2,828 | 868 | 4,957 | 748 | 268 | 8,954
GRAND TOTAL | 4,365 | 1,457 | 5,062 | 755 | 268 | 11,907
 | 730 | 490 | 237 | 26 | 2,064 | 3,515
 | 733 | 515 | 237 | 27 | 792 | 2,304
 | 45 | 88 | — | 8 | 348 | 488
 | 100 | 140 | 14 | 8 | 369 | 629
 | 76 | 7 | — | 1 | 7 | 91
 | 76 | 7 | — | 1 | 7 | 91
 | 8,352 | 3,516 | 6,878 | 4,033 | 4,886 | 25,543
 | 8,935 | 4,544 | 8,062 | 4,309 | 3,368 | 29,218
[1]The mileages shown in this table in bold type represent the lengths of all navigable channels of the United States including those improved by the Federal Government, other agencies, and those which have not been improved but are usable for commercial navigation.
The mileages shown in this table in light type represent the lengths authorized for improvement by the Congress of the United States in legislation known as Rivers and Harbors Acts.
The sources for these tabulations are publications of the Corps of Engineers, United States Army.
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
ATLANTIC INTRACOASTAL WATERWAY
GULF INTRACOASTAL WATERWAY
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
ARIZONA
NEW MEXICO
TEXAS
COLORADO
KANSAS
OKLAHOMA
NEBRASKA
SOUTH DAKOTA
NORTH DAKOTA
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
CONNECTICUT
RHODE ISLAND
NEW JERSEY
DELAWARE
MARYLAND
SEATTLE
PORTLAND
SALEM
OLYMPIA
THE DALLES
BOISE
SAN FRANCISCO
SACRAMENTO
CARSON CITY
LOS ANGELES
SAN DIEGO
PHOENIX
SANTA FE
EL PASO
OKLAHOMA CITY
DALLAS
FORT WORTH
AUSTIN
HOUSTON
GALVESTON
NEW ORLEANS
BATON ROUGE
JACKSON
MEMPHIS
LITTLE ROCK
ATLANTA
BIRMINGHAM
MONTGOMERY
MOBILE
JACKSONVILLE
TALLAHASSEE
TAMPA
MIAMI
KEY WEST
CHARLESTON
COLUMBIA
RALEIGH
WILMINGTON
NORFOLK
RICHMOND
CHARLESTON
PHILADELPHIA
NEW YORK
BOSTON
PROVIDENCE
HARTFORD
BALTIMORE
WASHINGTON D.C.
DETROIT
TOLEDO
CLEVELAND
BUFFALO
PITTSBURGH
COLUMBUS
INDIANAPOLIS
CHICAGO
MILWAUKEE
MADISON
GREEN BAY
MINNEAPOLIS
ST. PAUL
DULUTH
DES MOINES
OMAHA
LINCOLN
KANSAS CITY
TOPEKA
ST. LOUIS
SPRINGFIELD
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
ST. LAWRENCE RIVER
COMMERCIALLY NAVIGABLE
WATERWAYS
OF THE
UNITED STATES
CONTROLLING DEPTHS
9 FEET OR MORE
UNDER 9 FEET
AUTHORIZED EXTENSIONS

FIGURE 5

OCEANGOING VESSELS

Secretary BRINEGAR. The principal port problems are: (1) the need to provide offloading facilities for very large crude carriers (VLCC's) now coming into service to move crude oil (the 200,000 tonners); (2) the dislocations being produced by the rapid shift of general cargo from general cargo ships to container and barge-carrying ships, and (3) concern about environmental impacts of port facilities on the coastal zone.

There are at present approximately 600 active oceangoing U.S.-flag ships aggregating slightly more than 13.5 million deadweight tons. As a result of 1970 legislation, U.S. shipyards now have their greatest volume of business for large oceangoing ships in any peacetime year: 88 ocean-going vessels are under construction or on order valued at more than $3.4 billion. The fleet now contains highly specialized cargo carriers such as containerships, roll-on/roll-off ships, and very large crude-carrying tankers.

AIR TRANSPORTATION

Let's now shift to talk about our air transportation system.

Some 12,500 airports serve a general aviation fleet of 140,000 airplanes and a commercial aviation fleet of 2,500. The largest 400 of the airports are equipped with control towers installed and operated by the Federal Aviation Administration; 61 are equipped with automatic radar terminal control systems. These terminal control centers are connected with 20 en route control centers that manage the domestic airspace movements of the commercial air fleet and part of the general aviation fleet. These 61 terminal control centers and the 20 en route control centers are shown on the map in figure 6. The FAA also operates about 300 flight service stations to provide weather and other assistance in general aviation. The 26 largest airports (shown by the large circles in figure 6) serve nearly 70 percent of all commercial aviation passenger enplanements. Principal air routes for instrument flight rules (IFR) traffic are shown in figure 7. This, I think, illustrates the shifting of more of our commerce into the air, one of the obvious reasons that rail passenger traffic has declined. The air routes have become the interstate highway system of the air. A major outstanding issue involves the equitable allocation of the costs of operating the airport and airway system among the various users of the system.

MAJOR ELEMENTS OF NATIONAL AVIATION SYSTEM
(DEC. 31, 1973)

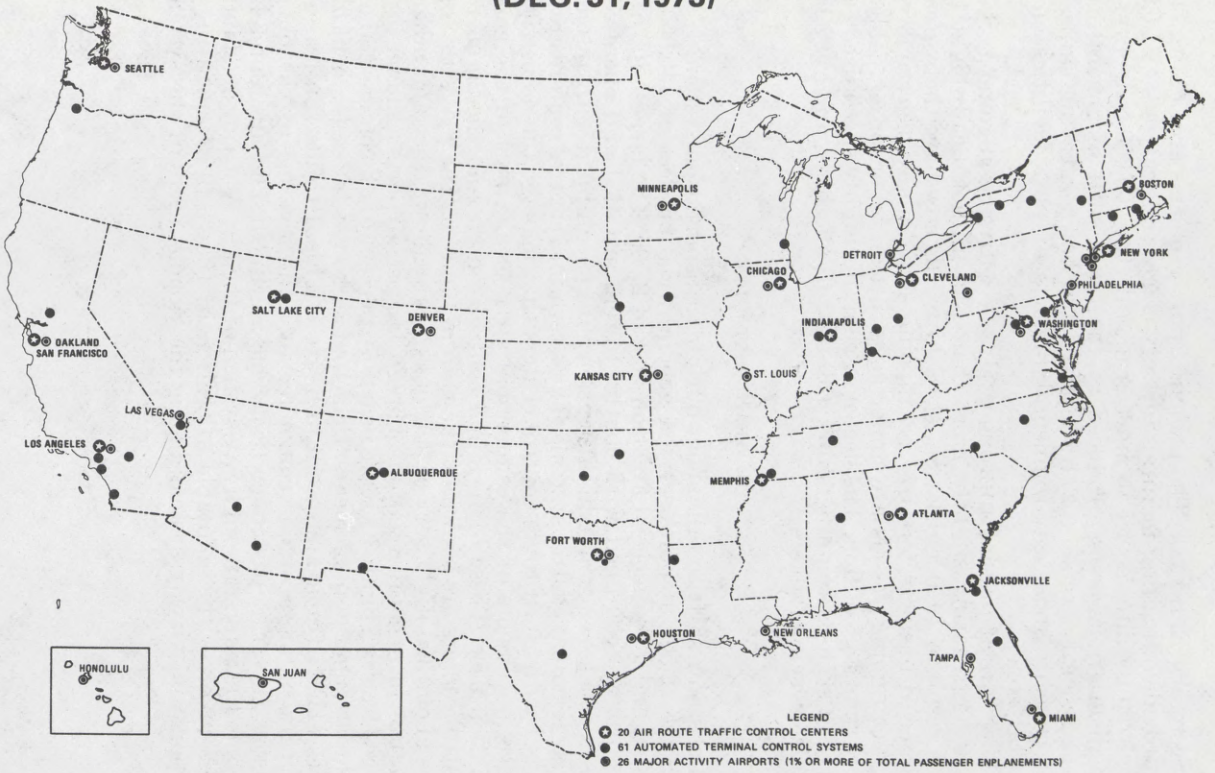

FIGURE 6

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration

PEAK DAY IFR TRAFFIC FY 1971

Communities Exchanging 10 or More Flights

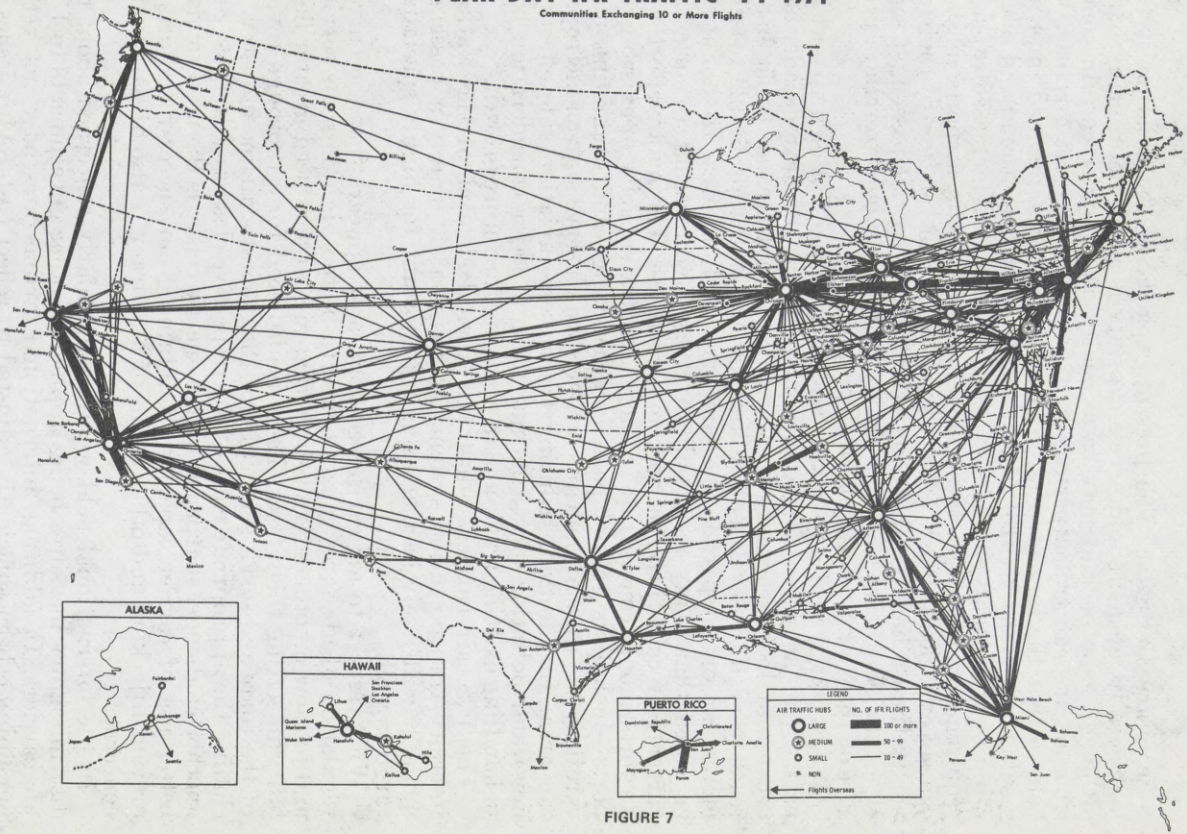

FIGURE 7

CAPACITY OF AVIATION SYSTEM

Secretary BRINEGAR. The present capacity of the aviation system is generally adequate and excess capacity is available in many parts, although some backup may occasionally occur under certain conditions or at peak traffic periods in a few of the largest airports. We believe that the increased use of wide-bodied jets, planned improvements in air traffic control systems, and certain operational and scheduling improvements should serve to meet projected increased capacity requirements for at least the next decade. Certain airports may, of course, experience much higher levels of use in relation to their capacity than others. In this connection, improved rail passenger service in the Northeast Corridor could significantly help to relieve pressure on the New York City area airports.

We expect few, if any, major additions to the Nation's airport capacity (in the sense of new airports) during the next decade, both because of local resistance to new airports and because traffic has to reach very high levels before air carriers find it profitable to serve more than one airport in the same metropolitan area. It should also be noted that many metropolitan areas have existing airports that currently receive little or no commercial use. The major effort with airports should concentrate on increasing the capacity of existing airports—including ground passenger handling—and examining more carefully the roles of multiple airports which serve a given metropolitan area. In addition, reducing the adverse aviation side effects of noise and pollution must continue to be a major consideration both in handling existing traffic and in planning for future growth.

The U.S. air carrier industry is a vital element of the Nation's intercity transportation system. Although it is mainly a passenger mode, it will likely be increasingly important for highly specialized cargo as well.

With respect to air carrier economics, it appears that the current regulation of air fares causes prices to be too high on some services and too low on others. We believe that air carriers need greater flexibility in setting their fares. There is also need for a thorough review of the route and service structure of the domestic airline industry, including the appropriate roles of the respective classes of carriers. Still another challenge, sharpened by the energy crisis, is the need to make better use of carrier capacity. Maintaining our successful efforts to prevent hijacking and other forms of air piracy is also of paramount concern.

In the international field we are particularly concerned about the discriminatory measures being applied by other governments to U.S. air carriers. In addition, international airline rates have not yet in our opinion been sufficiently adjusted to reflect costs. Also, issues regarding long-term, overseas route structures now need a careful study.

ENERGY USAGE IN TRANSPORTATION

Let me now shift to a kind of an overview on the energy matter in transportation and pull together some of the parts I mentioned earlier.

Various transportation sectors account for nearly half the Nation's usage of liquid petroleum. In the preceding pages we have discussed some of the specific efforts needed to increase transportation's energy efficiency. The following table, which shows average energy efficiency in terms of passenger miles and freight ton miles per gallon, summarizes the key points:

AVERAGE ENERGY USAGE AND EFFICIENCIES

Passenger mode	Fuel usage, 1,000 barrels per day (1973)	Passenger-miles per gallon of fuel (1973)
Rail	10	100–150
Bus	70	75–150
Automobile	5,000	30
Air	700	15

Freight mode	Fuel usage, 1,000 barrels per day (1973)	Freight ton-miles per gallon of fuel (1973)
Water	120	300
Rail	300	180
Truck	1,450	50

Note: Various other transportation uses (for example, international carriers, nonfreight trucks, recreational) total about 1,500,000 barrels per day.

Secretary BRINEGAR. Rail passenger service, shown at the top in the passenger transportation category, uses only 10,000 barrels a day, averaging between 100 and 150 passenger miles per gallon. Buses use some 70,000 barrels a day, with passenger miles per gallon between 75 and 150, quite competitive with rail. The automobile, on the other hand, uses about 5 million barrels a day, averaging about 30 passenger miles per gallon. Air uses some 700,000 barrels a day, averaging about 15 passenger miles per gallon.

In the freight category, water transportation—and these numbers relate to inland waterways traffic—uses about 120,000 barrels a day at about 300 freight ton miles per gallon. Rail uses some 300,000 barrels a day, at about 180 ton miles per gallon. Trucks use about 1½ million barrels a day at about 50 ton miles per gallon. At the bottom there are various other transportation uses accounting for about 1½ million barrels a day.

Thus, strictly from an energy efficiency standpoint, our efforts in the passenger area must be heavily concentrated on (1) increasing automobile fuel efficiency through research and body changes, weight, what have you, (2) adding passengers to automobiles (as in car pooling); and (3) shifting usage away from automobiles into rail and bus service. It's important to recognize, however, that other factors can sometimes be of prevailing importance. The air sector, although it represents a relatively inefficient usage of fuel in a relative sense, offers such strong advantages in terms of speed, that it clearly must be supported. Our efforts on improved energy efficiency in air should be concentrated—they are going up of course right now—on increasing load factors (which averaged about 50 percent in 1973).

The freight data shows the strong need to promote additional carriage by water and rail, where feasible. However, trucks offer special advantages (such as speed and reliability) and, like air, deserve support. Our efforts in the trucking area should be concentrated on increased efficiency in the energy usage of trucks now on the road (less restrictions on routes and backhauls, and so forth).

The most important point brought out by this table is the overwhelming importance of the automobile in the energy picture. Really significant savings in energy usage in transportation will only come from significant improvement in automobile efficiency.

EXISTING TRANSPORTATION STRUCTURE

Let me now draw these comments together into something of a summary as to where we stand today.

In planning our transportation system for future growth, we must separate the need for physical expansion and improvement from the need for better management and utilization of the existing structure.

With the completion of our Interstate Highway System, the Nation's basic highway structure in our view will be largely in place. What is needed in the future is better traffic management—especially on the major urban highways—and modernization and upgrading of existing roads to make them safer and to eliminate serious bottlenecks.

The existing physical plant of the railroads has much greater capacity than will be needed for any foreseeable demand for rail freight service. The primary emphasis here should be on rationalizing the rail network, improving the roadbed, and taking steps to insure more efficient use of the freight car fleet. Rail passenger service should be improved, particularly in the Northeast Corridor.

Our ports and waterways also face no overall capacity restrictions, except for a few special situations involving expansion of lock facilities and the need to develop facilities for deep draft ships.

Urban transit faces large peaking problems in major cities. The solution here calls for better management of demand and more flexible utilization of equipment, as well as selected expansion of fixed facilities.

There is generally adequate capacity in the aviation system, although there may be pressure on capacity at peak periods at a few key airports. Improved air traffic control systems, plus the use of larger aircraft and improved operational scheduling, should serve to accommodate this pressure for the coming decade. Beyond these measures, the preferred means of accommodating increasing pressures on airport capacity are diversion of short trips from aviation to other modes and the spread of aviation traffic into additional existing airports, as the market may dictate. Better management and utilization of existing facilities may also be accomplished through the concentration of general aviation at secondary airports in many metropolitan areas and the distribution of traffic away from peak periods.

It should be stressed that the foregoing positions do not reflect an abandonment of Federal responsibility for maintaining adequate

capacity in the intercity transportation system, nor do they mean that the possibility of the emergence of future capacity problems will be ignored. Rather, it means that, since lack of capacity will not be characteristic of the system as a whole during the next decade, the problems or bottlenecks that arise should be dealt with on a specific basis, with any Federal role tailored to the specific problem at hand.

The concentration on better management of transportation facilities for all modes should include a special emphasis on improving the connecting relationships between modes.

From this overview of where we stand today, we can now turn to a summary of the policy principles that we believe should guide our future actions.

POLICY ELEMENTS

I have addressed these in 10 principles. I would like to stress that they of course need regular review and updating, both to reflect changing national goals and priorities as well as increasing knowledge and understanding and we welcome suggestions.

1. The overriding thrust of Federal policy is to see that the Nation has an overall transportation system that reasonably meets its essential needs. To the maximum feasible extent, this system should provide transportation that is efficient, safe, fast, convenient and limits negative impacts on the environment. While it will never do that to the satisfaction of all, the system should be able to meet this broad objective within reasonable limits.

2. The Nation's transportation system should, as much as possible, be provided through the competitive forces of the private sector, or, if the private sector is inappropriate, by State and local governments. Direct Federal financing of transportation investments or operations should be limited to those few cases where there is a clear and widely accepted requirement for concerted action in an area of high national priority, and where the private sector or State and local governments are obviously incapable of adequately meeting this requirement. The Federal Government should insure that, where privately operated transportation services essential to the national well-being are being threatened by financial or other problems, timely action is taken to solve those problems so as to preclude the need for Federal takeover or "nationalization."

3. When Federal expenditures are used to finance transportation investments or operations, these expenditures should be recovered from the users and other beneficiaries in a manner that is appropriate to the degree of benefits received, unless widely accepted national policy directs otherwise. Examples of present major problem areas include: (*a*) the current practice of not collecting fees from the users of inland waterways that have been developed and are maintained with Federal funds, (*b*) the method of charging the various classes of aviation for the use of federally financed air traffic control systems, and (*c*) the lack of a policy concerning the future acceptable level of losses of Amtrak that are to be financed by the general taxpayer.

4. The economic regulation of interstate transportation needs to be thoroughly reexamined to determine which parts are necessary, as a minimum, to protect the public interest, and those which, through the passage of time, have become more of a burden than a help. We believe that a significant streamlining of this regulatory process is in order, directed to greater reliance on the forces of open-market competition. A particular effort is needed to eliminate restrictions on intermodal competition.

5. It is of national importance that we deal aggressively and equitably with transportation issues involving conservation of scarce energy resources, the provision of safe transportation, protection of the environment, and the availability of satisfactory transportation for the poor, the handicapped, and the elderly. We must recognize that it is most difficult to resolve the conflicting points of view that too often accompany these issues. This uncertainty causes delay, confusion, and excessive reliance on appeals to the courts. A better process for resolving these conflicts is needed.

6. The severe transportation problems now present in our large urban areas, and the relationship of these problems to other urban issues, require a special Federal effort, including some general taxpayer support. This effort should be directed toward encouraging: (a) the establishment of non-Federal governmental mechanisms that embrace the full urban area and have authority to make and implement all relevant urban plans, (*b*) the development at the local level of urban plans that properly relate transportation needs to future land-use plans and community development objectives, and (*c*) the development of plans that are appropriate to the structure and size of the urban area. A corollary to the last point is that we will encourage urban areas to stress public transportation plans directed to using existing transit systems and highways more effectively—especially with high-quality bus systems, expanded jitney and taxi service, incentives to carpooling, and various devices to stretch out and reduce the rush-hour peaks. We will also very closely examine any proposal for construction of totally new fixed-guideway transit systems to determine whether it is the most reasonably cost-effective solution to that specific urban situation. Federal financial support from the general fund should be considered by the urban areas only as a supplement to State and local efforts.

7. Rural public transportation policy is today in an uncertain state, with numerous isolated rural areas now able to be reached only by private automobile. Would better rural public transportation today lessen future urban transportation problems? What are the proper transportation modes for rural service? What is the role of local air taxi service? How should rural public transportation that is not self-supporting be financed? These and related questions need widely accepted answers before this element of national transportation policy can be properly stated. Future statements will attempt to develop the needed policies.

8. A major cause of inefficiency in both passenger and freight transportation is the lack of close coordination among the various modes. This problem is compounded by the historical development of separate systems of terminals by each of the modes. A priority program is needed to lift unneeded restraints to intermodal cooperation and to encourage the joint use of terminal and other facilities by all transportation modes.

9. Federal research and development work on transportation should be directed to a limited number of programs with a high potential payoff to the Nation as a whole and with little likelihood of being adequately handled without some Federal support. Near-term programs that meet this criteria include: (*a*) improving the energy efficiency in all transportation systems, but especially automobiles, (*b*) improving motor vehicle, driver, and highway safety, (*c*) improving the air traffic control system to increase the capacity of the airways, (*d*) improving highway traffic control for automobiles and buses, and (*e*) increasing the operational efficiency of the national rail freight system.

10. Finally, we must advance the overall level of knowledge about the Nation's transportation system, its capabilities, and its problems. We must also raise the technical abilities of planners at all levels to provide solutions to major transportation problems. The Department's national transportation report and the university research program are significantly contributing to the needed knowledge base. Additional analytical effort is needed at the Federal level to improve our ability to identify potential problems before they seriously affect overall system capability.

CONCLUDING REMARKS

We well recognize that many aspects of the above policy statement—especially those that are rooted in the concept of the desirability of promoting more freedom of choice and greater economic efficiency—are controversial. Some will praise them; I am sure others will damn them. It must be understood that we do not put them forward as final answers—of which there are none—but rather as what appear to us to be the proper future directions for the Nation as a whole.

Plainly, Government needs to become more adept at managing needed changes. In developing policies to improve the Nation's transportation system we must recognize its dynamic, broad-based, and interdependent nature. This means having the courage of our convictions to bring about changes in public policy when new conditions and sound economic analyses call for them.

FUNDING LEVELS

Since this is the Appropriations Committee, it would be appropriate to conclude with a brief look at the level of appropriations on the fol-

lowing table. This will perhaps set the stage for next week's hearings.
[The information follows:]

FEDERAL FUNDING IN TRANSPORTATION

[Fiscal years]

	Obligations (millions)			Funding Trends for FY 1976–1980 (assuming constant $'s & wage rates)
	1973	1974	1975	
Ground transportation:				
Highway improvement:				
Interstate/rural/safety/other	$4,107	$3,820	$3,925	Remain at relatively constant levels.
Urban	508	800	875	Continued growth. Administration's UTAP will create new unified program for urban ground transportation, merging and expanding current urban highway and transit programs.
Mass transit	989	986	1,351	
Traffic and highway safety	156	160	220	May increase modestly.
Railroads	160	318	267	Slowly decline as AMTRAK reduces losses; offset in the near term by increases due to Northeast and Midwest rail restructuring program ($500,000,000 over 3 to 5 years); significant increase in Federal loan guarantees ($2,000,000,000 to $4,000,000,000).
Subtotal, ground transportation	5,920	6,084	6,638	
Water transportation:				
Coast Guard (maritime safety, environmental protection, and facilitation).	808	833	903	Gradual increase to handle expanding marine environmental protection and enforcement functions.
Ocean shipping	710	573	549	Not part of DOT.
Waterway/harbor improvement (Corps of Engineers).	490	541	538	Do.
Other	4	6	6	
Subtotal, water transportation	2,012	1,953	1,996	
Air transportation:				
Airways and airports	1,681	1,990	2,120	Dollar levels will grow slowly, but costs to the general taxpayer should decline as users assume a larger share of the system costs.
Air carrier subsidies	66	67	66	Not part of DOT.
Subtotal, air transportation	1,747	2,057	2,186	

FUTURE PROGRAM LEVELS

Secretary BRINEGAR. We have attempted to address in this table the recent level of obligations by major type—ground transportation, water transportation, and air transportation, with a very short comment about some of the implications for possible future levels. I will not dwell on it here, but we are trying to provide some guidance, as to our thinking, about future directions of program levels and the trends of where we see the dollar levels going. I note that in the portion relating to water transportation that ocean shipping and the waterway and harbor improvement obligations of the Corps of Engineers are not part of the DOT program.

In the area of air transportation, we indicate the airport and airways program level as well as the subsidies. The local service subsidy program is not part of our Department and I will make no comment on its level of direction.

With this, Mr. Chairman, I apologize for the long reading, but I thought since this is an important issue, we ought to address our issues

as carefully as we could to set the stage. I hope for a good discussion as to the subject matter.

Mr. McFall. Mr. Secretary, I think I ought to applaud.

Secretary Brinegar. I hope the transcript shows the applause.

TRANSPORTATION POLICY GOALS

Mr. McFall. I realize there has been a long effort by the Department, and an unusual personal effort on your part, to put together this very comprehensive statement. Surely not everyone in the room will agree with your policies, but this, as you say, is a progress report. Hopefully, some of the witnesses that we are going to have for the rest of the week will contribute their own views and ideas as to where we should go with transportation policy. Perhaps, we can come out with something better, along with some understanding of where we must spend the people's money in the years to come.

Secretary Brinegar. Thank you.

SERVICE CRITERIA

Mr. McFall. I think you would agree a policy should establish both what we should do and how we should do it. With respect to the "what" part, your statement seems to highlight the need for guidelines, standards, service criteria or whatever you want to call them. You referred in your statement to the lack of clear-cut guidelines and the difficulty because of this. Don't you think that we should express our goals more explicitly, such as it terms of desirable levels of service, comfort, safety and so forth?

Secretary Brinegar. As a brief answer, in some areas I think we should, particularly in the urban areas where we need to address the levels, the quality and the kind of seervice. I think we will find ourselves drawn into the area of service standards. I am not sure about the whole national transportation system. That raises very large issues. I hope in the side effect areas of environment, safety and transportation for the handicapped, that we could have better guidelines than we now have. Certainly we need better ways of moving forward than now exist. This is something we will be exploring in the next few months.

LACK OF DATA BASE FOR DEVELOPMENT OF SERVICE STANDARDS

Mr. McFall. Perhaps we could explore it a little further. Do you have an adequate data base to develop service standards such as we are discussing?

Secretary Brinegar. I doubt it. Certainly not in the areas where the problems are most difficult and that is the urban areas. We have service standards on our Federal-Aid Highways programs and in some of the FAA programs. But, in general, no; I do not think we do. As I mentioned in my statement, one of my goals was to improve this knowledge base.

Mr. McFall. Do you have any suggestion as to how we might improve this data?

Secretary BRINEGAR. As I tried to point out in this statement, which included something of an inventory of how we stand, in some cases we have tried to organize the data. I have seen weaknesses in the data. I think our National Transportation Study that we are working on should evolve more into the level of the data base than it has in the past, where in some areas I think it has been more in the nature of an exploration of various levels, almost irrespective of some standards. Frankly, I think we have right now all the legislative authority we need to do this. I think we need to discipline our approach and continue to fund some of our studies, our National Transportation Report that you are aware of, our university research program where we are putting money out to encourage thinking in the transportation field at the university level. All of these are building on this knowledge and data base; mainly a description of what we need, which we are working on. It will come, perhaps not as fast as we would like, but I think it will come, Mr. Chairman.

UNIFIED TRANSPORTATION ASSISTANCE PROGRAM

Mr. MCFALL. With reference to legislative enactments, I think you would agree that it would be desirable if each of your separate proposals could be fitted into a larger picture. Let us take what you have attempted in your unified transportation assistance program and the issue of Federal operating assistance for mass transit, which is a part of that. This could be an excellent example of where the lack of policy leads us.

Virtually everyone now agrees if you are going to have mass transit, you will have to have a subsidy coming from someplace. In the Federal Government, we need to determine what level of service we will subsidize and what part of the subsidy should come from Federal funds. To make this latter determination we first need to determine who benefits from transit and what those beneficiaries, such as the transit user, highway user, and local businesses should pay. Then, the Federal Government could, if necessary, contribute the funds needed to meet the established service standard. Would you comment on this, Mr. Secretary? Do you have the necessary uniform data to make these decisions?

Secretary BRINEGAR. Mr. Chairman, our unified transportation assistance program was the result of many months of work. It fits within our elements of policy, especially the one that talks about the need to address the serious problems of the urban areas and from the general fund. I also note that in No. 6 of our policy elements, that to us, as we have studied the cities—and we have studied in many ways the transportation problems of at least 100 of them and tried to estimate the priorities of the parties and what we could do to address them—the most serious deficiency was the lack of mechanisms at the local level to decide what they were doing. That is, responsible local planning embracing the boundaries of not just the cities, but of the relevant urban area. You cannot solve a transportation problem if you stop at the city line when in fact the people move back and forth across the line. So we designed our program to encourage that kind of planning and data base development at the local level.

DOT PROPOSAL INCLUDES INCREASED FLEXIBILITY

As I indicated in many ways, every city is different. Our proposal builds upon the increased flexibility provided to urban areas in the 1973 Highway Act by establishing an urban mass transit formula grant program modeled on the successful highway program. Beginning in 1978, these two similar programs would then be merged into a single urban transportation grant program, We will, of course, be continuing a discretionary UMTA capital grant program in recognition of the significant demands for major expansion of transit systems. The cornerstone of this proposal is the provision of flexible Federal funds to permit State and local officials to solve their own problems. Under this proposal, if New York sees that to maintain their levels of service they need to put money into operations, and on the other hand Kansas City needs buses and bus lanes, then they can make the kinds of choices to meet the requirements of their local plans under the guidelines we provide. We think our approach to the operating subsidy issue, of letting the local people decide locally, is the right kind of approach to stimulate the local solutions for the urban problems.

We oppose the S. 386 conferenec report because we think it is tilted too much in the direction of New York. It has gotten away from involving the Governors and mayor in planning and is really a very-short-term address to this long-term problem that we have tried to identify. We think our bill fits in our policy. We think we know enough to see it properly administered. We can always see some arguments, I realize, but I think it is the proper approach.

SUBSIDY ROLE OF FEDERAL GOVERNMENT

Mr. McFall. When we talk about subsidy, what should the role of the Federal Government be in your proposed act? You are proposing a sort of large pot in which local officials would have choices. I am not sure this is the way we ought to go. Wouldn't the choices then inevitably be wrong? If a transit operator has just so much money to operate his bus system, wouldn't he choose to use the money for subsidy, thus perhaps shorting the capital grant program and leading to even more trouble down the road? I believe there can be more Federal guidance without taking over complete operation of the systems. By providing a potful of money and forcing choices on local officials you make them choose between difficult alternatives by virtue of the economic choice which they have. What are the factors involved in this?

Secretary Brinegar. Mr. Chairman, we have addressed this issue from a number of sides. I come back to the point that local areas are of course making choices. We have right now a program that only permits them to come to us for capital. This has some disadvantages because there is a tendency to think big capital because it is basically free Federal dollars. Some cities have addressed themselves to capital without, I think, seriously thinking about the operational needs of the area. The division between capital and noncapital is fairly fuzzy, particularly in the maintenance area where the accountants may call it

one thing and in fact it is something else. You could argue if you can get free capital you can wear the system out and come back for more free capital. We propose that only about 30 percent of the money be available for this tradeoff. They cannot take this limit off. There is a discipline in the total that could be used. We think some of the cities have very urgent operational problems and should be permitted to so allocate their money. The others do not. As we studied the cities by size and type, taking those from a million up and those from a million down, the needs for capital are less as you move down in size. We think the bus program will provide a great deal of capital to the cities.

I cannot see, except for the six or seven big cities, any situation where the problems would be so bad as to cause the people to pick the operational side and neglect completely buying capital. We think they have enough for both in our program. For the few really big cities, the problem becomes a matter of deciding what it is they are trying to do and how we can help them. We have proposed in our bill a requirement we call a maintenance of effort. If they are now putting some money into the operational system they have to keep doing it and we will have some guidelines of service. To say that we have a specific operating subsidy program, which would be the opposite of what you are talking about, the evils that raises to us far overshadow some of your concerns. If, for example, in a program such as the original Minish-Williams bill, I have to decide which systems get which money in response to applications. That puts me in the business truly of almost running—or at least watching the wage rates, the maintenance, costs and fare rates of—some 500 transit systems. I do not think that is a role we should be doing. We should be putting the pressures on them. A labor union knowing that the Federal Government has money to pay a higher wage cost would find it an easier job to bargain. We think the pressures ought to be at the local level to make these tradeoffs. We have opposed a direct operating subsidy program as being contrary to the stimulus of efficiency and good management at the local level. We have said, for the cities that want to, there should be some opportunity and we have offered something like 30 percent initially. We think it is a fair balance.

BUDGETARY IMPLICATION OF POLICY STATEMENT

Mr. McFall. What do you believe will be the major budgetary implications of your statement over the next 3 years for the Department of Transportation as a whole and for the major components of the Department?

Secretary Brinegar. The two areas we see rising are urban and rail. In the urban area, we think that these priority demands do require a larger program than we now have and we have proposed one. In the rail area, we believe that the restructuring of the Northeast will take more money for rail than we put in it in the past. There is also a Federal exposure to some fairly large loan guarantees to launch this new, private sector railroad in the Northeast. In the other areas, I think the changes will be more modest and I would prefer to furnish an answer for the record.

[The information follows:]

POLICY IMPLICATIONS FOR BUDGET

Except for some increase for urban transportation, no major change in budgetary requirements are anticipated over the next 2 to 3 years. More specifically:

In the area of urban transportation, some growth is expected in Federal funding over the next few years as the unified flexible programs under the new UTAP proposals revitalize the urban transportation system. In the out-years toward the end of this decade, some decline is forecast in Federal funding as the need for major infusion of Federal funds for mass transit capital improvements peaks to accommodate long unmet needs and subsequently a decline as these major one-time capital needs are met.

For highways, a gradual transition is forecast for at least part of the Federal program to State and local funding as the Interstate System nears completion.

For rail, the Northeast corridor problems may require a near-term infusion of higher funding levels. However, in the long term, the Rail Reorganization Act, the proposed Transportation Improvement Act and the Amtrak Act will be most helpful in returning the rail segment of the National Transportation System to economic, profitable operations in the private sector. This will result in a diminution and gradual phaseout of the need for infusion of Federal appropriated dollars.

For maritime safety, environmental protection, and facilitation, some form of continuing Federal role transcending that of States and localities is anticipated with the States and localities assuming a greater responsibility for boating and maritime safety in their respective harbors and waterways.

For aviation, the great strides which have been made over the past few years in modernizing the traffic control system and expanding its capability have paid off handsomely. In future years, the cost to the general taxpayer should decline as users assume a larger share of the system costs.

Mr. MCFALL. Thank you, Mr. Secretary. Mr. Conte, do you have some questions?

OPERATING SUBSIDIES

Mr. CONTE. Thank you, Mr. Chairman.

Mr. Secretary, with regard to the bill that is before the country on operating subsidies, isn't it true that if we pass this bill there will be no end in sight to Federal mass transit subsidies? That it will be just like throwing corn down the rathole? If the money doesn't come from the Federal Government, from operating subsidies, then the unions themselves will just hold out for increased wages and fringe benefits and what not, knowing that this money will be easily obtained from the Federal Government in the end?

Secretary BRINEGAR. I agree completely.

Mr. CONTE. Another problem with this bill is that it also provides for backdoor spending. Congress has been screaming that they have given too much of their authority away to the executive branch of the Government. Here, the appropriation process again will be circumvented. I would imagine that Mr. Mahon will be on the floor screaming to the high blue heavens on that.

Secretary BRINEGAR. We agree with you. We think the only possible role is a larger trade-off decision as we have tried to write it into our proposal.

LABOR COSTS

Mr. CONTE. Does the Department of Transportation bill provide that if the labor costs go up the city will pick up the additional cost of labor?

Secretary BRINEGAR. It requires the city to maintain a prior level of expenditures but what we propose is basically an allocation of a fixed amount of money to each large urban area over a 6-year period. From that money, within limits, they have to decide its use. If they put more into labor, then they take more out of capital. It is a matter of deciding locally what the priority issues are. We think this is a kind of tradeoff decision that keeps the pressure on that area. In addition we would reserve some money for large grants.

GUIDELINES TO ASSIST COMMUNITIES IN GETTING FUNDS

Mr. CONTE. Here again, I believe you are going to put a lot of pressure on communities. Because that money is there, and labor is going to apply pressure for money for added labor costs.

Secretary BRINEGAR. It is money that has to be used for a number of purposes—urban highways, urban transit and capital costs. These other matters will cause rationing. Some of the cities clearly need help in finding ways to get this money. We recognize that and we think we have limits and guidelines to keep it under control.

Mr. CONTE. I am very sympathetic about it. But I would like to find out what kind of guidelines will be provided?

Secretary BRINEGAR. We can provide those to you.

[The information follows:]

GUIDELINES FOR USE OF OPERATING SUBSIDY FUNDS

The unified transportation assistance program legislation we are proposing specifies that funds authorized by the act which are used for operating expenses should be related to planned improvements in transit service. It is not the intent of the bill therefore that Federal funds would simply be used to substitute for existing contributions by State and local governments. In fact, the bill specifically provides that the State/local governments receiving these grants must agree to continuing their existing fiscal contributions—the so-called maintenance-of-effort requirement. The specific regulations which will govern the operation of this program are now under development by the Department. Clearly these regulations must define very precisely what operating expenses can be covered and under what circumstances, but within the statutory guideline that they must be used for service improvements.

FORMULATION OF TRANSPORTATION POLICY

Mr. CONTE. You state you feel national transportation policy will be guided by 10 principles, which you set out on pages 45 through 51. Notwithstanding the merits of these principles in fact, they do not provide a method for developing a coherent national transportation policy. They do raise some valid questions. They highlight the lack of policy. They are not, and probably were not intended to be, a method for developing policy.

Assuming we could, and I believe we can, get some agreement on fundamental underlying principles, my question becomes: How would you then go about formulating policy?

Secretary BRINEGAR. I started my statement with some sort of philosophy on that issue as to how you move from goals to programs, and in the role of policy, in trying to make that shift. I think that much of the issues that concern us are program issues; that is, what does a highway program or aviation program look like in specifically ad-

dressing the two issues at hand? I am trying to sort out here what we view as the policy principles to help us to develop those programs. I am trying to address the issues of what are the policy principles that provide the guideposts. If we can agree on the policy principles, we can move ahead on the program issues. I have a little trouble. Perhaps you could suggest the kind of answer that is in your mind as to what comes next.

Mr. CONTE. Perhaps, we would be here for the rest of the week if I began. I do feel there is a need to express your objectives more specifically. I would be glad to sit down with you and discuss this further.

Secretary BRINEGAR. I would be pleased to do that.

RAILROAD OUTLAYS

Mr. CONTE. I do not see you very often. Why do you now decrease fiscal 1975 outlays for railroads from $292 million to $265 million? I realize we are going to get into budget matters later on, but this is a policy matter as far as I am concerned.

As you pointed out, one of the most efficient modes of transportation when it comes to energy conservation is rail transport. If anything you then should be on the uptake here?

Secretary BRINEGAR. The level of railroad outlays and obligations for continuing DOT funded railroad programs is going up. However, I would like to reply to you in more detail for the record. There is a reason for the decrease caused by items of a nonrecurring nature which tend to reflect outlays on the decline.

[The information follows:]

DECREASE IN RAILROAD OUTLAYS

Total fiscal year 1975 outlays for railroad activities appearing in the 1975 President's budget do show a decrease from 1974. However, as indicated in the table below, this decrease is not reflected in the outlays for continuing DOT railroad programs which show an increase of $22 million. As noted on the table below, there are three separate items that make up the outlay total and each should be analyzed separately:

RAILROAD OUTLAYS

[In millions of dollars]

Administration/appropriation	Amount		
	Fiscal year 1974	Fiscal year 1975	Difference
FRA:			
Emergency rail facilities restoration	27	0	−$27
Grants to National Railroad Passenger Corporation (Amtrak)	$156	$143	−13
All other FRA accounts	49	71	+22
Total, FRA	232	214	−18
OST: Interim operating assistance	50	35	−15
USRA: Administrative expenses	10	16	+6
Total	292	265	−27

However, as the table above shows, $27 million of the decrease related to the emergency rail facilities restoration program which provided relief to the railroads for Hurricane Agnes. This progam will be teminated in 1974. Additionally, Amtrak outlays decrease in 1975 by $13 million which is attributable

to a decline of the operating deficits. After adjusting outlays for these programs, the continuing Federal Railroad Administration program shows an increase of $22 million over 1974.

Section 213 of the Regional Rail Reorganization Act of 1973 provided an authorization of $85 million for interim operating assistance to make certain payments to the trustees of railroads in reorganization. Included in the 1975 budget is a supplemental request for 1974 which will bring the total amount appropriated for this program to the maximum level authorized by the act. Assuming the total authorization is appropriated in 1974, $50 million is estimated to be paid to the trustees in 1974 with the remaining $35 million to be paid in 1975.

AIRLINE LOSSES DUE TO ENERGY CRISIS

Mr. CONTE. How about the airlines? You mentioned some of your policy with regard to passing of costs. The overseas airlines have suffered greatly because of the energy crisis. What do we intend to do in this field?

Secretary BRINEGAR. I tried to indicate that right now it raises more questions than answers. The role of our overseas carriers who are competing with other countries basically in their route structures, and against each other in some cases, is most worrisome because the fuel costs are largely out of control and their ability to raise their rates is not within their control. They are experiencing some extremely difficult financial problems. I listed and specifically indicate that is a high prority matter on our agenda right now. I would like to defer comment on the subject at this time.

VACATION TRAVEL

Mr. CONTE. Very well.

What are you doing, Mr. Secretary, to assure that more and more Americans in 1974 will travel, plan, and take their vacations by train and bus rather than private automobile? And have you already noticed any such change in modes of transportation? If so, what are you currently doing to encourage and stimulate this development?

Secretary BRINEGAR. The first thing we did was to lean hard on the Federal Energy Office to make sure that they were allocating all the fuel that the commercial transportation companies could possibly use. They did pretty much that. The basic philosophy has been to allocate the oil that flows from the refinery into all uses except the family automobile and let them have what is at the gasoline pumps which has caused lines. This philosophy inevitably encourages a vacation shift to public transportation. We have authorized Amtrak to add the two routes that were in dispute.

We are encouraging them in their equipment refurbishing and new equipment. Basically it is a matter of pushing Amtrak for service, recognizing that just putting a train on does not necessarily mean it has to be a good idea. There have to be people to be moved and there has to be equipment. The intercity bus system is a private sector system—sometimes competing against Amtrak on some routes at taxpayers' expense—ordering equipment, expanding rapidly, and I have discussed this with the Greyhound and Continental people. They have capacity for perhaps a 40-percent expansion right now and they are putting on all kinds of new buses as the needs are there. I think you will

see quite a shift into that form of transportation. We must also look at the air mode—when an airplane is half full, it is a very energy-efficient idea from the energy standpoint to fill the other half, if it is going to make the trip anyway. I think you will see a real shift in the public transportation this summer away from the automobile. We are doing a fair amount of planning. But we are not particularly in the business of running their detailed operations.

Mr. CONTE. I realize that.

Would you say it is accurate to describe our present transportation system as, "an uneven fabric, ill-suited to today's needs, with unbalanced regulatory structures applied by the Federal, State and local regulatory agencies with an inbalance between the various investments of the various industries?"

Secretary BRINEGAR. I hesitate to say because you might be quoting something I said. However, I would not say it unless it was written down and handed to me to read. The transportation system is better than that when you break it into little parts and compare it to the rest of the world. The Europeans, when they come to this country, are extremely impressed with our intercity freight system. Our freight ton mile costs are the lowest. Our air system is by far the world's best. We fall down by what we have done in the cities. We have grown rapidly since the war. We fall down in the rail passenger mode and that is because we had a regulatory policy which I would say, in quotes, has not particularly worked to help the rail passenger side. We have an uneven fabric but it is not all that bad.

EFFECT OF TRUST FUNDS ON TRANSPORTATION INDUSTRY

Mr. CONTE. What do you believe to be the effect of modal trust funds on the transportation industry?

Secretary BRINEGAR. Like the Highway Trust Fund?

Mr. CONTE. Yes.

Secretary BRINEGAR. If they are written too narrowly they can stimulate narrow thinking. I have listed in my principles the need for intermodal coordination. When you try to look at the inefficiencies of the system they are the most serious when one mode of highway or rail or air is moving from one to the other. To the extent that they encourage categorical thinking they are worrisome. This was the major thrust of the 1973 Highway bill. We proposed that that part of the money that went into the cities to build urban highways should not be limited to building only highways. The Congress did agree with that idea, with some restrictions, that you can have a trade-off. I think the Airport-Airway Trust Fund raises some issues in that respect. We may want to seek some more flexibility so that we can encourage a better use of the air system. When dealing with the intermodal hook-up question, we prefer more flexibility than what I call fairly narrow categorical thinking.

CURTAILMENT OF FREIGHT LINE SERVICE

Mr. CONTE. You appear to favor abandoning lesser used freight lines in the Northeast? Have you studied the proposed abandoned lines? Have you carefully examined the relationship between these freight

lines subject to abandonment and passenger services available with an eye toward increasing healthy freight line-passenger relationship?

Secretary BRINEGAR. We endeavored to do that in a preliminary way. We did not propose any abandonment that would affect passenger service. We were addressing in our report the freight needs of this 17-State Northeast and Midwest area and the freight business that we thought could be hauled by the private sector railroad. We did not say that the areas that we recommended service curtailments would lead to abandonment. We said that service should be carefully looked at because the levels of freight movement were so low as to raise real questions about its marginal return. I think that this is the kind of work that is going on in the ICC hearings and will eventually be looked at by the U.S. Railway Association.

I don't think we affected passenger service. I don't think we proposed service changes in any areas that would affect the economy. In all cases we would have truck service or in some cases there would be subsidies for local areas if they wanted to keep the service. Although our report indicated that 25 percent of the trackage should not continue in service, the remaining trackage would haul 96 percent of the freight. I have trouble in immediately concluding that 4 percent, which should have to be looked at on a case-by-case basis, imperils the economy of these regions. I think we have to look at that carefully.

Mr. CONTE. I am pleased to hear you say your report does not mean freight line abandonments. We had hearings in Boston recently and I testified on behalf of my district in the New England Congressional Caucus. Sometimes I believe I am penalized for being on this committee, and also being penalized for having been so strongly in favor of the Northeastern railway bill. Most of the lines which you recommended for abandonment are in my District. And you now say that personnel of Transportation had only 30 days to prepare their report?

Secretary BRINEGAR. This represents an assembly in 30 days of work that had been going on for many months. We are now trying to gather the information. These are the candidates. Even the ICC has a rule that leads to abandonment eventually, and in fact, our rules are not far from their rules. You get back to the fact that the Penn Central was losing a great deal of money.

There are reasons. There are duplicative main yards and there are inefficient yards and there are branch line services that are clearly so low that they should not continue. They should shift to truck. So those are the issues we addressed. I think in time those will come out and we will find a way to structure a proper railroad. This is the first step.

Mr. CONTE. You said those are the candidates? I hope a lot don't make that team. Thank you, Mr. Chairman.

Mr. MCFALL. Mr. Steed, I believe you have some questions.

Mr. STEED. Mr. Secretary, when we address ourselves to transportation policy, of course, we first turn to where we are and then we think about where we would like to go. I congratulate you for having made a very fine statement this morning on both points.

Secretary BRINEGAR. Thank you.

TAXES GOING TO TRUST FUNDS

Mr. STEED. As I went through it with you, I was impressed by the need for the investments by the private sector and by the public sector to accomplish an acceptable transportation system. This requirement for additional funds brought up this point in my mind. You pointed out that the automobile and the truck currently are making astronomically heavier demands on our energy needs than any other modes of transportation. I think we are all aware of the fact that we have had a slight energy crisis here lately. One thing that has come out of it, in addition to the long lines at the filling stations, has been the substantial increase in the cost of fuel. We have always had the blessing of so-called fairly cheap fuel, and because of that, and because of the large revenues that could flow from areas like the automobile and truck where such large quantities of energy could be assumed, it got to be a handy thing to add taxes to this kind of energy. Although some people would be surprised that petroleum is taxed, it is one of the most highly taxed commodities, outside of diamonds.

As in all other cases, the consumer is the fall guy in this kind of tax. With this kind of price in the two areas where energy is used the most, and with the high tax rate that rides along with it, what do you see in the future as we try to cope with higher fuel costs along with these high taxes? We see that the fuel costs in air travel have a very immediate and direct impact on the cost of air travel. But with respect to the airport and airway trust fund, we have heard the insinuation that we may have to have more taxes. The same thing is true in the highway transportation part. Are we going to be caught in a squeeze with respect to how we are going to obtain these funds that are going to be needed to try to build us a transportation system for the future?

STATE VERSUS FEDERAL TAXES

Secretary BRINEGAR. First, I would just make one comment. The tax that we see most on gasoline is about three-quarters State and one-quarter Federal. Most of the gasoline tax is a State tax. It runs 8, 9, 10 cents. And the Federal tax is 4 cents. The Federal tax role is not as large in the gasoline as the State role by any measure. I do not personally foresee the need and I am not going to get over in the field of ways and means of the Treasury. I do not myself see the need for raising the tax rates as a money-raising scheme. I think what is flowing in now is adequate for what we see ahead of us.

Mr. STEED. The point I am trying to make is that these trust funds are such nice places for people that are interested in other transportation facets to come for funds. Because of this, you are going to have some pressure from the users who are paying into these trust funds to cut down the flow by reducing the taxes.

The people who are paying, the consumer, are going to be hit in the pocket with just the increased cost with the energy itself that they are going to become a lot more sensitive about all the costs that go into the end product.

Secretary BRINEGAR. Mr. Steed, if gasoline is 70 cents in the country, the Federal tax of 4 cents is not the big issue. We have addressed this

a little bit in our unified transportation assistance program that we talked about earlier. Here, in 1977, we propose to move the urban system's fund over into the general fund and out of the Highway Trust Fund. We think the urban issues which do move over into broad-based issues in my mind are properly that of the general taxpayer. We are trying to limit the future demand on the Highway Trust Fund to finish the Interstate Highway System and to the questions of rural transportation and safety which I do not think we have addressed too well yet.

AMTRAK SERVICE

Mr. STEED. There are all sorts of ways that we can improve transportation, and just as one unsolicited and gratuitous side remark, although they are not seeking my advice, I think I could give the Amtrak people a little advice. It might increase their patronage, if they would give some of their employees, ticket sellers and train crews, a few lessons in courtesy. From the complaints I get it would help their appeal for more business a lot if they would give some of their employees some lessons in courtesy.

Secretary BRINEGAR. They have a director's meeting this afternoon and we will make sure that gets to them. The start-up of Amtrak was painful because they were largely starting with railroad employees of companies that were getting out of the business. Amtrak is hiring people and they are starting to think public service as the airlines have done. Certainly their internal programs look like they are hard at it. As one who once ran a big organization, when you get 8,000–10,000 people out there, at any given moment they will be doing things you don't like. I think we are moving ahead.

Mr. STEED. I think the airlines have spoiled the public with this "Fly Me" bit.

Mr. MCFALL. We have some questions that we will provide for the record, Mr. Secretary, that go into some of the details of your statement.

We thank you for your testimony, Mr. Secretary.

[The questions and answers follow:]

Question. Your statement (p. 42) makes, I believe, a valid point about the need to separate physical expansion of our transportation system from the need for better management and utilization of the existing structure. And you later indicate (p. 44) that lack of capacity will not be characteristic of the system as a whole during the next decade. In view of this, of what value are modally oriented capital investment needs studies?

Answer. Even though better management and utilization of our existing transportation systems are of prime importance during the next decade, capital investments will be made in our transportation systems during this period to fill gaps and to replace obsolete or worn out facilities. For this reason, the Department will continue to examine periodically the status of transportation capital plans to monitor the performance of the system—especially in identifying potential "bottlenecks." The emphasis in future studies by the Department will be on multimodal assessments of the Nation's transportation system. The 1974 National Transportation Report now under development will include an assessment of overall transportation performance.

Question. Do you feel that you have sufficient origin/destination data to develop meaningful transportation policy?

Answer. For purposes of developing major legislative proposals, such as our UTAP program or our airport development program, the lack of comprehensive origin/destination data has not been a serious problem. However, better data

would be useful in dealing with problems such as the recent petroleum shortage or the truckers strike. We have had difficulty in assembling certain types of origin/destination data. Some modes, such as the trucking industry, have been unwilling to furnish such information.

Question. What do you feel are the relative contributions that should be made to transportation policy by modal capital investment needs data and origin/destination data?

Answer. These two types of information are both useful in developing transportation policies and plans. The capital investment data we have assembled was used in the development of recommended changes in our highway programs, for example. More specifically, the data and analyses in the 1972 National Transportation Report strongly suggested that major new investments in urban areas could be best justified in economic terms. The study also demonstrated that transportation "needs" varied dramatically from region to region and between modes, thus arguing for the flexibility which was a principle incorporated into our proposals for the 1973 Federal-Aid Highway Act. Origin/destination information has also been useful in developing certain regulatory and legislative proposals. For example, the rail waybill information which we assembled was extremely useful in developing proposals for legislation to restructure the railroad system in the Midwest and Northeast.

Question. To what extent does the organizational structure of the Department tend to obstruct the formulation of national transporation policy?

Answer. We do not believe that the organizational structure of the Department presents any obstacle to the development of national transportation policies and programs.

Question. Would any major organizational changes be required to effectively implement transportation policy?

Answer. We foresee no need for any basic changes in the Department's organization.

Question. How do you intend to build energy consciousness into overall transportation policy as well as into the day-to-day decisions and operations of the Department?

Answer. Department officials concerned with transportation policy and planning have been directed to take energy considerations into account in developing new programs and in administering ongoing activities of the Department.

Question. Along with the principles you discuss, what new legislation or major program changes might be proposed in the next 3 years?

Answer. We have, of course, two major proposals now before the Congress—the unified transportation assistance program and the Transportation Improvement Act. In addition, in the next 3 years or so, we will be advancing new proposals for the highway program, particularly in rural areas and for improving public transportation in rural areas. We may also be proposing some changes in the way Federal assistance for airport development is provided. We may also be advancing measures designed to reduce the energy consumption of our transportation system, particularly the private automobile. We also expect to propose revisions to the regulations affecting Interstate funding.

Question. On page 5 you state that transportation decisions involve a number of different groups, both public and private, and that the independent actions of these multiple decisionmakers are incapable of being completely brought under the umbrella of a single "grand design." What do you mean by "grand design?" You do not mean to imply that, because policy may be difficult to implement, we should not have one?

Answer. By "grand design" I meant to convey the idea of a comprehensive "recipe book" to which someone could refer to in finding solutions or specific plans for any and all of the Nation's transportation shortcomings. I do not believe anyone is wise enough or prescient enough to produce such a book. That is not to say that we cannot evolve policies which will guide the development of our transportation systems. In developing these polices, we have to recognize the fact that innumerable private and public decisionmakers at all levels take independent actions uncontrolled by the Federal Government which shape our transportation system. Clearly in our federal system the States and localities play preeminent roles in dealing with transportation problems in their jurisdictions. Our role is to provide general guidelines and programs to make the total system (but not each part) work properly.

Question. On page 20 you indicate that you believe future investment decisions with respect to upgrading highways, bridges, and elimination of road hazards can best be made at the State level. In your Northeast rail report and your proposed rail legislation, as I understand it, you seem to favor a shift in certain freight traffic from the lesser used rails to the highway mode. If you are going to propose that we transport more freight by truck, and I am not saying that I agree or disagree with this concept, then shouldn't you be concerned about the quantity and quality of the highways and bridges over which this traffic will flow?

Answer. We do anticipate that if our proposals for restructuring the Northeast rail system are accepted some uneconomic branch line services would be suspended to be replaced by truck service. We do not anticipate at this time, however, that any such shifts from rail to highway freight will require any great amount of extra highway capacity. We believe our present highway and bridge programs are largely adequate to deal with any increase in highway freight which our rail proposal might generate.

Question. On page 21 you point out another of the problems resulting from a lack of policy. How are you or how do you propose to balance the competing demands of safety, environment, economy and energy? What are reasonable attainable balanced goals for each of these demands?

Answer. It is only recently that energy and environmental problems have come to impinge so strongly on the transportation system, and particularly upon the private automobile. The Department currently has under study measures to improve the fuel efficiency of motor vehicles—particularly the private automobile. We intend to consider ways of balancing energy efficiency with safety, environmental compatibility, and economy and we will undertake to discuss with other concerned agencies the question of identifying a balanced set of goals.

Question. With respect to urban transportation (p. 24) you state that each urban area is different and no standardized solution is possible. Clearly, there are some differences among urban areas. I do not believe that this means that the Federal Government should abdicate its responsibility in urban transportation. Don't you feel that if billions of dollars of Federal funds are going to be spent for urban transportation, that there should be some specific minimum service standards to direct this Federal investment and to measure the progress or lack of progress being made?

Answer. Clearly, we want to see that the investment of the Federal Government in urban transportation results in improved service, less congestion, improved safety, and so on. These are not, however, objectives which are easily or accurately measured. The same would be true for any minimum service standard which might be developed, attractive as that concept might be.

An acceptable level of service is in large measure a function of the priority which State and local governments place on transportation in relation to other public services. It also is a function of the market demand for transportation service. What is "acceptable" will vary depending on a multitude of considerations. Any uniform minimum service standard would result in a level of service too high for some situations and too low for others.

Question. On page 25 under item 3, isn't peak hour capacity also a problem in our largest cities?

Answer. Transportation systems in our largest cities operate at near capacity throughout the day. This is not the case in smaller cities where the problem is largely one of peak hour capacity. In these smaller cities, as the statement indicated, transit systems are under utilized during a major portion of the day. That is the point we were trying to make in the statement referred to in the question.

Question. On page 34 you refer to the divided responsibilities with respect to transportation to, from and through our major ports. Do you feel that any or all of these responsibilities should be combined? If so, where?

Answer. Certainly it is in the interests of efficient transportation that decisions regarding investment in and operation of deep-water ports be made in a manner that takes all aspects of port operations into account and also takes account of the integration of ports with other modes of transportation. How best to bring this about is not quite so clear.

Question. On page 46 you mention another area which has suffered because of a lack of policy, that is, Amtrak. Recent information seems to indicate that Amtrak's losses are increasing as a result of its increased ridership. What policy-type suggestions can you offer which may help control the Federal subsidy for Amtrak?

Answer. The question of the future Federal subsidy to Amtrak presents very basic issues about the concept of Amtrak as a private-for-profit corporation and its relationship to the executive branch. These issues were not anticipated when the original Amtrak legislation was passed because at that time their belief was that Amtrak would eventually reach the financial breakeven point. Clearly, even with the recent substantial increases in ridership, financial independence for Amtrak is not in the offing. In recognition of this, the Department is about to make a new study to review the future financial needs of Amtrak for both operating subsidies and capital assistance, to evaluate various alternative ways of providing that financial assistance, to examine the concept of a private-for-profit corporation, and the relationship of the corporation to the Government. As a result of this study, we anticipate submitting to the Congress, early next year, legislative recommendations for providing a sound basis for meeting Amtrak's future funding needs.

On the point raised in your question regarding Amtrak's losses in relation to its ridership, it is important to note that ridership has increased dramatically from comparable periods in the 2 previous years. This is primarily a result of the recent energy shortage. With the requirement to provide more transportation, Amtrak has been forced to place even heavier reliance upon its aging fleet of rolling stock. The costs associated with using marginal equipment, aggravated by inflation, have played a major role in the increase in Amtrak's losses. From a policy standpoint, there is very little that can be done to alleviate this problem in the short term. Over the longer term, however, we expect that a number of measures can be taken that will provide some relief. First among these is the acquisition of new rolling stock by Amtrak. Added improvement also can be expected as Amtrak asumes more of the burden of operating its trains and correspondingly relies less for operational support on the railroads. Finally, with about 3 years of operational experience completed, it is important to examine the financial conditions of each of Amtrak's routes to identify the specific major sources of operating losses so that their relationship to the size of Amtrak's deficit can be critically examined.

1. Question. In the President's 1974 transportation message to the Congress he recommended two programs—one concerned with highways and transit, the other concerning a railroad loan program.

The highway portion of this proposal leaves the rural highway program essentially to the States after 1978, yet the proposed railroad legislation calls for rail abandonment in these rural areas and substitutes trucks for rail. These areas normally have poor secondary roads and low capacity bridges, and the States do not have the money to upgrade the highways and bridges which would be required under this policy of railroad abandonment. It would appear that these two proposals would be contradictory without some provision for improving the highway facilities.

Is this not an example of a transportation policy which is self-contradicting?

Answer. The question suggests that rural highway construction will be left entirely to the States after 1978. This is an issue that we have not yet taken a position on. It is true that our UTAP proposal did not include rural transportation authorizations beyond 1977 but this was not meant to imply any intention of curtailing financial assistance for rural highway construction after that time. The Department now is in the process of developing proposals for rural transportation for the 1978–80 time period. One of the factors we need to know more about is the extent of future rail abandonment and their likely impact on rural highways and bridges. These proposals will be submitted to the Congress in time for consideration before the present rural highway authorizations are depleted.

2. Question. Is not the obligation ceilings imposed annually on the highway program a transportation policy imposed unilaterally on the part of the administration without the consent, in fact contrary to the expressed intent, of the Congress?

Is not this also a violation of section 4(b)(2) of the Department of Transportation Act of 1966? That section states that the act in no way authorizes without appropriate action of the Congress the adoption of any transportation policy.

In addition, hasn't this "impoundment" process also placed the highway program in the context of a "transportation revenue sharing" program which has already been rejected by the Congress?

Answer. The establishment of an obligation ceiling on the highway program does not violate the expressed intent of the Congress. The amount of liquidating cash appropriated each year is an action taken by the Congress and relates directly to the obligation amounts shown in the schedules in the budget. Additionally, the funds provided by the Congress are used only for the purposes for which authorized and since these funds are of the multiyear type, amounts not used in a particular year are used in succeeding years.

As you know, the President periodically makes a full report to the Congress, pursuant to title IV of Public Law 92–599 on the status of any funds which are reserved from obligation, whatever the reason. We do not view the scheduling of the rate of obligations as establishing a "transportation revenue sharing" program. Controlling the rate of expenditure in no way changes the purposes for which funds can be expended nor the requirements that States must satisfy in utilizing these funds.

3. Question. The absence of adherence to a congressionally mandated transportation policy is most obvious in the proposed 1975 budget.

For example a basic element of the 1973 Highway Act was the underlying principle that funding on the Federal aid systems, except for interstate, would be equally divided between rural and urban programs. The proposed 1975 budget does not do this.

This again appears to be a direct violation by the Department of section 4(b)(2) of the Transportation Act.

Answer. The figures shown in the Federal budget for 1975 obligations are estimates. The fact that the Congress authorized funds on an equal basis for rural and urban programs nationally will ultimately result in equal spending since we are not in any way affecting the manner in which authorized funds can be used. The obligation estimates shown in the budget have been used internally to help assure that funds are used by the States to meet priority highway needs. While the States are not required to obligate all highway funds in accordance with those estimates, we believe the funding pattern which they reflect represents the most effective way highway funds could be used in the upcoming year. Further, the studies and analyses we have conducted over the last few years—many at the request of the Congress—indicate that the most beneficial expenditure of funds in the highway program would be consistent with the way we have presented obligation estimates in our budget. If we use towns of 5,000 as the break point between urban and rural areas, then estimates of highway needs, the incidence of highway revenues, and highway travel all argue for a relatively higher rate of highway investment in urban areas.

At this stage, we have not determined to what extent internal category amounts will be applied to the use of highway funds during fiscal year 1975. However, in any case, it is certain that any category amounts applied would not affect more than 30 percent of the total obligations, and thus, we still could not estimate with any degree of certainty what actual spending will look like for fiscal year 1975.

AFTERNOON SESSION

TUESDAY, MARCH 5, 1974.

NATIONAL TRANSPORTATION POLICY

WITNESS

SECOR BROWNE, FORMERLY ASSISTANT SECRETARY OF TRANSPORTATION AND FORMERLY CHAIRMAN OF THE CIVIL AERONAUTICS BOARD

Mr. MCFALL. The committee will come to order.

We will start with you, Mr. Browne.

Mr. BROWNE. Thank you, Mr. Chairman.

Mr. MCFALL. It is a pleasure to have you before us to testify this afternoon, Mr. Browne. We will be glad to have your statement at this point, Mr. Chairman.

STATEMENT OF MR. BROWNE

Mr. BROWNE. Mr. Chairman, it is a privilege to appear again before this committee and to offer my views on the transportation problems which affect the lives and well-being of us all.

It would seem that the development of a truly integrated, coordinated National Transportation Policy and the creation of a National Transportation System to implement that policy may be as painful as they are essential. We have now as many policies as we have modes: Inland waterways, highways, railroads, maritime, air transport and the labor, investor and public interest components of each. The separate statutes which regulate and promote each mode essentially do so in a vacuum which excludes or ignores the others with consequent and inevitable duplication, inefficiency and waste of national resources, be they money, materials, manpower, or energy. For the Congress and administration to lay out on the table these policies, presently encased in conflicting legislative and regulatory cement, for the tough decisions necessary to formulate a single integrated and coordinated National Transportation Policy will, in my view, call for massive expenditures of effort, time, patience and political courage.

Looking on from the outside in this instance it appears that on national transportation (and other) policy the administration and the Congress are head-to-head in conflict with respect to "New Federalism" versus "Central Control."

As spokesman for the Congress you, Mr. Chairman, in calling for an integrated, coordinated National Transportation Policy and transportation system have denounced possible reorganization of the Department of Transportation and fragmentation of its responsibilities among the proposed super-agencies. You are opposed to transportation "revenue sharing" at the local level as wasteful and, if combined with deregulation, leading to transportation chaos.

As an administration spokesman, Secretary Brinegar admits that "resource allocation is out of balance" and that the "regulatory framework is out-of-date," but the President's transportation proposals while bringing some vital relief to metropolitan and rural transportation and to our hard-pressed railroads do not appear to address the fundamental and painful problems of a single National Transportation Policy and a total transportation system.

Perhaps basic to the difficulty of formulating a national transportation—or energy—or economic—policy, and of determining the extent and the goals of allocation of increasingly limited national resources, is the simple problem of data and it is perhaps this area, Mr. Chairman, which your committee should address first.

In recent weeks and months inadequate and erroneous data with respect to supply, availability and type of fuel has had chaotic impact on the performance of our transportation system, and the apparent absence of any comprehensive economic model by which the effects of alternative fuel allocation schemes can be evaluated has brought near economic chaos not only to our transportation industry but to the entire structure of our economy.

Let me give you one example of the type of "apples and oranges" data on which a number of important policy decisions appear to have been made with respect to transportation and energy.

The following Department of Transportation table purports to set forth the comparative energy effectiveness of alternative transportation modes.

1970 DOT data as used—passenger miles per gallon

Mode:	
Auto	30
Rail	100
Bus	110
School	170
Urban	59
Inter-city	128
Air	16

Source: Transportation Energy Panel, DOT–TSC–OST–73–14.

However, 1970 data was derived from total passenger-miles divided by total fuel and railroad passenger data was primarily commuter. Moreover, proper intercity comparison must include: Intercity configurations for all modes; comparable load factors; Adjustment for actual trip distances; surface equals 1.2 (highway)—1.3 (rail) times great circle distance; comparable operational patterns; and system infrastructure.

If we take all this into consideration with respect to a long distance journey, say the 1,100 miles New York to Miami, we get very different data.

LONG DISTANCE TRIPS, 60 PERCENT LOAD FACTOR

Mode	Passenger great circle statute miles per gallon	Source
Auto: 1973 full-sized	26	Consumer Reports.
Train:		
All pullman	23	Amtrak.
4 pullman, 7 coach, 2 baggage, and 2 diner	35	Do.
2 baggage, 2 diner, and 9 coach	43	Do.
4 pullman, all coach	58	Do.
Bus: Standard equipment	128	DOT.
Air:		
727–200	28	Boeing.
747–100—1,100 miles, New York to Miami	36	Do.

This suggests that for high density short haul: rail and bus systems should be upgraded and matched to air service but balanced by infrastructure costs. For example: What are the system costs of terminal and right-of-way expansions? What are costs of intermodal transfer requirements? What are costs of industrial plant and office relocations? What will be the cost of such facilities as command and control? Equipment maintenance facilities? Ancillary facilities such as restaurants and hotels/motels?

Clearly long-haul passenger transportation will remain the domain of air transport both because of energy conservation and productivity.

Please note that neither DOT's figures nor mine relate to time spent on the particular journey.

How well, Mr. Chairman, could you serve your constituency were you to travel exclusively by the most energy-effective mode apparently available—the long distance bus?

It is my view that the task that this committee has undertaken—to see to the establishment of a national transportation policy—will

be successful only to the extent that the data base is adequate and accurate, that the toughest of decisions are reached, and that the highest level of competence is found in those who will implement those decisions. A Senator remarked sadly to me not too long ago: "We can legislate programs into existence but not the people able to run them."

Thank you Mr. Chairman. I will be glad to try to answer any questions which you and your colleagues may have.

IMPACT OF DOT REGULATORY LEGISLATION ON CAB

Mr. McFall. Thank you, Mr. Browne.

As a former Chairman of the CAB, what effect do you feel the DOT regulatory legislation will have on the CAB?

Mr. Browne. I think the fundamental problem between the DOT and the Civil Aeronautics Board lies in the somewhat different mandates of the two bodies. I think essentially the division occurs as a result of the CAB exercising really your powers in interstate and foreign commerce versus the administration's responsibility for operating the system. Therefore, all attempts to move regulatory authority from the CAB to the Department of Transportation really will have to have the understanding and consent of the Congress.

Mr. McFall. Under the Constitution we could not very well do that.

We are charged under the Constitution with the duty of regulating interstate commerce. We would have constitutional problems in transferring these to the DOT.

Mr. Browne. You most certainly would.

Mr. McFall. What kind of data do you feel we need to develop?

Mr. Browne. I think you have to look again at a total transportation system, at the problems of allocating the resources between rails, between highways, and between air transportation. I think that has to be done by mode, by journey, by equipment, and perhaps by regional requirements.

COMMENTS ON SECRETARY'S STATEMENT

Mr. McFall. You heard Mr. Brinegar's statement this morning, I assume.

Do you have any comments on it? Where do we go from here, in your opinion?

Mr. Browne. I did not hear Mr. Brinegar's statement. I am sorry I could not be here. But essentially it seems to me that you and the Congress wish to keep the Department of Transportation as a centralized control point for transportation and Mr. Brinegar, I believe, must echo the administration's position that the transportation function should be split among superagencies. In other words, transportation should be reorganized.

Mr. McFall. He did not indicate that this morning. At least I did not hear it if he did.

I think we have a kind of a breakthrough in the fact that Mr. Brinegar's statement did not just echo the old deregulation, reorganization, revenue-sharing concepts. If you have an opportunity to do so, I would appreciate your comments on it.

Mr. BROWNE. If there has been that change in policy, I would certainly welcome it.

Mr. MCFALL. I do not know if there has been any change in policy, but at least that policy was not stated this morning only in terms of those three old concepts.

The concepts are probably still there, but at least they were somewhat muted this morning.

We appreciate your testimony, Mr. Browne.

From time to time we would like to have you give us your opinion as we proceed in this matter. This is only the first step. With the help of a number of people and the other witnesses we have on the hearing schedule, we can, hopefully, begin some important steps toward a meaningful transportation policy. Of course, if we cannot get the Department to do it, and I hope they will because they have a great many resources at their command, then we will have to turn to some committees of the Congress to see what they are willing to do with reference to the problem.

Thank you very much, Mr. Browne.

Mr. BROWNE. Thank you, Mr. Chairman.

Mr. MCFALL. It has been nice seeing you again.

Mr. BROWNE. It is nice to see you.

TUESDAY, MARCH 5, 1974.

WITNESSES

RAY W. BURGESS, PRESIDENT OF THE AMERICAN ROAD BUILDERS ASSOCIATION

DANIEL J. HANSEN, EXECUTIVE VICE PRESIDENT OF THE AMERICAN ROAD BUILDERS ASSOCIATION

Mr. MCFALL. Mr. Ray W. Burgess, please.

Mr. Burgess is president of the American Road Builders Association, and he is accompanied by Mr. Daniel J. Hansen, executive vice president of the American Road Builders Association.

STATEMENT OF PRESIDENT OF THE AMERICAN ROAD BUILDERS ASSOCIATION

Mr. BURGESS. Thank you, Mr. Chairman.

As you stated, my testimony is made on behalf of the American Road Builders Association.

Mr. Chairman and members of the committee:

My name is Ray W. Burgess. I am director of public works for the city of Baton Rouge, La. I am here today in my category as president of the American Builders' Association.

Organized in 1902, ARBA is a national association of organizations and individuals with a common interest in the planning, design, and construction of transportation facilities. As the name of our association suggests, ARBA was originally organized to express the interests of roadbuilders. However, as early as the 1940's, ARBA promoted

numerous activities in support of airport development. In more recent years, we have further expanded our association programs to reflect an active interest in the development of urban public transportation facilities.

The membership of ARBA includes public officials at the Federal, State, county and local levels of government; transportation construction engineers; contractors; manufacturers of construction equipment; material producers and suppliers; transportation planners; design engineers; educators and student members.

We are deeply interested and concerned in a national transportation policy, and all of its ramifications. Our special interest in the highway, airport and urban public transportation modes includes an overall interest in the more general, all-embracing transportation policies of the Federal Government. Indeed, it is not practicable in the present environment to consider policies relating to one mode without giving attention to the impact on all modes of transportation. Our statement today, however, is intended to focus on specific aspects of transportation policy which are of immediate concern, in relation to highway, airport and public transit development.

IN SEARCH OF A POLICY

Section 3(a) of the Airport and Airway Development Act of 1970 called upon the Secretary of Transportation to "formulate and recommend to the Congress for approval a national transportation policy." (Public Law 91–258.)

This provision reflected a general sense of frustration by Members of Congress and others with what has been widely regarded as a fragmented and oftentimes inconsistent national effort in the field of transportation. This sense of frustration is not new. It had been felt for many years. It was an important impetus in the enactment of the Department of Transportation Act of 1966. This act was intended to bring together, under one roof, the various transportation programs of the Federal Government.

In response to the legislative mandate of 1970, the Secretary of Transportation transmitted to Congress on September 8, 1971, "A Statement on National Transportation Policy."

In his letter of transmittal, then Secretary of Transportation John A. Volpe agreed that a real need existed for a coherent and consistent national transportation policy. I might add, this is the statement Congressman Conte referred to this morning.

He said, "Elements of prevailing governmental policy are not appropriate to transportation as it presently exists. On the whole, the transportation policy which was evolved, both consciously and unconciously, represents an uneven fabric ill suited to today's needs, and is, itself, a major contributor to the problems facing transportation today."

This full statement contains considerable reference material and appropriate discussion. However, the statement fell far short of expectation with respect to the formulation of a truly national transportation policy. In essence, the Secretary simply declared the administration's overall domestic policy, as this policy affected the activities of the Department of Transportation.

First, having pointed out the shortcomings of existing transportation policy, the Secretary endorsed the administration's proposal to reorganize the executive branch. At that time this proposal included the abolition of the Department of Transportation itself.

Second, the Secretary extolled the merits of the administration's proposed revenue-sharing program.

Particular empasis was given to that part of the program known as transportation revenue sharing. The primary benefit claimed for revenue sharing, of course, is that it transfers responsibility for decisionmaking from the Federal Government to State and local governments.

THE FUNCTIONS OF TRANSPORTATION

The late Thomas H. MacDonald, who for many years headed the Bureau of Public Roads, once pointed out that transportation had a basic dual nature consisting of (a) service and (b) power.

Mr. MacDonald observed that much attention was given to the service component of transportation. This included the movement of people and goods between origin and destination. However, he indicated that little attention had been given to the power component. By this he meant changes in the social and economic patterns of our society brought about by transportation facilities.

In recent years, the pendulum has swung in the opposite direction. We are deeply concerned—and I believe properly so—with the impact of transportation facilities on the natural and social environment. In recent years, this concern has generally been expressed in a negative way—airport X, highway Y or pipeline Z is opposed because of a belief that it will be harmful to the natural environment or the community. This concern has had the effect of imposing long delays on all transportation development.

The Department of Transportation has estimated that the transportation service capacity of this country must be doubled by the year 1990. In order to meet these transportation service requirements, a strong, dynamic program with Federal leadership is required. It goes without saying that such a program should be guided by a coherent national policy.

THE LOCAL FLEXIBILITY ISSUE

The dogma frequently expressed in support of local determination of transportation policy is that local officials are better able to evaluate their transportation needs than officials in Washington, D.C. As a local official myself, I can wholeheartedly endorse this position. Many times, projects developed at the local level are subjected to incredibly lengthy review by officials at higher levels of government. Oftentimes such projects are rejected simply because they fail to meet some arbitrary and impractical requirements of the Federal Government.

While a national review of local planning is often burdensome, it seems inescapable that we must, in order to meet national goals, preserve some degree of responsibility and direction at the Federal level. The interstate highway program is an excellent example of a

program developed to meet a well-defined goal. In that case, the goal was developed by a cooperative effort of State and Federal Governments. The program itself is being executed through a continuing interaction between the Federal and State governments.

FINANCING TRANSPORTATION PROGRAMS

In the cases of the Federal-aid highway program and the airports and airways development program, the Federal share is paid for from trust funds. These trust funds are supported by special user taxes on the direct beneficiaries of the program. By supporting these programs from taxes on the users, we have been able to preserve a relationship between charges and benefits. This principle provides that those who benefit the most pay the most.

The trust fund mechanism is useful—at least in theory—in maintaining the program at a smooth level. In recent years, however, the practice of executive impoundment has resulted in delaying the highway program by the financing of program levels well below the capacity of the highway trust fund. The same is also true for the airport/airway development fund. Both of these levels are also well below the amounts of funds authorized by Congress.

In this instance, there is obviously disagreement between the Congress and the executive branch. To state the case in more general terms, there is a great difference of opinion in this very important area of transportation policy.

THE ENERGY CRISIS

The present energy situation has brought with it a realization that strong measures must be taken in order to conserve energy for at least the next several years. If we are to shift from an era of cheap and abundant energy to an era of scarce and expensive energy, the implications for every form of economic activity are great. There has already been much discussion of placing greater emphasis on the development of modes of transportation which are relatively conservative in their use of energy.

To some extent, this transfer will be facilitated by economic forces. Higher prices for gasoline will encourage the use of smaller automobiles and depress the demand for automobiles of heavy gross weight and high horsepower. Higher prices for jet fuel will depress the demand for air transportation and result in the elimination of unprofitable air service.

With respect to highway transportation, two of the implications immediately apparent are: (a) the effect of lower speed limits, and (b) the high fuel cost for highway traffic in stop-and-go situations. Stop-and-go traffic can be minimized by the development of highways with fewer intersections at grade—thus eliminating some traffic signals. Improvement in existing control devices can expedite traffic flow. We also strongly support carpooling and, where economically feasible, the increased and improved use of urban public transportation.

These actions have widespreading ramifications. They should receive careful consideration as to their implication and effect on overall national transportation capacity, quality, and safety.

THE FISCAL YEAR 1975 U.S. BUDGET

As the fiscal year 1975 budget relates to transportation, it has only little similarity to the 1975 authorizations passed by Congress last year. The newly proposed unified transportation assistance program only confuses this issue further. As recommended by the administration, total obligations for highways would be $4.8 billion in 1975. This is approximately $1.2 billion less than authorized by Congress, an amount which can adequately be financed out of the Highway Trust Fund. At the present rate of obligation, completion of the Interstate System will be stretched out well into the mid-1980's. This obviously was not the intent of Congress when the program was initiated in 1956. Likewise, primary, secondary, rural, and urban projects are currently way underfunded in relationship to congressional authorizations and the ability of the trust fund to pay as we go.

THE ROLE OF HIGHWAYS

We believe the importance of our nationwide highway system cannot be overstated. Recent events clearly indicate how much each American depends on our streets and highway network every day for a variety of essential services and needs. Roads form the backbone of our transportation system. Any national transportation policy should recognize the predominant role of this mode of transportation. Such recognition, it seems to us, means we must continue to devote a substantial portion of our Federal resources to our very vital highway transportation system.

Mr. Chairman, we are grateful for this opportunity to express the views of the American Road Builders' Association.

SUBSIDIZING RAIL TRANSIT OR URBAN MASS TRANSIT

Mr. McFall. Mr. Burgess, were you here this morning and did you hear the Secretary's statement?

Mr. Burgess. Yes, I did.

Mr. McFall. Do you have any comments on the Secretary's statement?

Do you think his statement contains explicit material as far as transportation goes?

Mr. Burgess. His statement was so lengthy, it is difficult to comment briefly. I can comment in this regard, and I would agree with the Secretary when he said, I think in answer to a question by Congressman Conte about subsidizing rail transit or urban mass transit, we agree that this should not be done, at least out of the Highway Trust Fund.

We are of the opinion that this is more of a local problem than it is national.

We think that the local government should tackle this problem.

We believe very strongly—and of course this is obviously in opposition to what the Secretary said—we feel very strongly that there should be a full obligation of the $6 billion that has been taken in by the trust fund each year.

Congress has seen fit to devise a program for the utilization of the $6 billion, yet his statement contains figures that indicate in 1975 only $4.8 billion of that $6 billion will be obligated. That is even less than it was in 1974 and 1973.

We disagree very much on that issue. It was the intent of Congress even as far back as 1956 that the Interstate program should be completed with all haste. We have figures to indicate that in the last year, only about 1,200 miles of the Interstate were finished. If that rate is maintained, we are talking about sometime in the 1980's before the Interstate will be finished if the obligation is reduced any further.

I might comment on some other specifics. Those are some of the things I remember offhand.

COMMENTS BY MR. BURGESS REGARDING SECRETARY BRINEGAR'S TESTIMONY

Mr. McFALL. I would like to have you do it. I know you heard it this morning, but we would like to have you analyze it and send us your comments.

Mr. BURGESS. We would very much like to do that.

Mr. McFALL. Thank you very much.

Mr. BURGESS. You are quite welcome.

[Additional material submitted follows:]

Subsequently, Mr. Burgess submitted the following comments:

First, let me congratulate Secretary Brinegar for an excellent presentation summarizing many of the programs of the Department of Transportation. We at ARBA are equally concerned with the difficult problem of formulating a national transportation policy. The Secretary's presentation contains some extremely valuable factual material which will be helpful to all of us in the future.

The material of greatest interest, of course, is the 10 policy principles which are to be used as guidelines in establishing and reviewing national transportation policy. We are in general agreement with the principles set forth by Mr. Brinegar, and will therefore comment specifically on only a few of them.

In principle No. 3, Mr. Brinegar states the view that Federal expenditures for transportation should be recovered from users and other beneficiaries in a manner appropriate to the degree of benefits received, unless widely accepted national policy directs otherwise. Congress adopted this principle in establishing the highway trust fund and the airports and airways trust fund. However, the executive branch has regularly impounded moneys in both of these trust funds. The result has been that a substantial time lapse occurs between the collection of user taxes and the benefits derived from these transportation programs.

We strongly support the principle that Federal assistance for transportation should be based on equitable taxes on the users and other beneficiaries. In this process, it is vitally important that the programs authorized by Congress be carried out as expeditiously as possible and without the artificial delays caused by Executive impoundment. We favor the extension of the highway trust fund and the airports and airways trust fund, and the establishment of an urban public transportation trust fund.

Mr. Brinegar stated in principle No. 5 that a better process is needed to resolve disputes arising from the energy, safety, environmental and community impacts of transportation development. We need to continue to work for a more effective method of insuring that all relevant issues are given proper consideration during the planning process. Conflicting points of view should be fully aired and a consensus reached at an early stage in project development. Once this consensus is reached, there should be minimal reliance on appeals to the courts. At present, a disgruntled minority can sometimes delay and sometimes completely stop urgently needed projects for many years by instituting dilatory law suits.

In principle No. 6, Mr. Brinegar addressed himself to the very complex issue of urban transportation policy. We support the view that urban transportation

planning should be essentially a non-Federal function. Federal financial assistance may, however, be needed in the development of urban transportation facilities. In our view, Federal assistance should be limited to capital investment, and should not be made available to support maintenance and operating functions.

Local self-determination should be encouraged and there needs to be a sense of direction accompanying the allocation of Federal funds. This will insure that the Federal investment is made in accord with well-defined national goals. We regard such programs as transportation revenue-sharing as potentially wasteful, since they are not addressed to identifiable national goals. If no specific objectives are set, how can attainment be measured?

Mr. Brinegar stated in principle No. 7, that "rural public transportation policy is today in an uncertain state." He might also have added that rural highway transportation policy is also in an uncertain state. The rural secondary highway program apparently will be trimmed down to cover rural main collector roads only. This will leave many miles of secondary highway without any vestige of Federal assistance. Adequate highway service is absolutely essential to rural areas, and the local tax base in many such areas is inadequate to provide such service without Federal assistance.

Mr. Brinegar's principle No. 8 deals with the problems of intermodal coordination and specifically notes the need for the joint use of terminals by more than one transportation mode. ARBA strongly supports this principle. A corollary is that airport development plans should be closely integrated with the development of ground transportation systems adequate for the movement of passengers, baggage and freight between the airport and final destination.

In principle No. 10 Mr. Brinegar pointed out a need for improving the overall knowledge of transportation systems, the technical abilities of planners, and an additional analytical effort at the Federal level. We support this view and commend Secretary Brinegar for recent improvements at DOT in data collection and analysis. Further actions are needed, however, to insure that DOT data and studies are made readily available to other Government agencies and related private organizations. There is a tendency for governmental agencies to release only those data and studies which support the policies espoused by the agencies.

In closing, Mr. Chairman, let me again express ARBA's appreciation for the opportunity to participate in this testimony.

TUESDAY, MARCH 5, 1974.

WITNESS

JOHN BECK, GROUP VICE PRESIDENT, TRANSPORTATION SYSTEMS, ROHR CORP.

Mr. MCFALL. Our next witness is Mr. John Beck, vice president of the Rohr Corp.

We are glad to have you before the committee at this time.

Mr. BECK. Mr. Chairman, it is a real privilege to appear before this committee to make some specific recommendations on meaningful improvements on our Nation's mass transit systems. My remarks are intended to be nonpartisan, noncommercial, merely a transit equipment manufacturer's viewpoint on how to improve our mass transit, on how much it would cost and how it could be done. I would like to submit our complete testimony for the record and in the interest of time summarize it by reference to a few slides, if I may.

Mr. MCFALL. Go right ahead, Mr. Beck.

[The prepared statement follows:]

TESTIMONY OF DR. N. JOHN BECK

GROUP VICE PRESIDENT - TRANSPORTATION SYSTEMS

ROHR INDUSTRIES, INC.
Chula Vista, California

Before The

SUBCOMMITTEE ON TRANSPORTATION APPROPRIATIONS
OF THE COMMITTEE ON APPROPRIATIONS

UNITED STATES HOUSE OF REPRESENTATIVES
AT A SPECIAL HEARING ON

A NATIONAL TRANSPORTATION POLICY

5 March 1974

31-433 (Pt. 1) O - 74 - 5

Mr. Chairman and distinguished members -- I am Dr. N. John Beck, Group Vice President, Transportation Systems for Rohr Industries, Inc. of Chula Vista, California. I have with me today Mr. Norman Snow, Manager of our Washington Office, who I think is known to some of you, and Mr. Thomas A. Lancaster, our Manager of Marketing Analysis. I want to thank you for this opportunity to appear before you and present some of our findings relative to a national commitment for mass transportation.

Before I start, I would like to explain a little about Rohr Industries and our keen interest in urban mass transit. Historically an aerospace subcontractor, Rohr has diversified so that we are now designers and manufacturers of transportation systems and equipment to satisfy all the basic modes--air, land and sea. In the area of ground transportation we build the BART rail cars for the Bay Area Rapid Transit System as well as the vehicles for your own Washington Metropolitan Area Transit System. In the bus area, last year we manufactured nearly half of the city transit buses used in mass transit operations throughout the United States. Further, we have embarked on a major commitment to advanced transportation systems for Personal Rapid Transit embracing both conventional and advanced magnetic levitation technology and for high-speed transit for specialized urban and inter-city operations using the tracked air-cushion vehicle.

This country is facing a critical need for innovation in ground transportation and new and modernized concepts must be quickly deployed if Americans are to continue to enjoy their traditional mobility and freedom of movement. We see in this situation an obligation and opportunity for the company to address itself to an urgent national problem. On the whole, we have been successful in this effort and today more than half of our corporate resources are committed to ground transportation.

We are here today as advocates for the transit manufacturing industry and for the American public. As an equipment manufacturer, we will suggest what can be done to resolve this country's mobility problems and what it is going to cost to fund a forward-looking mass transit solution. As a citizen, I can tell you that the country is looking to you for the creative leadership essential to an effective national commitment to mass transportation. This solution will come only if we set attainable objectives and commit ourselves firmly to a stable funding program that will accomplish those objectives.

The long-term trend of decreasing use of public transit must be reversed.[1] It is quite ambitious to attempt to return public mass transit to the relative role it reached during World War II, when it carried over 45 percent of the annual urban trips. However, a six-fold increase in public transit by 1990 is a reasonable and attainable goal. Both the transit manufacturing industry and, I believe, the transit operators could respond to such a challenge on an efficient, well-managed basis. This would enable mass transit to serve approximately 25 percent of the annual trips. In actual numbers, this would increase transit ridership from 6 billion annually to 38 billion. With this commitment, mass transit would attract over 60 percent of the anticipated increase in urban trips between now and 1990 -- the remainder representing growth in automobile trips.

Even with this public transit improvement, the automobile will still maintain its vital role. The overall use of the automobile, despite the current energy crisis, can be expected to

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[1]Data for Urban Trips Chart Compiled from, "The Future of Public Transportation," by A. J. Sobey, Booz-Allen Research, Bethesda, Maryland, February 1, 1973.

increase as our urban population increases. We foresee not only more efficient, smaller cars but also an increase in urban auto trips of at least 30 percent.

The years since World War II have seen automobile usage grow to completely dominate the urban scene. Many factors contributed to this -- our increasing affluence, availability of raw materials and energy, a superb urban-interurban highway network. New priorities that now exist -- environment, conservation of fuel, congestion, general urban well being -- require the nation to temper the unrestricted use of the automobile. Complementing the automobile with an effective mass transit system will permit transit to be the "second car" for many families.

How much will this cost? A six-fold increase in public transit can be accomplished by the application of some $77 billion for capital improvements and new systems. This commitment would be applied nearly equally to the three basic modes of mass transit -- rail, bus and Personal Rapid Transit (PRT).

Bus and rail are well established modes of mass transit. Rail rapid transit, vitally necessary in high-density urban areas, serves our major metropolitan areas by providing high speed, high frequency, high capacity corridor-type transit service.

Buses serve all types of urban areas. In the low-density areas, the demand bus provides dial-a-ride service. For the medium-capacity areas, there is expressway-type bus service. In the very-dense areas, buses serve the rail system with feeder/distribution-type service.

PRT is a truly innovative transit system. It provides the passenger with service flexibility, convenient access and attractiveness approaching that of the automobile. PRT is characterized by small, private, well-appointed vehicles, non-stop, origin-to-destination service, and an extensive network of stations. Available on demand just like the automobile, PRT's would function as an automated "second car" that would be readily available to many users.

Today, we need a national commitment to mass transit which is comparable in scope to previous national commitments. Further, the hardware is ready, the need is at hand. Only the funding and institutional initiatives to make it happen remain. Working through the creative planning process, these transportation systems would complement and enhance urban living.

It is proposed that funding for urban mass transit equipment increase uniformly from the current $1 to $2 billion per year to approximately $6.5 to $7 billion through the '80s. This funding buildup will permit expansion of the transit bus fleets at a pace consistent with the ability of the transit authorities to expand their operations. New fixed guideway systems, rail and PRT, would commence major deployment in the '80s.

Let us consider the federal commitment to public highways through the Highway Trust Fund. Established in 1956, this fund has grown continuously and is now projected to be at the $5 billion annual expenditure level by 1976, when total expenditures will reach over $75 billion.[2] This commitment

[2]Data Compiled from, "Highway Statistics 1968," U.S. Department of Transportation Publication; 1970 National Highway Needs Report, U.S. Department of Transportation, U.S. Department of Transportation Publication; The United States Budget in Brief, Fiscal Year 1975, Office of Management and Budget.

provided our interstate highway system as well as major improvements in urban and rural road systems.

One of the most recent and intense U. S. commitments was for manned space exploration. Peak funding for NASA programs reached nearly $6 billion annually. The total accumulated funding over the last 14 years is approximately $52 billion.

Comparing NASA expenditures and the Highway Trust Fund with the proposed mass transit investment commitment, on both an annualized and cumulative basis, the proposed mass transit investment is an achieveable goal. In fact, it may be possible to support all three commitments in 1990 with less funding than was allocated to our NASA and Highway Trust Fund commitments in the middle '60s. With this commitment comparison, it is assumed that the major objective of the Highway Trust Fund, namely, the interstate highway system, has essentially been accomplished and annual expenditures can be expected to decrease.

An alternative would be the case in which the Highway Trust is maintained at approximately $5 to $6 billion per year level through the '80s and into the '90s. In this case, the composite commitment for the Highway Trust Fund, NASA and mass transit would approach approximately $14 billion in the early '90s -- still, a commitment that is readily achieveable within our budget framework and our growing gross national product.

There is an urgent need to deploy balanced transportation systems utilizing modern technology to its fullest potential. Safety, resources allocations and environment are all key factors in assessing the potential impact of mass transportation on the urban scene.

No one system, or single transportation mode, will necessarily solve all the urban transportation requirements. Optimum solutions will utilize an integrated, balanced transportation network of bus, rail and Personal Rapid Transit specifically tailored to each regional area.

Adequate, convenient service must be provided to the some 26 percent of our urban public solely dependent on mass transit -- the young, the elderly, the handicapped and those who cannot afford an automobile.

Safety will be a key factor in this national transportation commitment. The reduction of congestion, accidents and a ten-fold reduction in fatality rate using mass transit will conserve our most precious resource -- human life.[3] Improved safety also manifests itself in the reduction of stress since public transit will provide an alternative to "fighting traffic" and allow time for more enjoyable or productive activities.

Conservation of resources is essential. Public transit systems are much more efficient in energy comsumption than the automobile.[4] Attracting 38 billion trips to mass transit from the automobile in 1990 would save nearly 10 billion gallons of fuel. At today's fuel prices, this would be over $5 billion. At 1990 prices, the dollar value of the fuel savings could exceed the cost of mass transit's annual capital needs. Further, the decreasing availability of the world's irreplaceable resources dictates more efficient use of materials. Mass transit vehicles provide the most effective use of material resources used for urban transit due to their high capacity capabilities and due to a high level of productive vehicle miles.

3,4,5 Data from, "Testimony of Dr. N. John Beck Before the Subcommittee on Transportation of the Committee on Public Works," House of Representatives, March 19, 1973.

The use of integrated mass transportation can certainly enhance our urban living environment. Mass transit contributes beneficially to the environment and urban well-being through coordinated and productive use of land, reduction of pollution , congestion and noise.

To implement urgently-needed public mass transportation, we envision a comprehensive national transportation policy which defines in detail the legislative initiatives to establish the funding level to insure that resources for capital equipment and operations are made available.

Realistic and creative urban planning can implement balanced transportation systems to provide service and availability tailored to the individual urban area.

In order to attract urban dwellers to mass transit, systems must be individually tailcred and installed in each area complementing the desired urban land use plan and the living style of the area. Urban area living patterns show that nearly 90 percent of the population projected for urban areas in 1990 will live in population density areas less than 11,000 per square mile. This means that systems must be deplcyed that can effectively move people in low-density areas.

Looking at the United States for a moment, we can consider the some 230 major urban areas which will require major public transit support.[6] On an aggregate basis, if we look beyond our 15 most densely populated cities, which already have or are planning rail transit systems, we must concern ourselves

[6]Urban Area Population Data Compiled from, "Dimensions of Metropolitanism," Jerome P. Pickard, Urban Land Institute, 1967.

with some 215 other major urban areas which are going to require a commitment to public transportation.

These urban areas will include such towns as Memphis, Little Rock, Dayton, Omaha, Denver, Indianapolis; the medium-sized, medium-density cities. These cities dot the entire U. S. and thus require that mass transit system must be seriously considered in virtually every state. At the same time, we must continue to maintain effective, integrated rail transit systems in our fully-developed larger cities: New York, Chicago, Philadelphia, Boston, Cleveland, and the systems being introduced in Washington and San Francisco.

Projected urban population and urban trips show that 90 percent of the 38 billion annual trips will occur in urban densities less than 11,000 people per square mile.[7] In fact, the majority of the trips will be in population regimes between 2,000 and 6,000 people per square mile.

In analyzing the travel patterns and trip types which mass transit will service, the lower-density areas can best be served by buses and Personal Rapid Transit. Buses are projected to serve approximately two-thirds of the trips, or nearly 26 billion! PRT and rail would carry 9 billion and 3 billion, respectively. As one considers the total investment in our highway system, the bus's guideway, buses reflect an effective use of our existing investment. Small, compact buses can provide demand-type, dial-a-ride service in the lowest density areas. In the medium-density areas, local transit service as well as express service can be provided

[7]Data from, "The Future of Public Transportation," by A. J. Sobey, Booz-Allen Applied Research, February 1, 1973.

by the standard transit bus. In high densities, buses provide feeder/distribution service as part of a larger multimodal system. Personal Rapid Transit (PRT), which has a role in all density regions, has perhaps its most attractive service role in the medium-density areas. Here its network service potential can be integrated to offer direct origin-to-destination service with small, private cars. Automated cars and light, low-cost guideways offer area coverage at low system cost, both for installation and operations. Rail systems will continue to serve the dense urban corridors and will operate in a well integrated system with bus and PRT distribution networks.

This proposed commitment, with an allocation of $24 billion, $25 billion and $28 billion to PRT, rail and bus, respectively, will enable mass transit to provide the following by 1990:

PRT

- 8,000 lane-miles of guideway
- 300,000 vehicles

BUS

- 190,000 standard transit buses
- 200,000 compact buses
- 4,000 lane-miles of busways

RAIL

- 1,600 lane-miles of guideway
- 13,000 vehicles

In addition, existing system facilities would be upgraded. Communications, control, stations and maintenance areas would be modernized.

Considering the basic areas of applicability for each of the major transit modes, let us now review quickly the status of these systems. We believe, and we think we speak for the transit industry in general, that the technology is here; it is essentially fully developed. The challenge now is for the systems to be effectively and strategically deployed in the most cost-effective manner to provide the most transit availability, service and convenience in each urban area.

Let us now consider Personalized Rapid Transit (PRT).

As we look at the industry position in Personal Rapid Transit, there were four demonstration systems that were displayed at TRANSPO in June 1972. Since that time, several special-purpose systems have been deployed for airport movement and for special shuttle activities. On a regional basis, Denver and Las Vegas are planning PRT installations as the backbones of their urban transportation systems. In essence, industry is ready to respond to all opportunities to deploy Personal Rapid Transit Systems either on a specialized basis -- a feeder/distribution function or circulation function -- or on a total urban network.

Reviewing quickly the TRANSPO system, there was the Rohr/Monocab system featuring small, air-conditioned vehicles with four to six-passenger capacity and off-line stations. TTI, Transportation Technology Incorporated, featured the air-cushioned vehicle. Off-line stations were again featured with a right-angle approach to the station. Ford provided a ground-supported, wheeled vehicle with larger seating capacity, 24 passengers. The Berdix system also provided a ground-supported vehicle with seating capacity for 16 passengers and provisions for standees.

In addition to the Personal Rapid Transit vehicles displayed at TRANSPO, Rohr also introduced publicly for the first time, and for the first time by any United States company, magnetic levitation. Magnetic levitation was integrated with magnetic propulsion and guidance -- all within a single motor system.

Krauss-Maffei, a German company is now installing a magnetic levitation system under contract with the Province of Ontario. The system consists of a two-and-one-half mile oval loop surrounding the grounds of the Canadian National Exhibition on the Lake Ontario waterfront.

Several special-purpose systems are being installed or are operating now. LTV's airtrans, an innovative distribution system for passenger, materials handling and baggage handling at the new Dallas/Ft. Worth Airport provides a multipurpose application for a modified personal rapid transit. Similarly, the Tampa Airport shuttle system, built by Westinghouse, utilizes automated, special-purpose 100-passenger vehicles to move passengers from the main terminal to the aircraft boarding areas.

One of the more innovative systems is the shuttle system in the ground concourse of the Houston International Airport. Built by Rohr, this automated system interconnects the two main terminals, a parking lot and the airport hotel to provide fast, efficient access and distribution for all incoming or outgoing passengers at the Houston Airport.

Denver is planning a Personal Rapid Transit system to be the backbone of their totally-integrated urban transportation system. Shown here is an artist's concept of a suspended system that might well be applicable to the Denver installation.

Las Vegas is considering a Personal Rapid Transit system to interconnect the Airport, The Strip, the Downtown activity centers and the AMTRAK station. This system provides on-demand vehicle availability. Stations are integrated directly into the hotels in the area.

A Personal Rapid Transit system installed on a network basis would provide the ultimate in service potential. With a well planned matrix of simple, low-cost stations, the urban dweller could be within walking distance of his neighborhood station. At the destination end, stations may be integrated into major buildings. The area wide station coverage and the non-stop ride characteristics of the vehicle provide the potential for the shortest door-to-door trip time.

Now let us review quickly the transit buses. Recent bus production has been 2,500 to 3,000 units per year. However, if we are to meet our objectives in public transit, it will take a production commitment of nearly 15,000 standard bus units a year to meet transit bus requirements, and an equal production commitment for the compact bus for feeder/distribution and other special applications. The bus industry, on the whole, is ready to respond and can produce at that general level. All that remains to be provided are consistent funding and orders.

The Transbus is one of the more advanced concepts in the transit bus field. Rohr is one of the three companies under contract to the United States Department of Transportation. General Motors and American Motors General are also participants. Transbus features a low floor, a smooth ride, a low emission powerplant, improved suspension and low noise characteristics -- all required for the new transit bus

market. All three Transbus designs are in prototype development right now.

Other advanced buses are also being considered. The super bus, or double-decked bus, can provide accommodations for some 83 passengers, which enables the cost of the driver to be spread over many more passengers. Advanced styling and equipment arrangement of the standard transit buses offer new opportunities for near term introduction of new and attractive buses. In addition to the standard transit buses and the super bus, there is also a vital role for the compact bus for special-purpose applications. For example, dial-a-ride has proven to be very successful in Haddenfield, New Jersey and in Ann Arbor, Michigan.

The third major mode in the spectrum of urban mass transportation equipment is rail transit. As we look at the rail transit industry status, we see that in 1970 there were some 400 route miles of rapid transit systems throughout the United States; in Chicago, New York, Philadelphia, Boston and Cleveland, on those systems approximately 10,000 vehicles were operating. We see now in 1990 that there will be 800 new route miles necessary to move three billion passengers per year. This includes 600 miles in new cities as well as 200 miles of extension in existing cities where rail transit is already installed. In addition, we see a minimum estimate of 13,000 new vehicles being required mostly for the new systems, but in some cases to renovate and replace the older cars on the existing systems.

One of the most advanced rail transit system is BART which features comfortable, well-appointed cars, luxurious, commuter railroad service over a 75-mile system throughout the

San Francisco Bay Area. The aluminum cars are light and well styled. The direct current, chopper-controlled propulsion system enables the recovery of power during dynamic braking so that during periods of peak operation the overall system consumes 25 percent less energy than older systems.

One of the most advanced lines on the East Coast is the Lindenwold Line, which connects surburban Lindenwold, New Jersey to Philadelphia.

Also among the new system with advanced equipment is Washington's own Metro.

Advanced concept light rail systems and light rail vehicles are being developed which provide for articulation and high capacity. Boeing Vertol is developing this streetcar for application in San Francisco and Boston.

For special purpose, high-speed access between activity centers, we see applications for the tracked air-cushion vehicle. This 150-mile-per-hour system can carry up to 60 passengers non-stop in airport access operations or connecting major activity centers with new towns.

The key requirements for any urban transportation system are to provide convenient and practical service as economically as possible. Both installation and operation costs must be considered.

Turning first to installation costs, rail systems at grade will average approximately $8 million per dual-lane mile. Elevated systems, depending upon the right-of-way requirements cost approximately $15 million per dual-lane. The most expensive of all is the subway for a rapid rail system which may

run $30 million per dual-lane mile or more depending on the soil characteristics and the techniques for installation.

Personal rapid transit systems which would generally be installed in an elevated mode, will run approximately $6 million per mile depending upon right-of-way requirements and utilities relocation costs.

Costs of dedicated busways for express bus service on limited access approach vary depending upon the urban area served. On a composite basis for both at-grade and elevated structures, costs are approximately $4 million per dual-route mile.

Operating costs are probably the most difficult to assess on a generalized basis, but let us consider two basic fare levels as we look at the currently available modes of ground urban mass transportation. A regular fare level, which covers the perceived direct operating cost of an automobile (not debt retirement) would be approximately 5¢ per vehicle mile. At this fare level, both bus and rail would operate at a deficit, if the load factor of the bus averages less than 50 percent as is generally the case today. Buses are currently operating about 25 to 26 percent capacity with operating costs essentially twice the fare, creating the requirement for operating subsidy.

Rail systems, to break even, must also operate at an average occupancy of about 50 percent. Most rail systems are also operating at less than 50 percent load factor, thus creating a deficit in annual operating revenues.

Turning to the PRT, Personalized Rapid Transit does provide service nearly equivalent to the automobile. A fare structure equivalent to the total cost of operating an automobile would appear appropriate. A fare of roughly 10¢ per mile will enable

the PRT to operate with no subsidy requirements at all. The total cost of operation would be recovered through the fare box.

In summary, we as a country face an obvious challenge to make a substantial and definitive move toward resolution of a major urban mobility problem. We cannot provide cleaner air, fuel conservation and reduce congestion with half measures. The dominance of the automobile as the almost-exclusive mode of urban transit will not be tempered until we make a major national commitment to do so.

Public transit ridership can be increased by a factor of six, thus moving twice as many people on public transportation as we did during the World War II peak. This is a bold but attainable objective.

I submit that that the $77 billion price for such an accomplishment is reasonable in the light of valid national priorities, but every day of delay will bring an increase in that price and in the severity of the problems we must attack.

The technology is available; the need is at hand. Our primary need today is a legislative program to establish priorities and provide continuity in funding for guideways and vehicles.

Such legislation should encourage development of balanced systems, utilizing all of the various modes to provide maximum availability and service to the riding public. No one mode or technology will serve all of the needs of our urban areas. We must look upon the various transit modes as extensions, if you will, of our streets and highways -- as parts of a balanced, integrated system for moving people.

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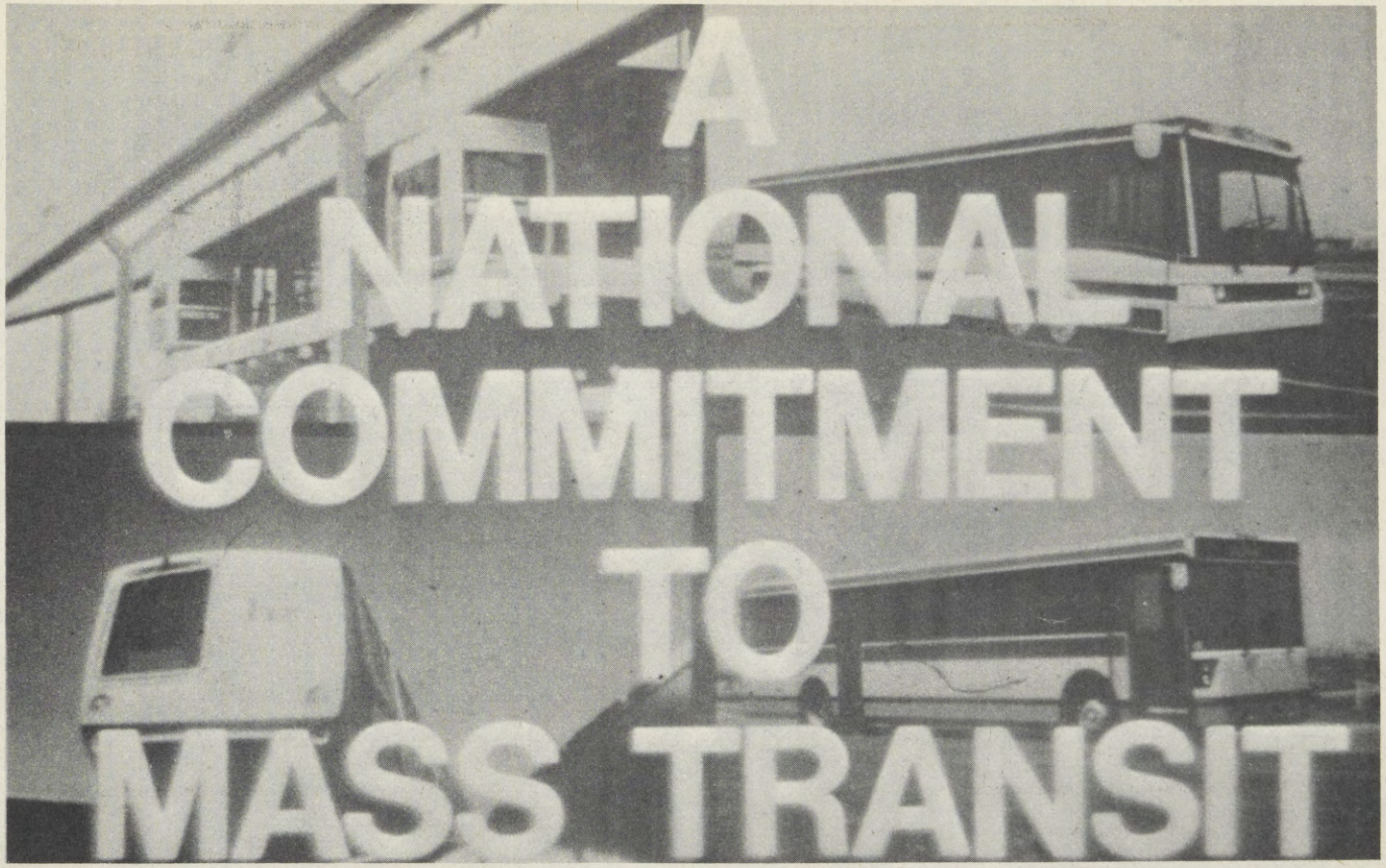
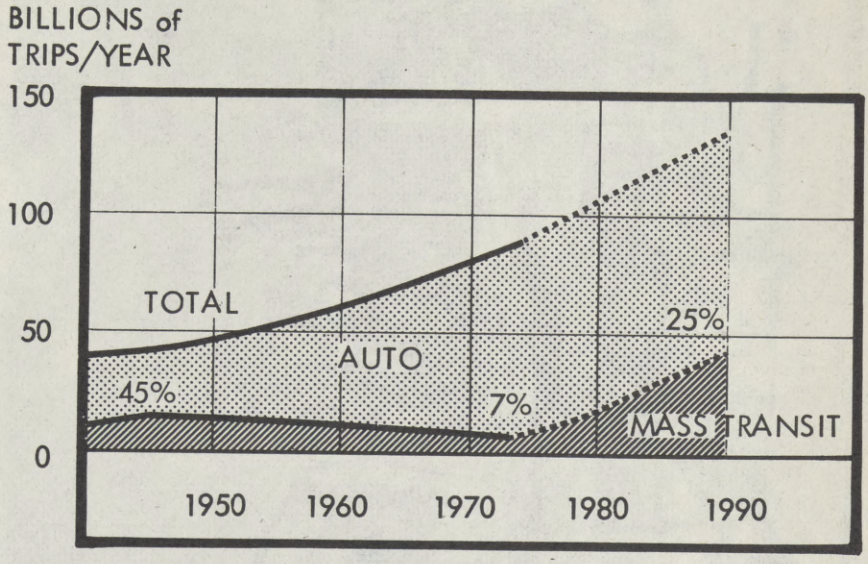
This federal commitment -- comparable in scope to that which produced our fine interstate highway system -- should provide a funding base for capital equipment purchases in the $1 to $2 million range immediately. It should grow to $6 billion annually as the program matures. Some flexibility is essential, allowing local decisions on expenditures for capital equipment versus operational costs.

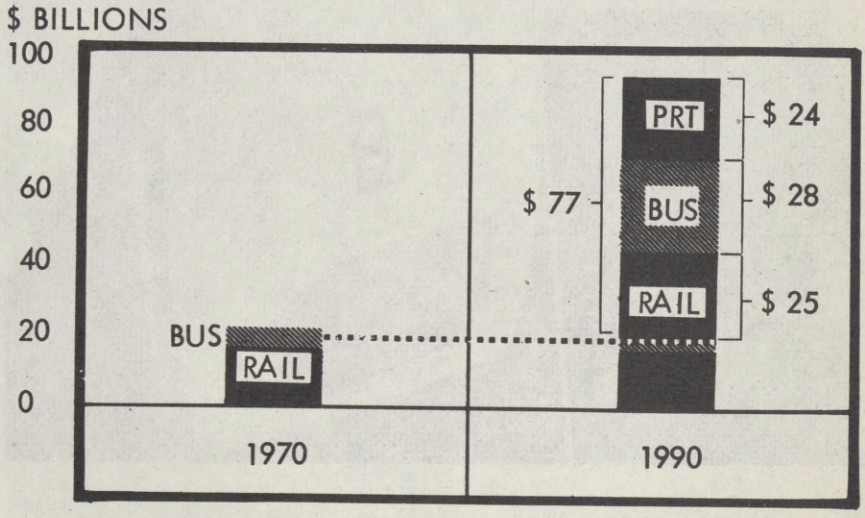
When we consider the fact that we can do this job at a cost comparable to a 5¢ per gallon motor vehicle fuel tax or $22 per person per year, the task is within our reach. It's time to start building.

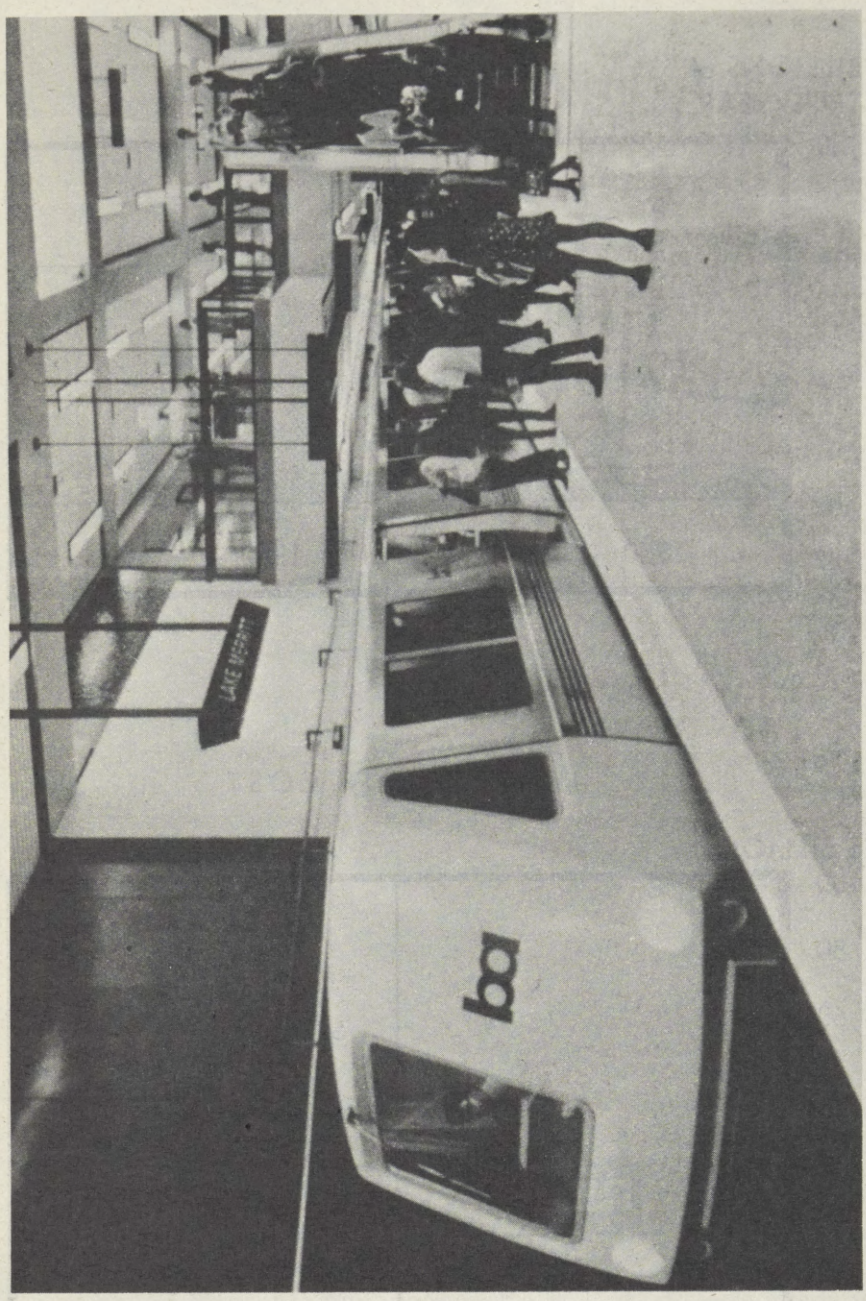

A
NATIONAL
COMMITMENT
TO
MASS TRANSIT

URBAN TRIPS



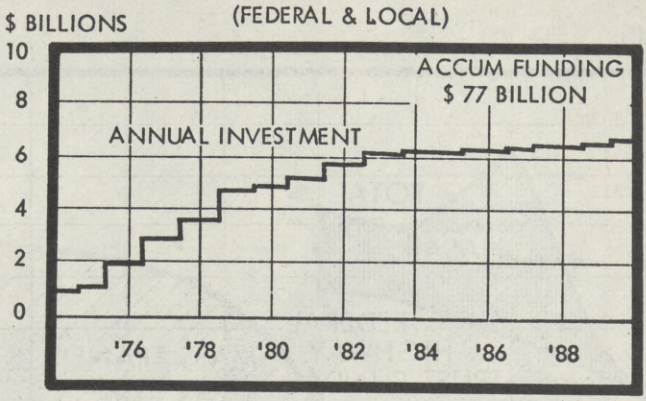
INVESTMENT COST



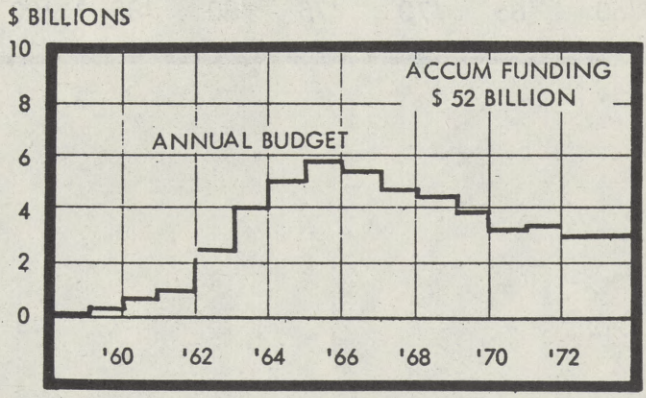


PROPOSED COMMITMENT TO MASS TRANSIT

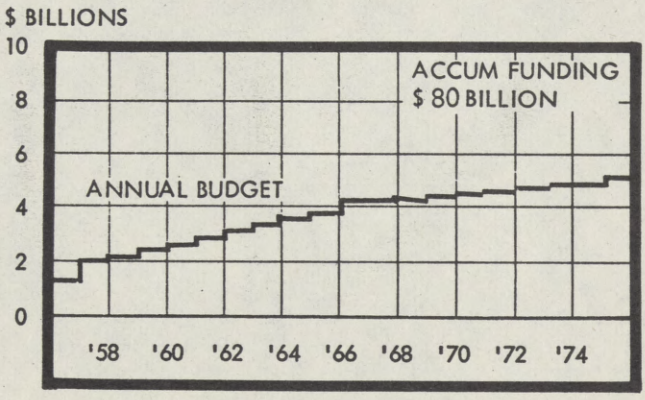
(FEDERAL & LOCAL)



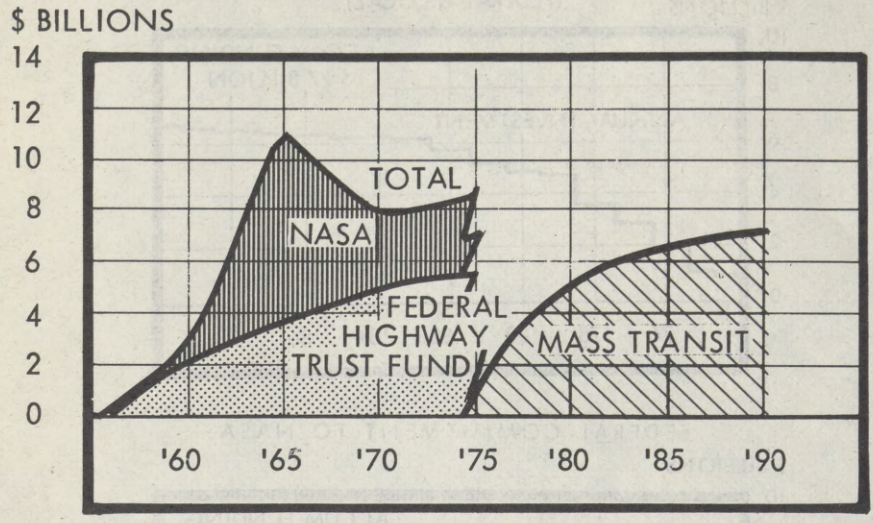
FEDERAL COMMITMENT TO NASA

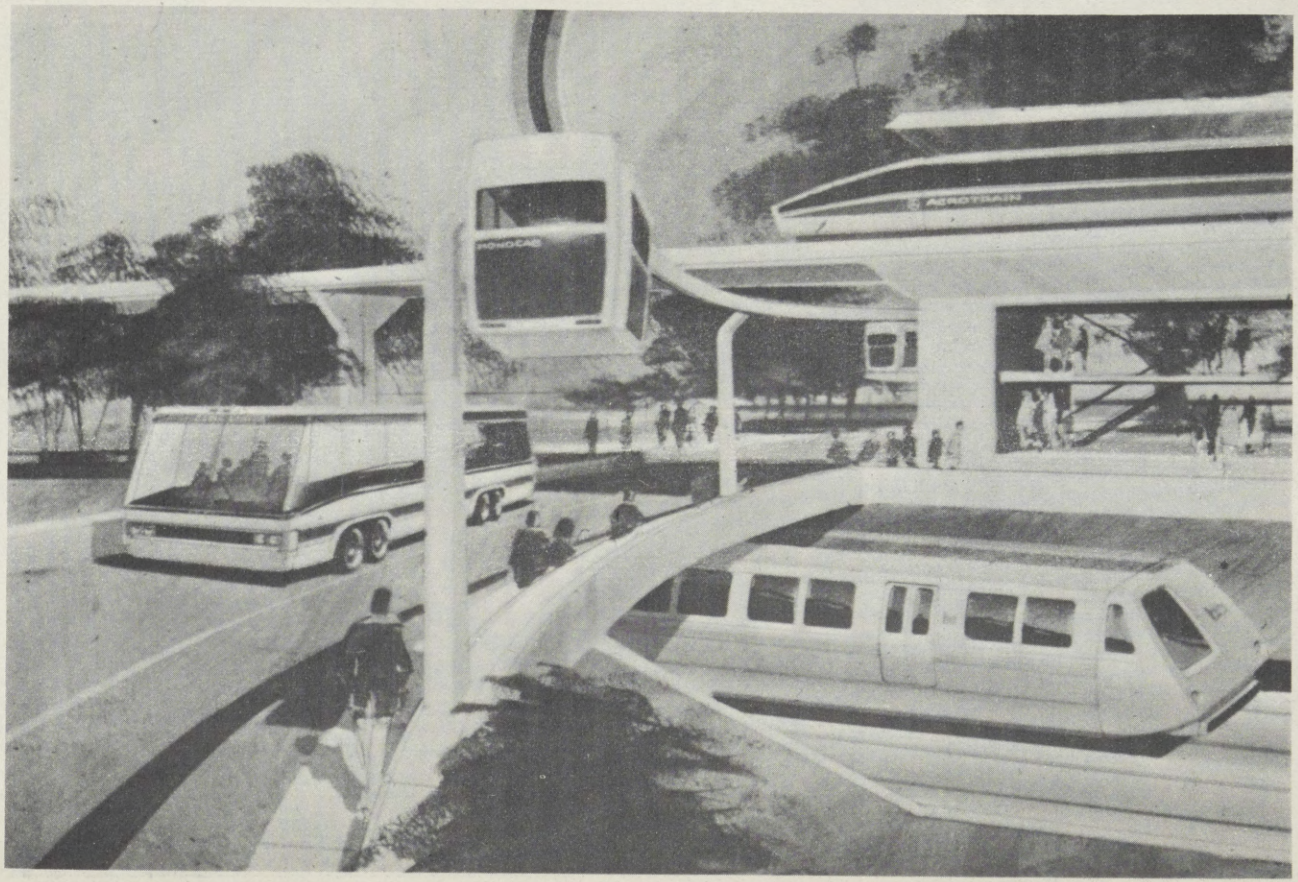


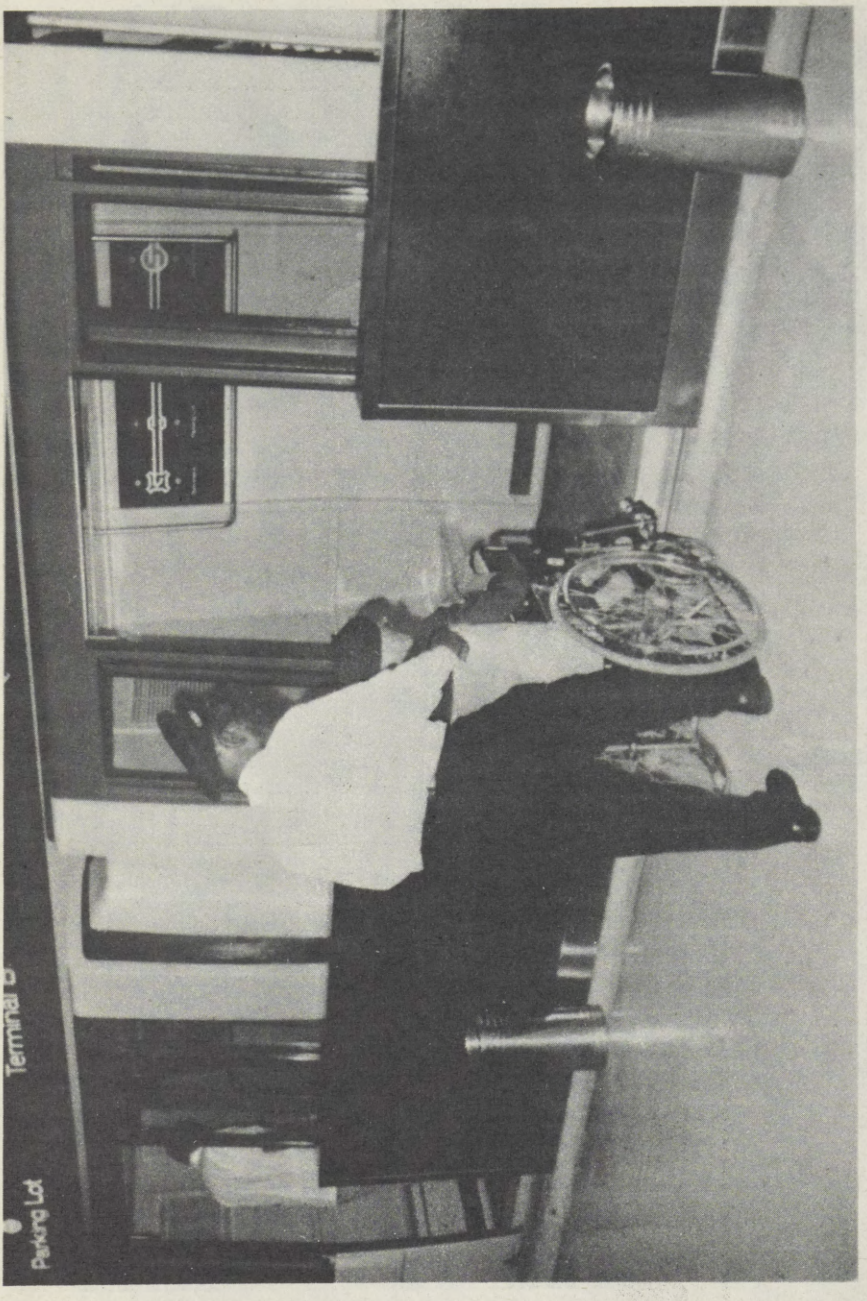
FEDERAL COMMITMENT TO HIGHWAYS



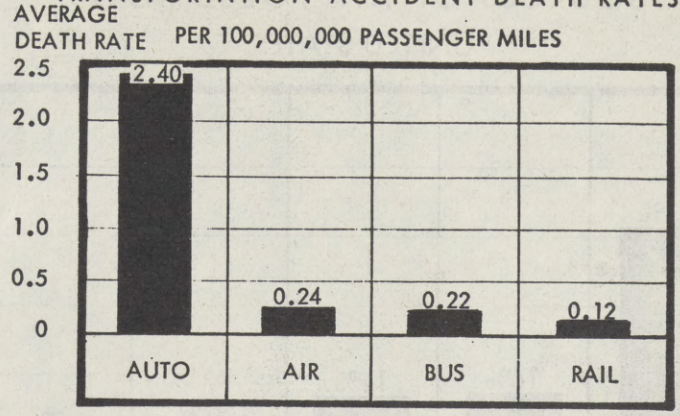
PROPOSED TOTAL COMMITMENTS



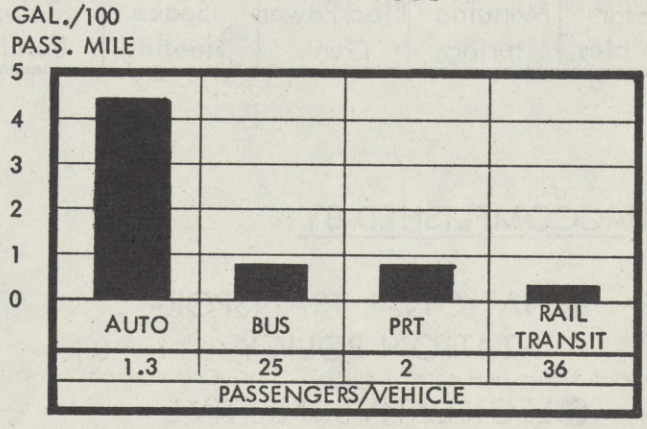

AEROTRAIN


Parking Lot

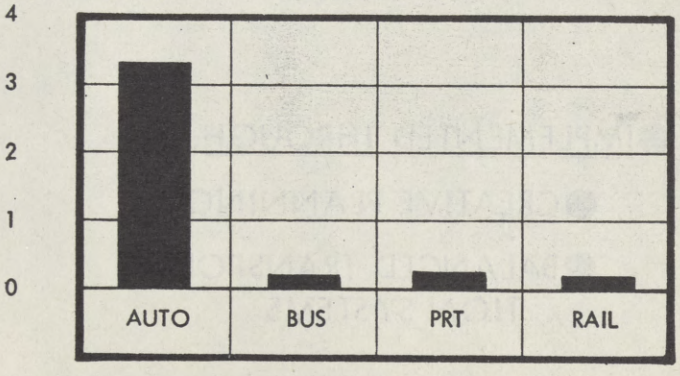
TRANSPORTATION-ACCIDENT DEATH RATES



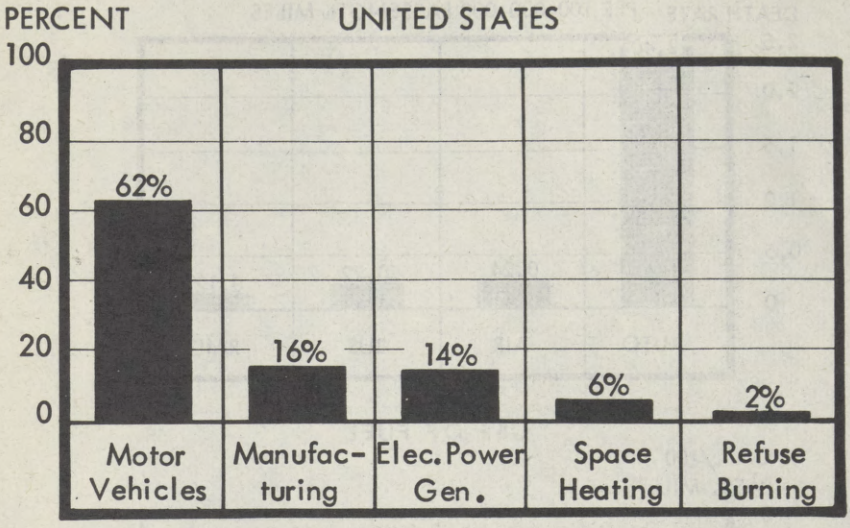
USE OF FUEL



MATERIALS
ALLOCATION

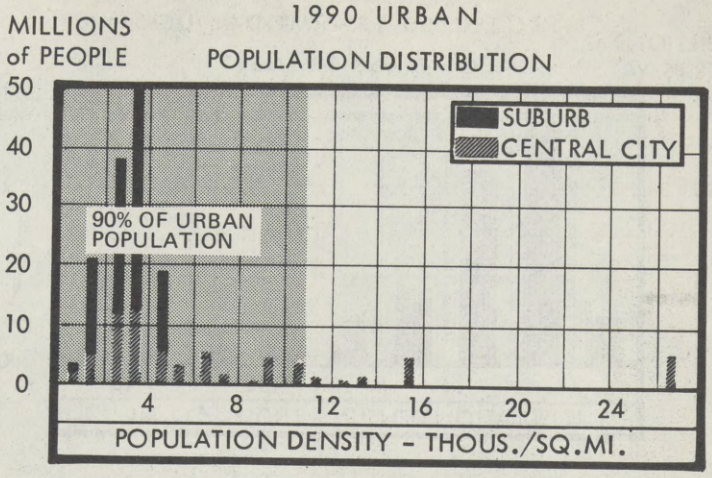


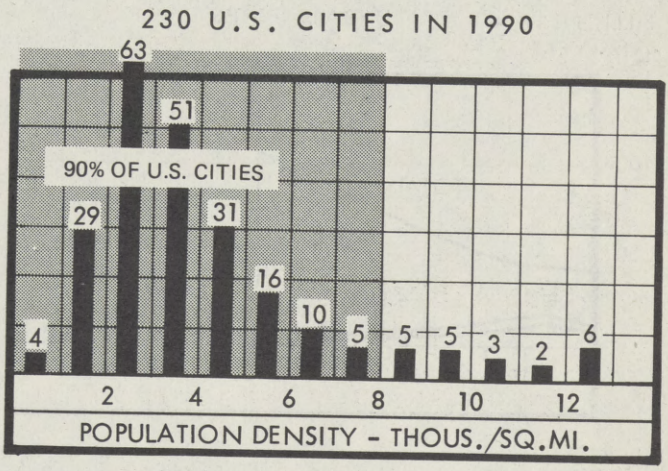
SOURCES OF AIR POLLUTION



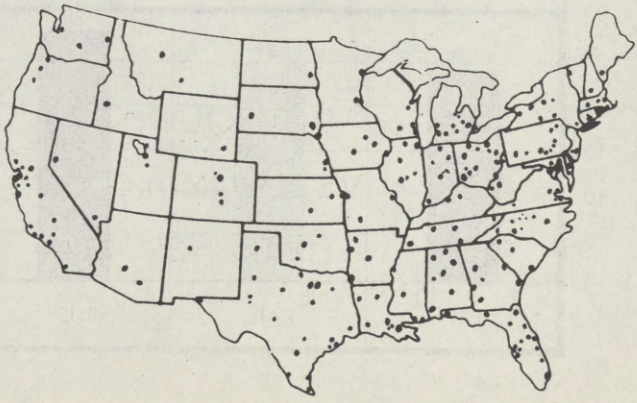
- ACCOMPLISHED BY:
  - NATIONAL TRANSPORTATION POLICY
  - LEGISLATIVE INIATIVE

- IMPLEMENTED THROUGH:
  - CREATIVE PLANNING
  - BALANCED TRANSPORTATION SYSTEMS

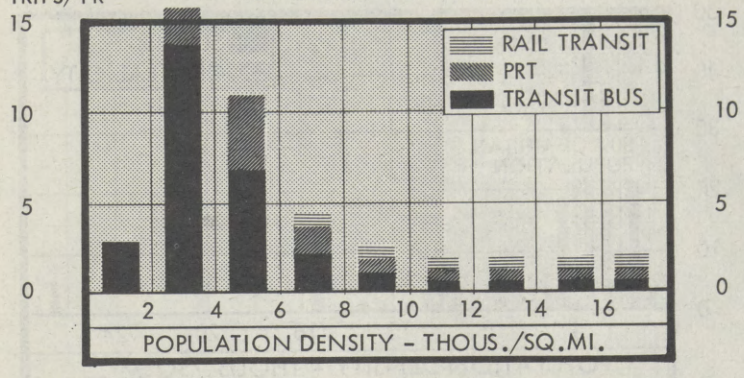




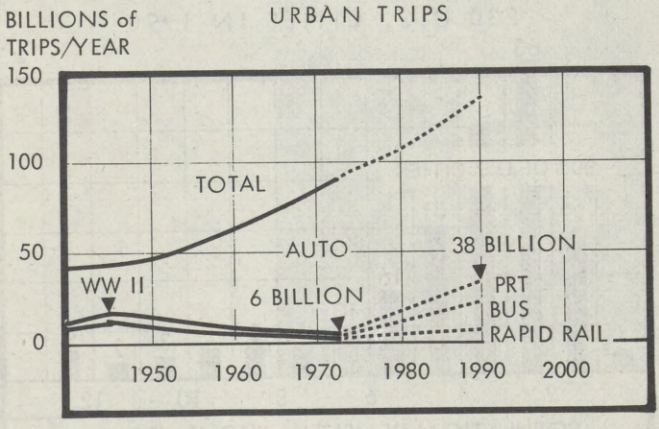
1990 MAJOR URBAN AREAS



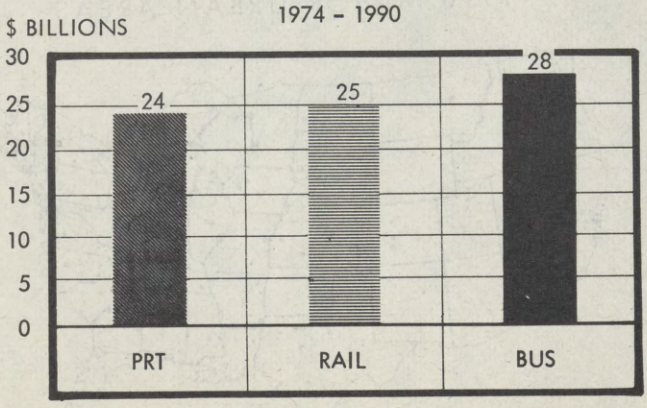
PROJECTED 1990 MODAL USE OF MASS TRANSIT



URBAN TRIPS



CUMULATIVE MASS TRANSIT INVESTMENT 1974 - 1990



PERSONAL RAPID TRANSIT

(PRT)

PERSONAL RAPID TRANSIT
INDUSTRY POSITION

- STATUS:
  - FOUR SYSTEM DEMONSTRATIONS AT TRANSPO '72
  - MANY SPECIAL-PURPOSE SYSTEMS OPERATING
  - DENVER, LAS VEGAS PLAN URBAN INSTALLATIONS
- PROJECTION:
  - INDUSTRY READY TO RESPOND

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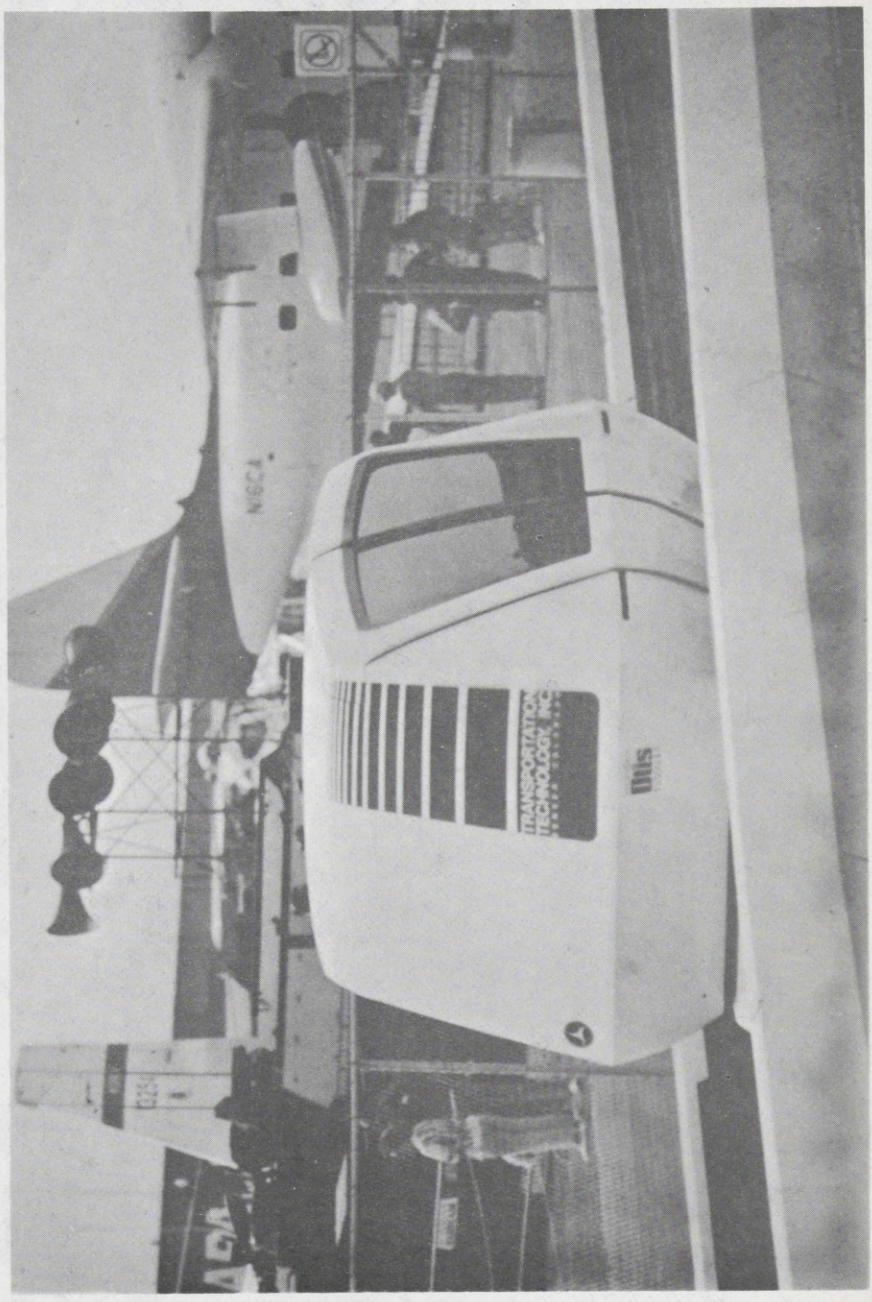
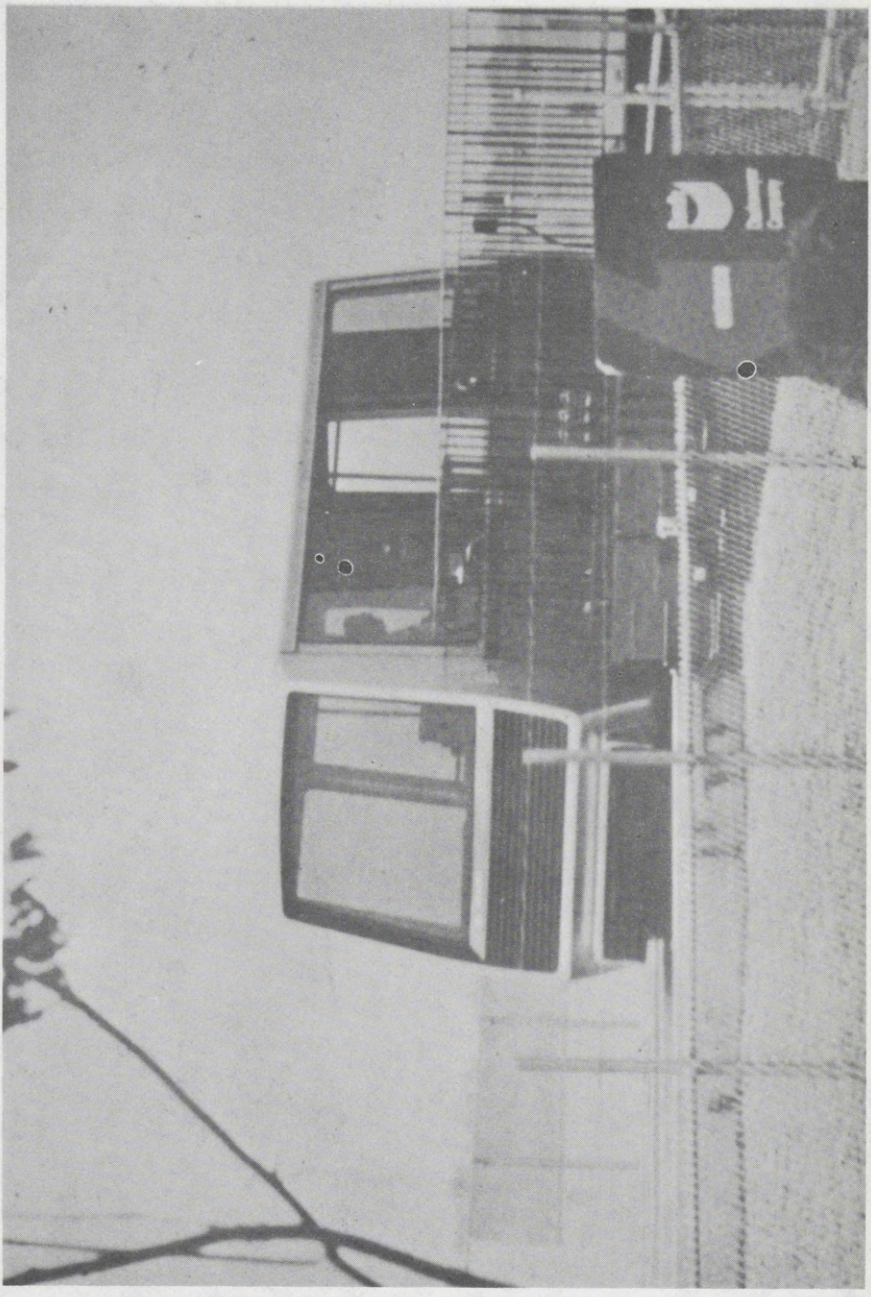
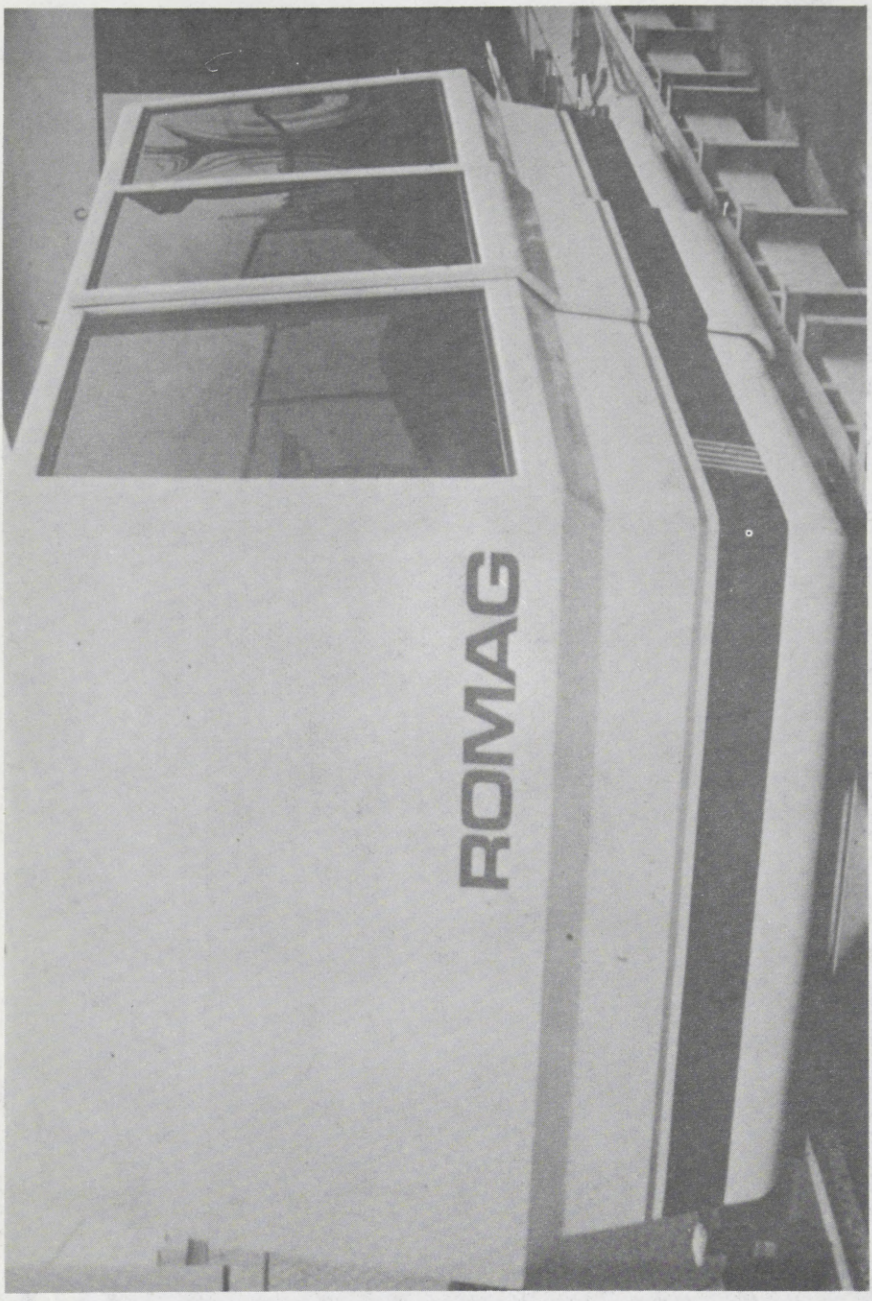
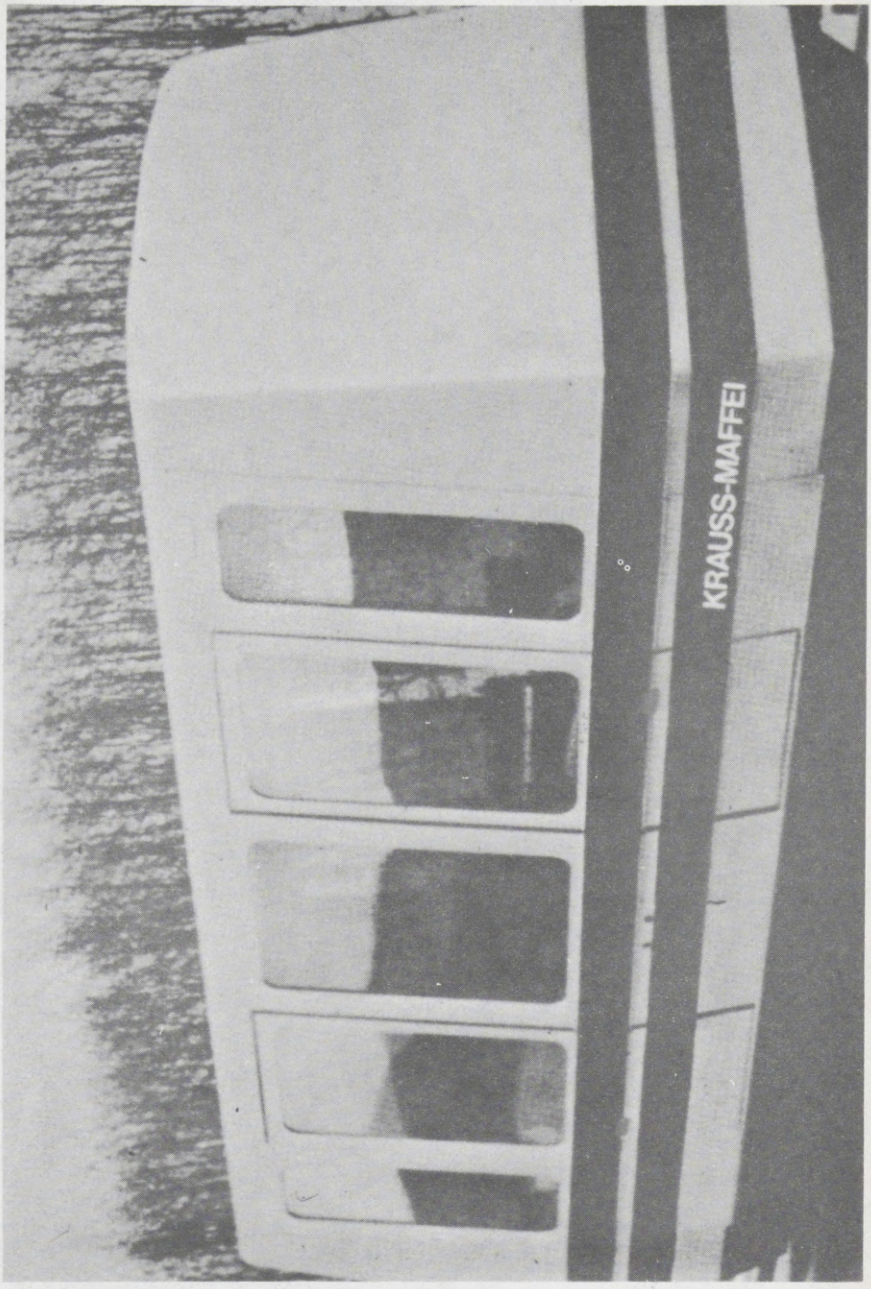
AUTOMATED GUIDEWAY TRANSPORTATION SYSTEMS

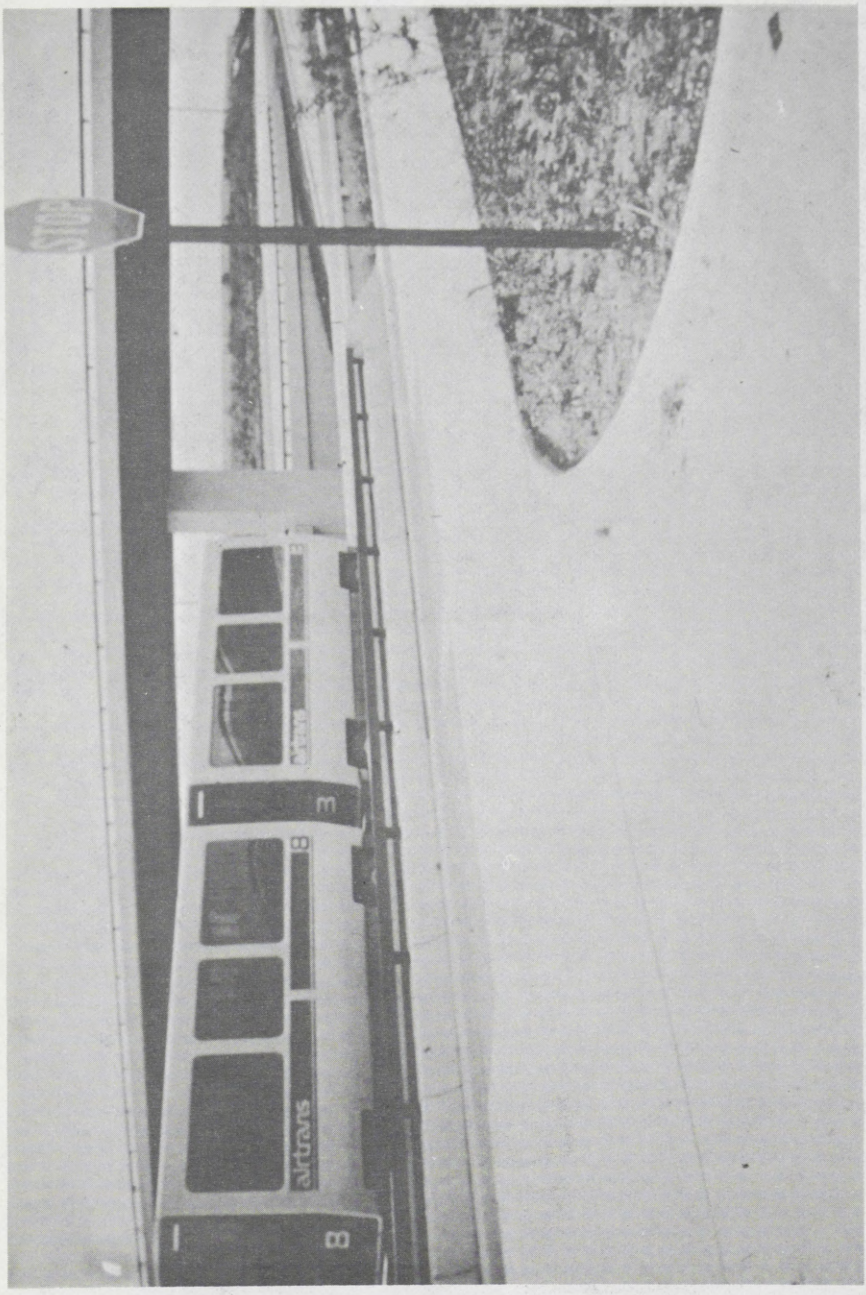

Otis

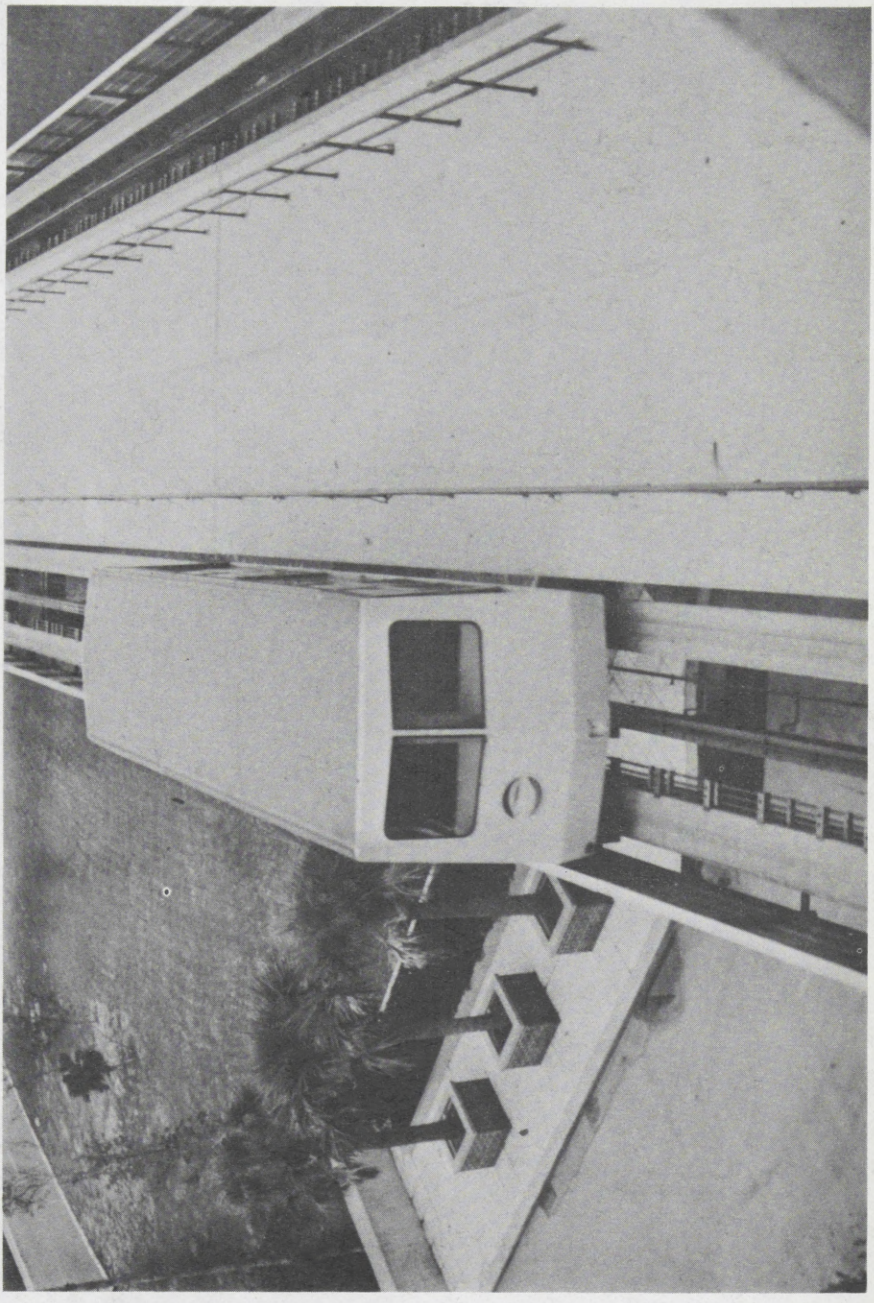

Ford




ROMAG

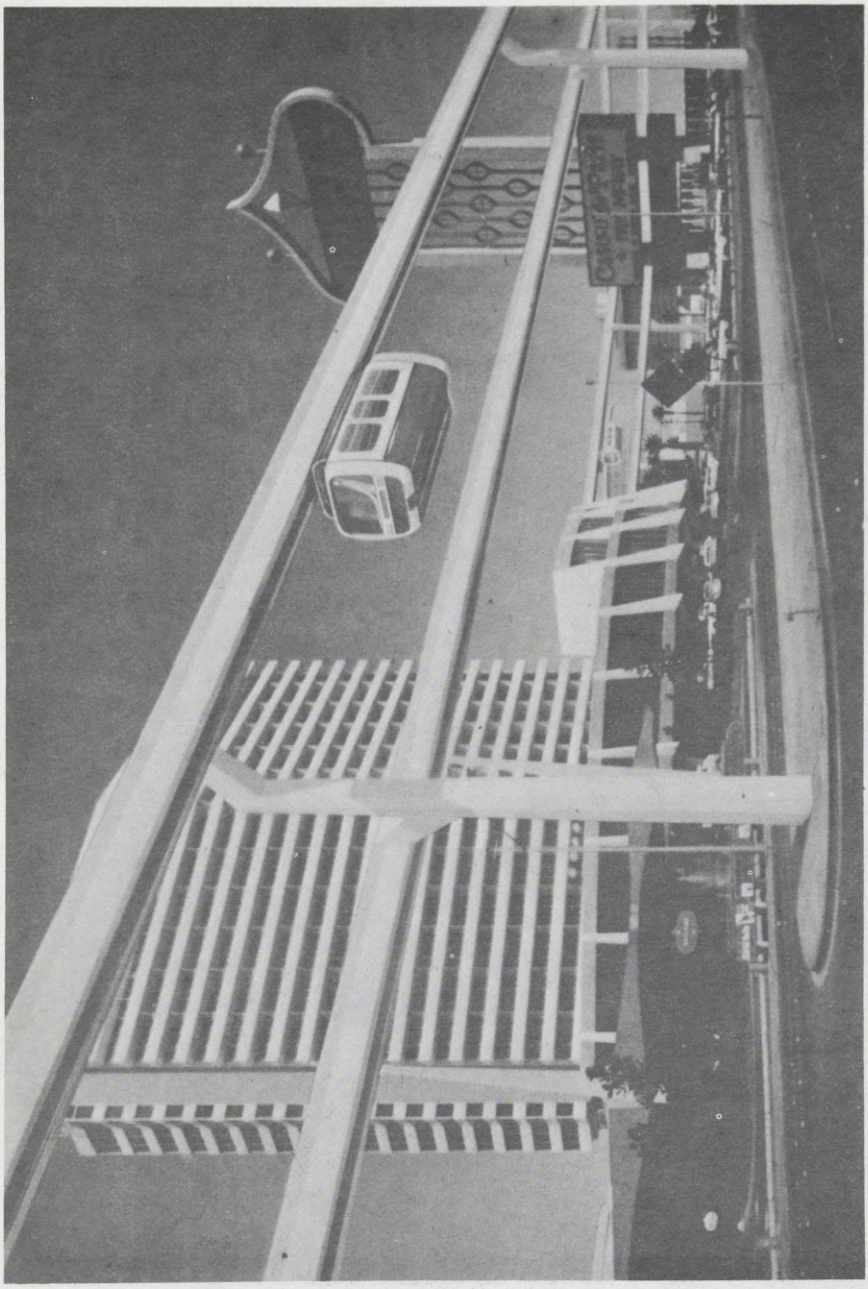

KRAUSS-MAFFEI

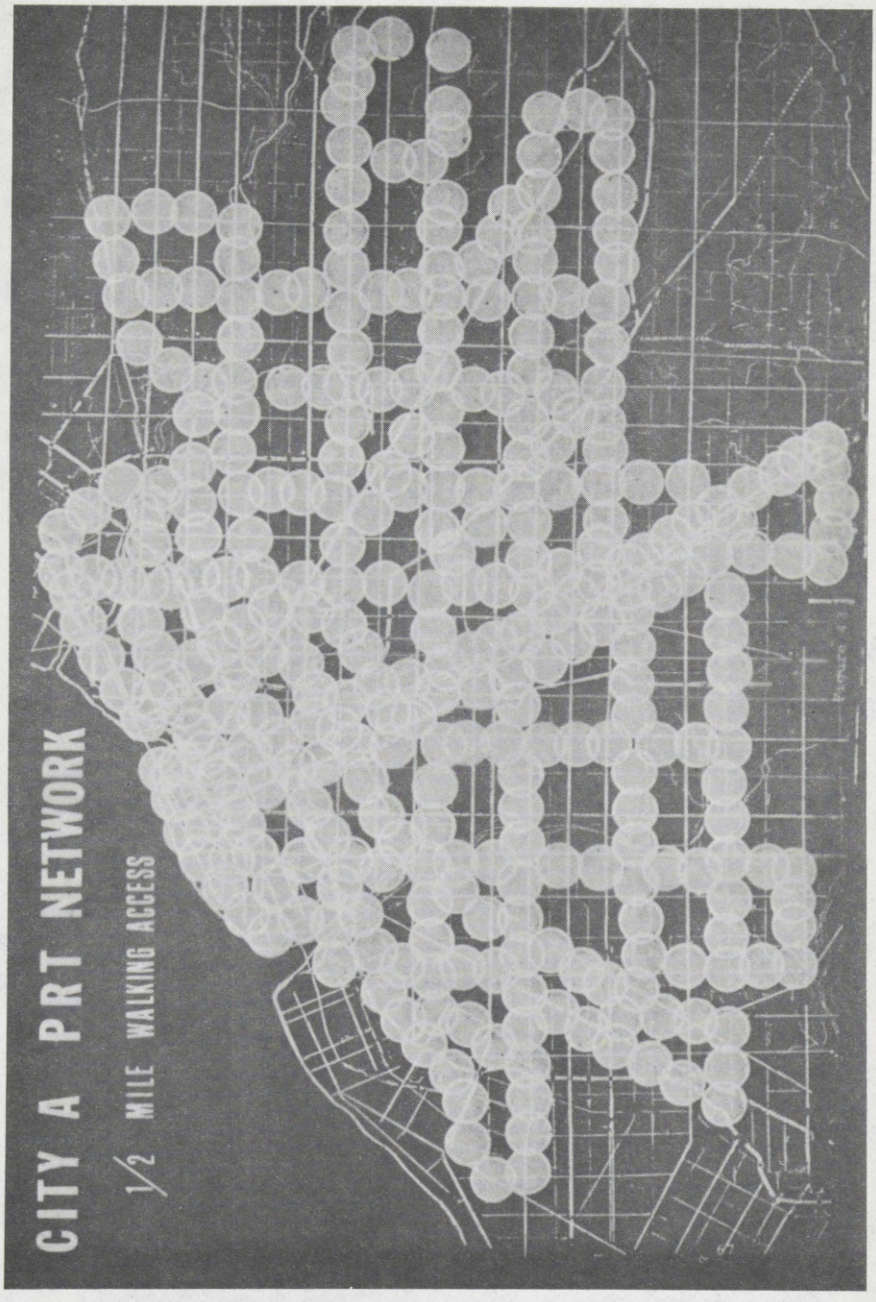

Artrans



Take Escalator Up To Terminal B
Second Level Ticketing Lobby
AERONAVES-AMERICAN-BRANIFF
AIR FRANCE-KLM-DELTA
PAN AM-SOUTHWEST
All International Flights



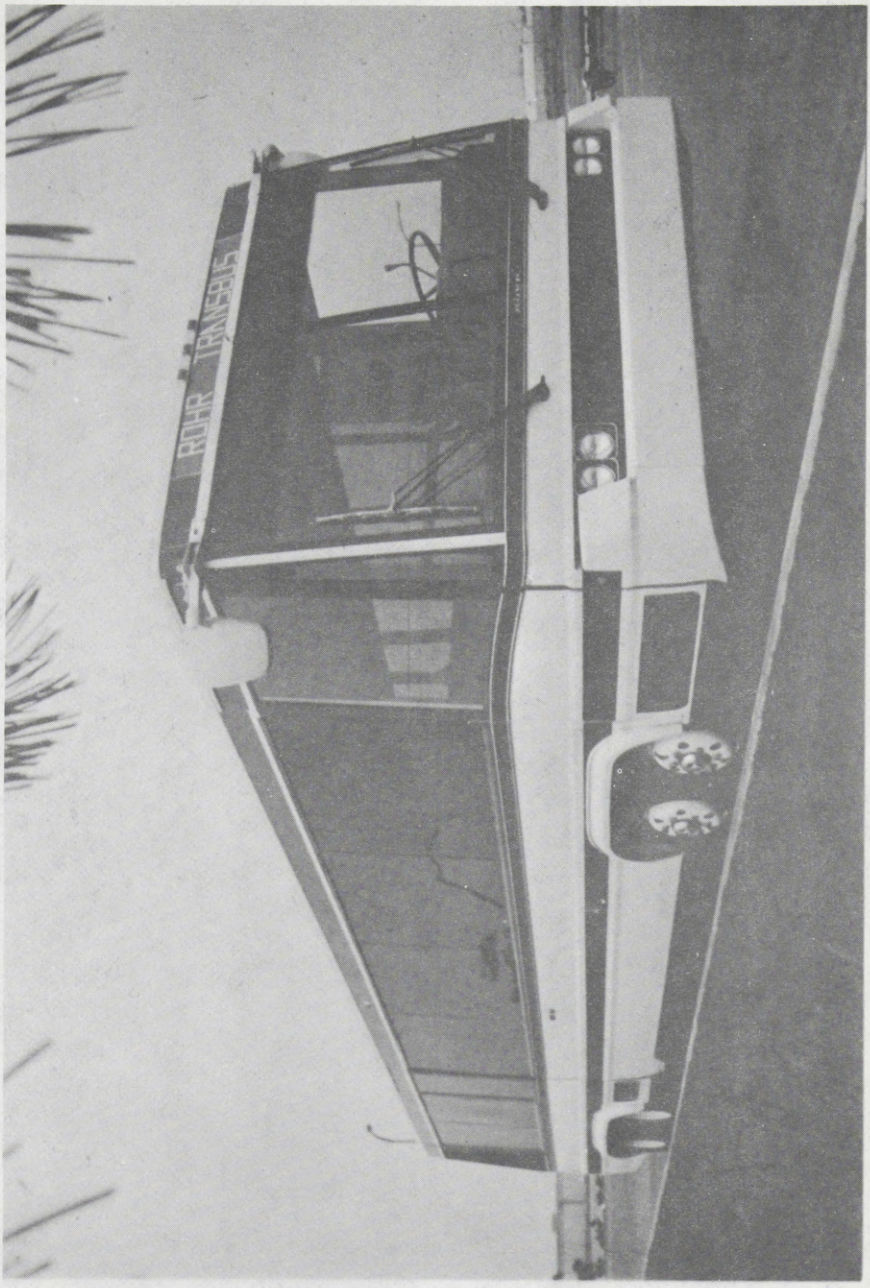


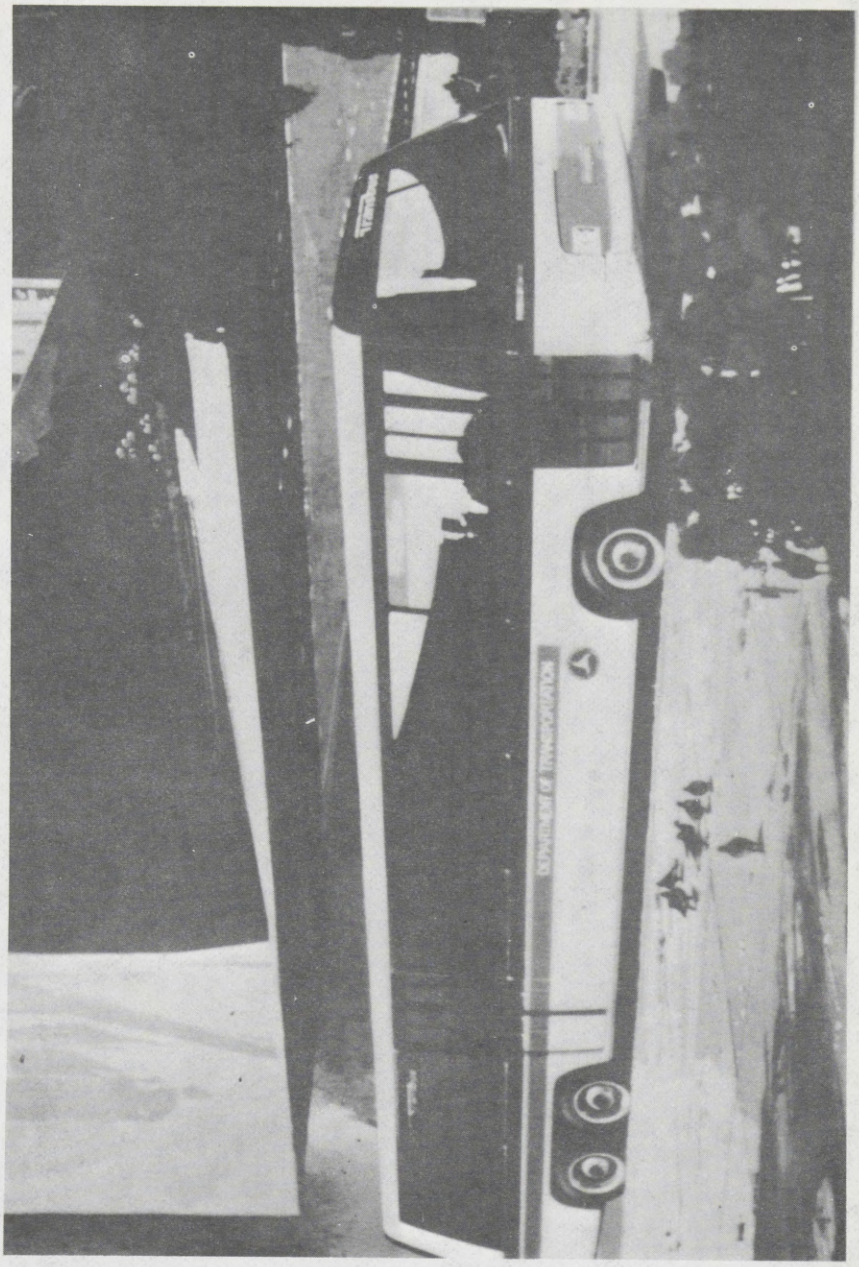

CITY A PRT NETWORK
1/2 MILE WALKING ACCESS

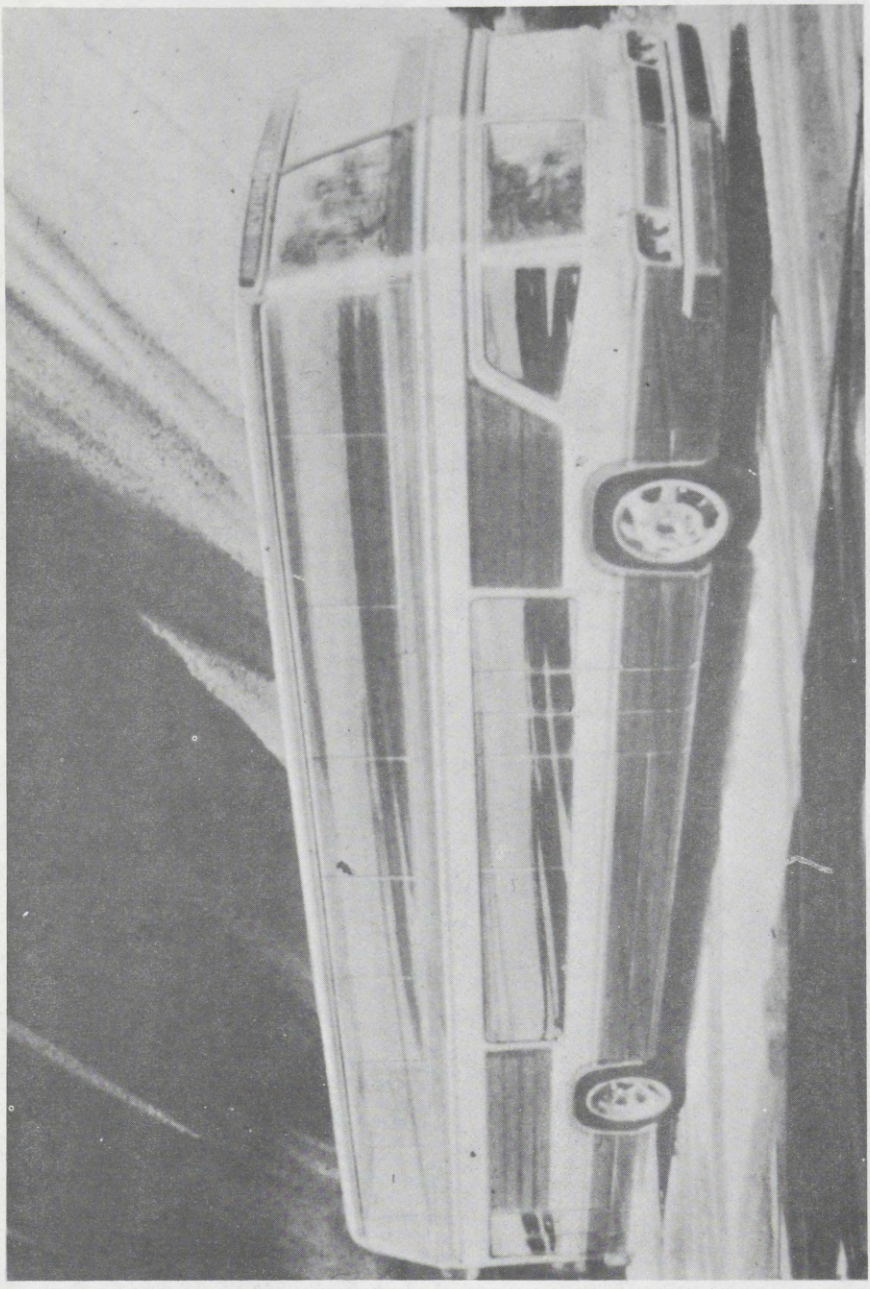
TRANSIT BUSES

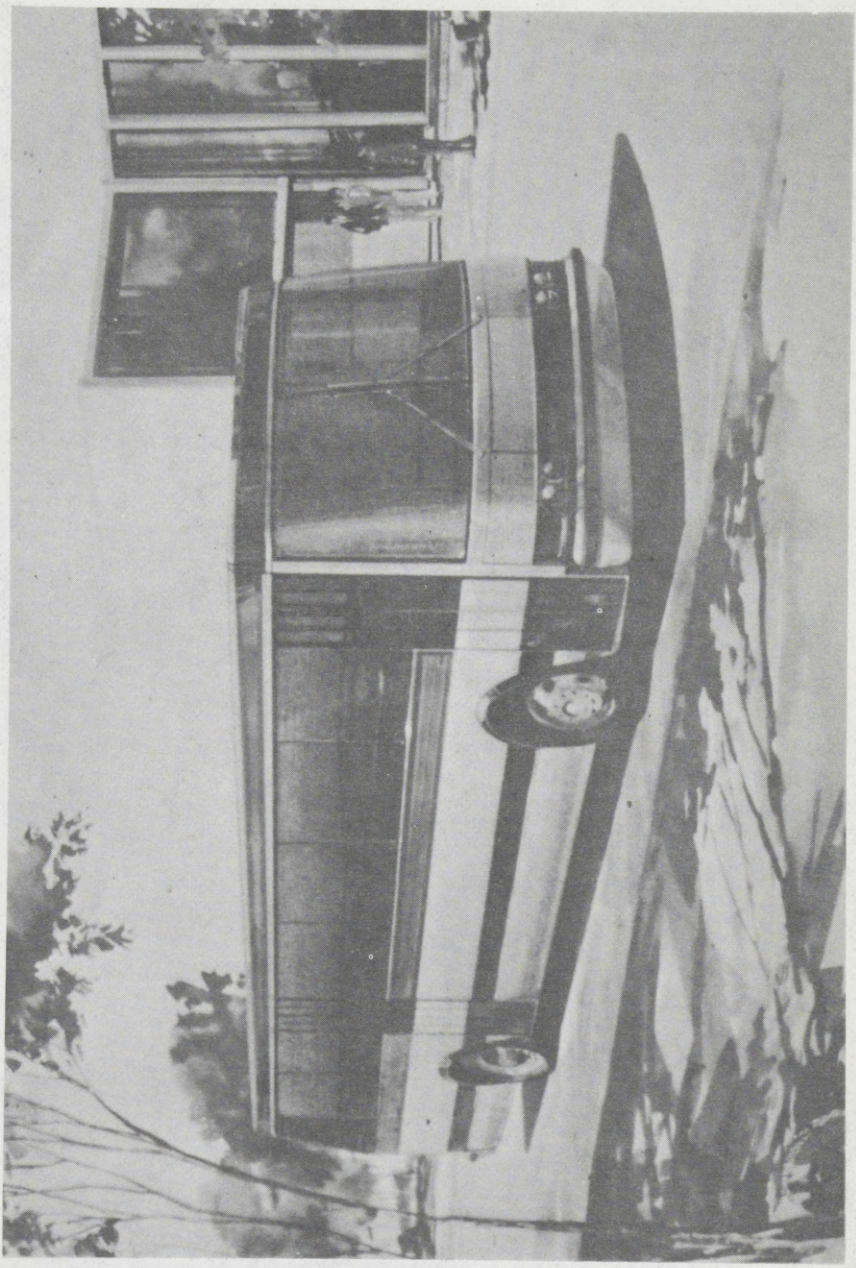
TRANSIT BUS
INDUSTRY POSITION

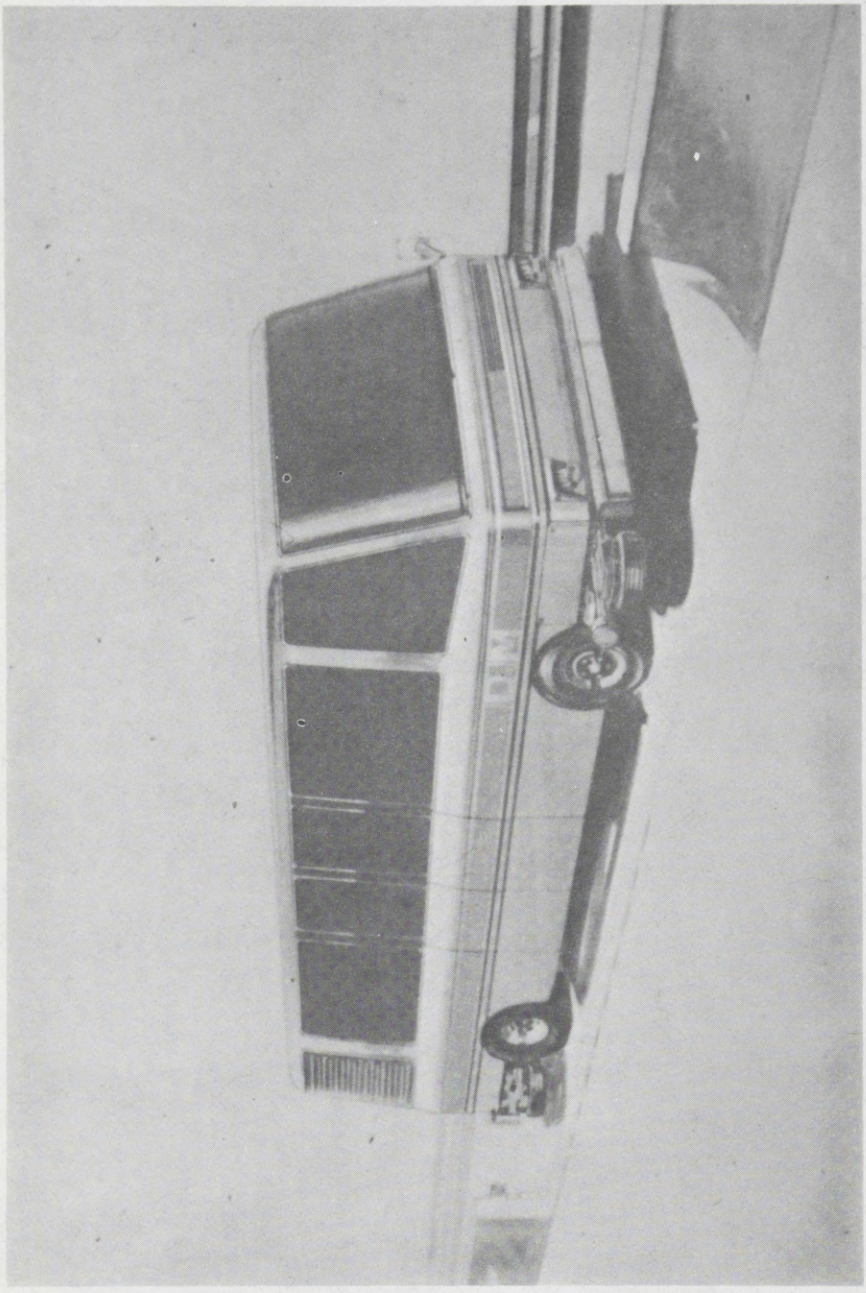
- STATUS:
  - RECENT ANNUAL PRODUCTION RATE: 2,500-3,000 UNITS
- PROJECTION:
  - POISED FOR CONTINUING ANNUAL PRODUCTION IN THE 12,000-14,000 UNITS RANGE


ROHR TRANSPORT





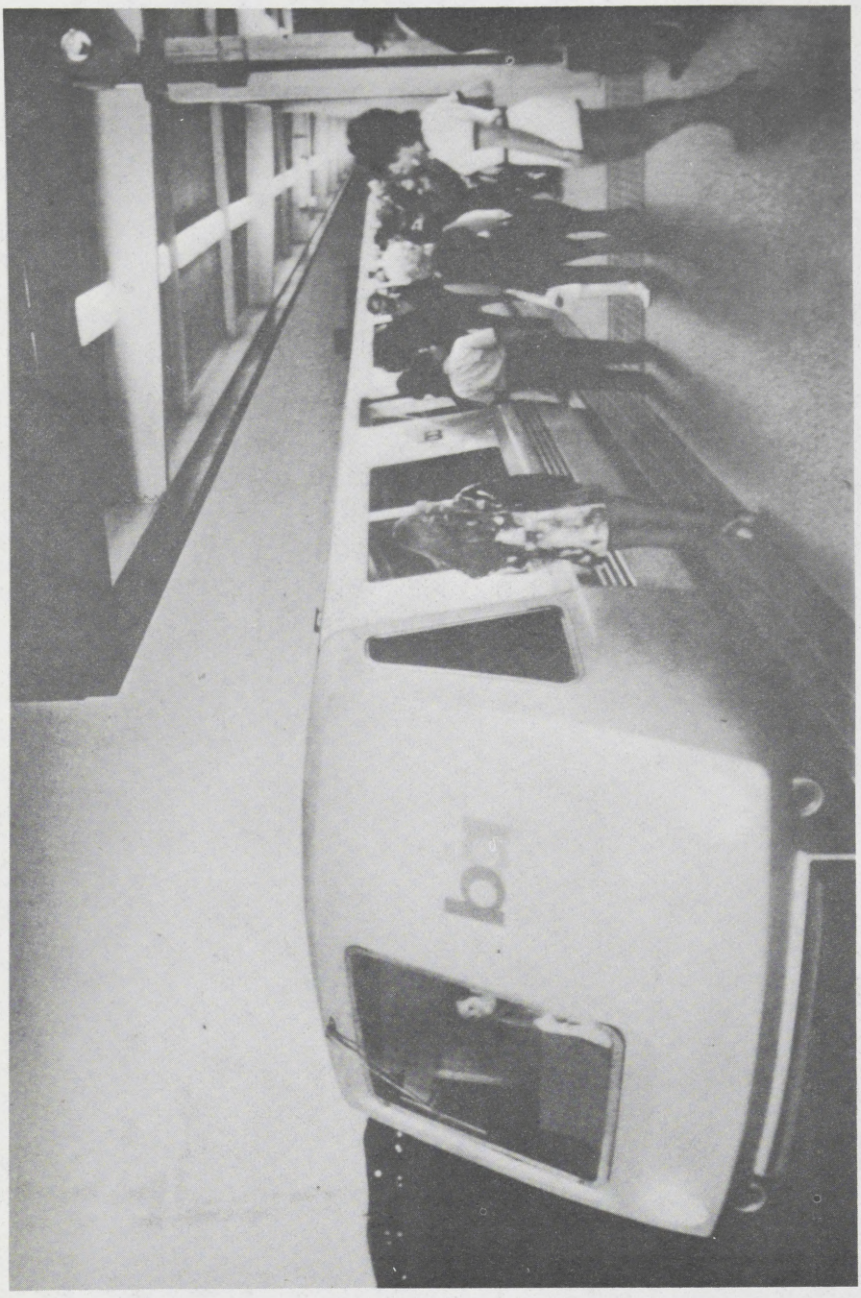


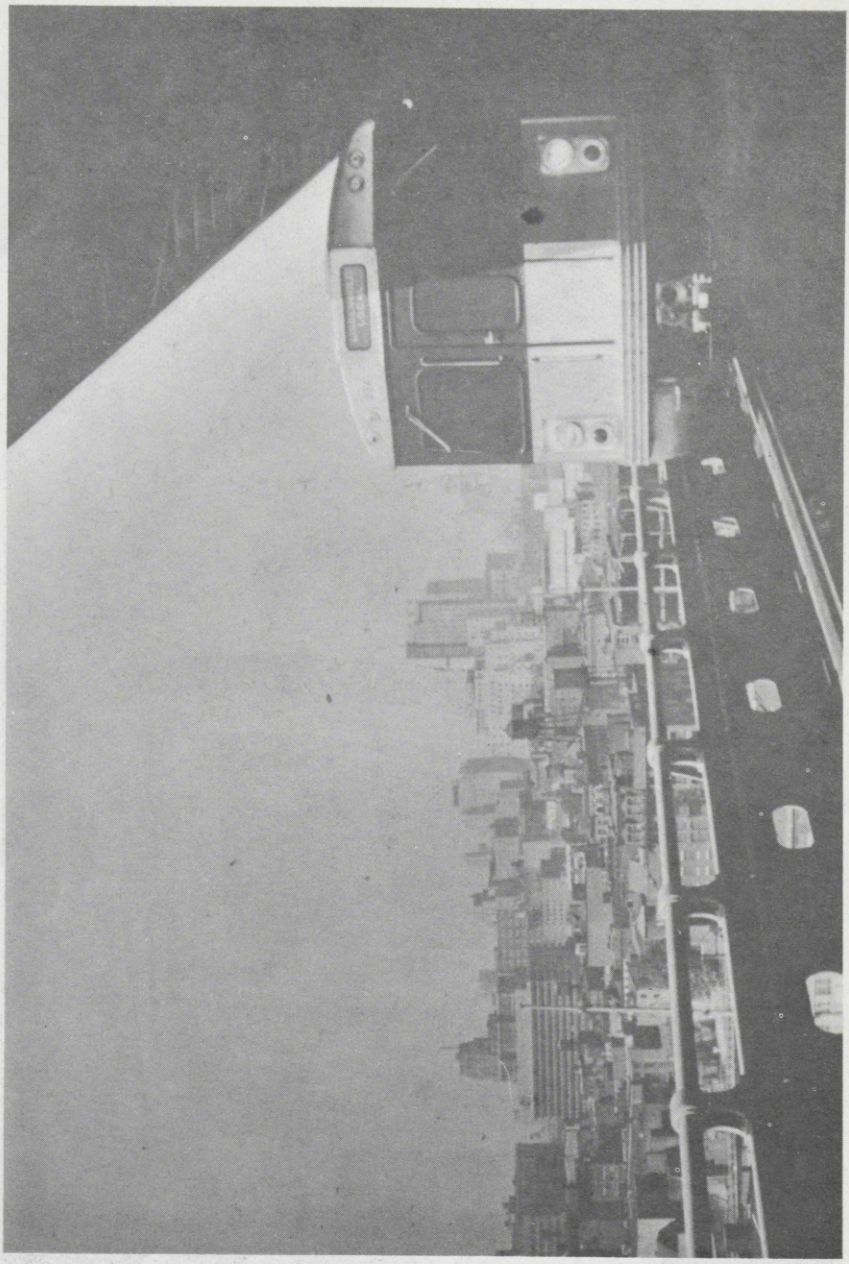


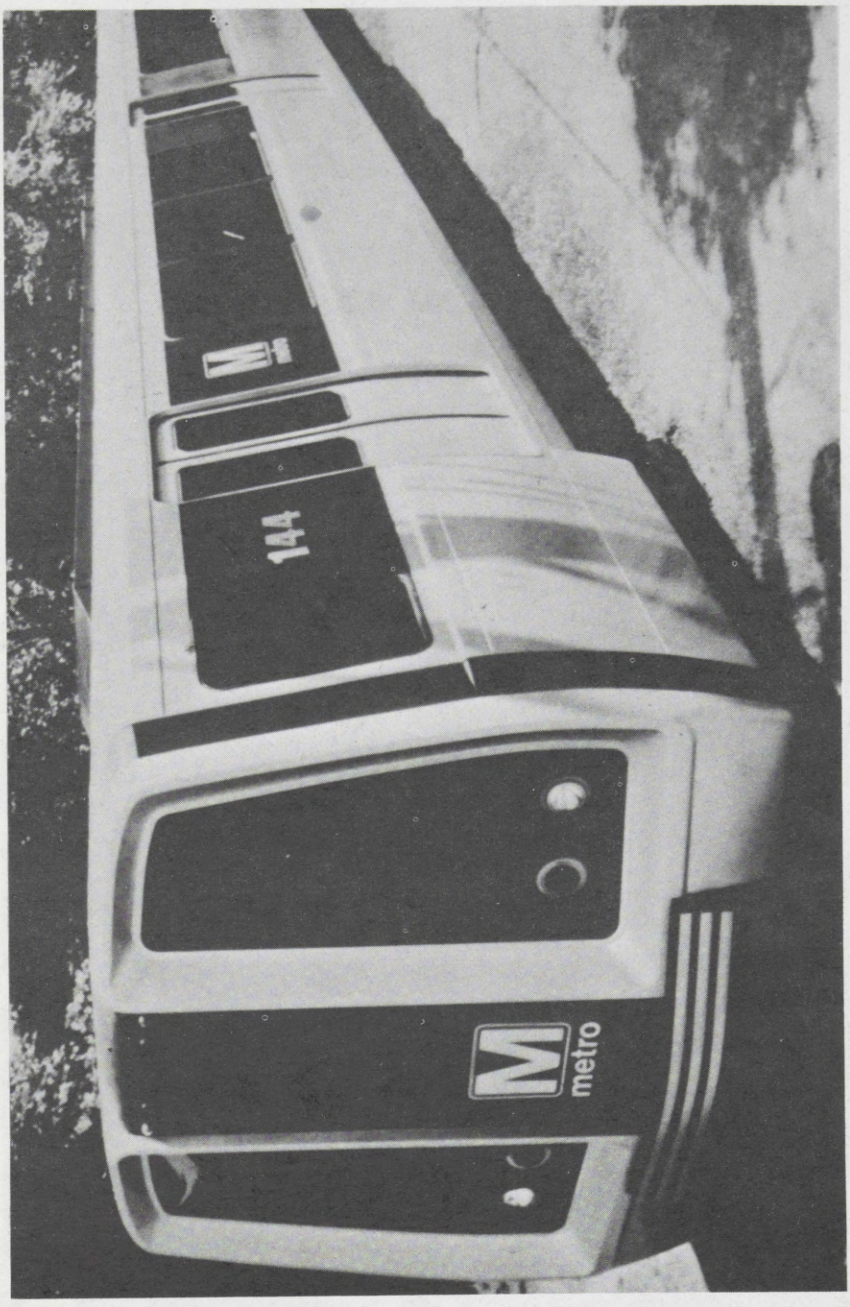
RAIL TRANSIT

RAIL TRANSIT INDUSTRY POSITION

- STATUS: (1970)
  - 10,000 VEHICLES
  - 400 ROUTE MILES
- PROJECTION: (1990)
  - 13,000 NEW VEHICLES
  - 800 NEW ROUTE MILES



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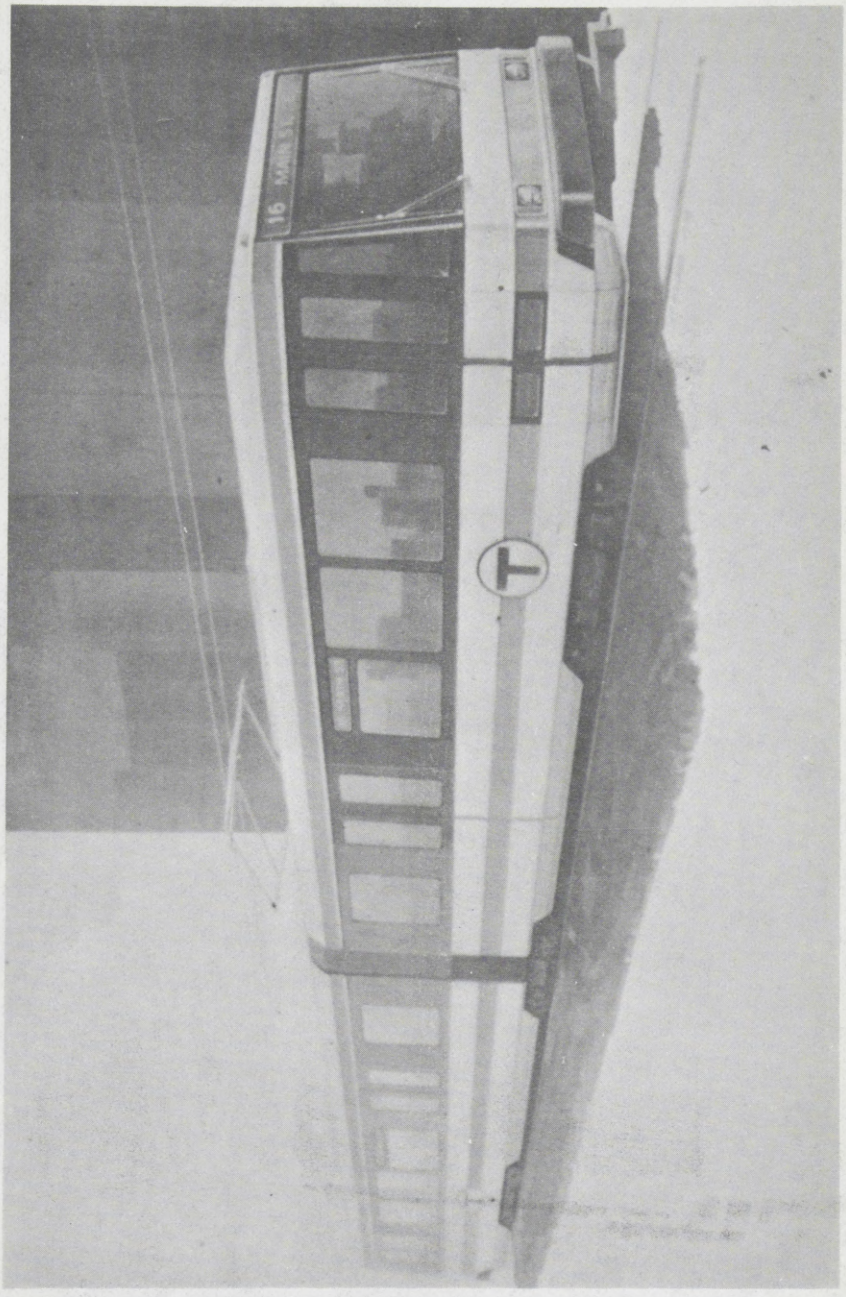
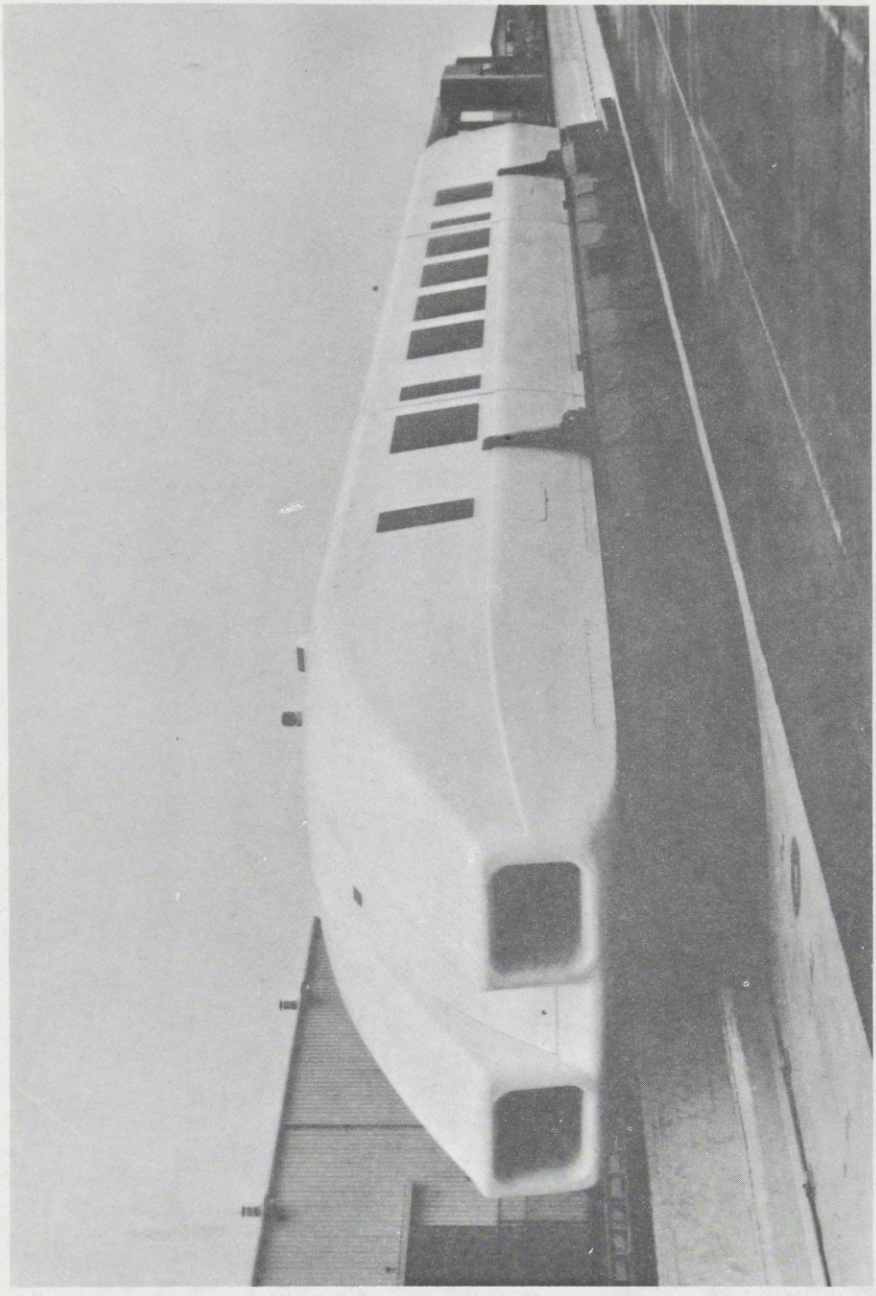
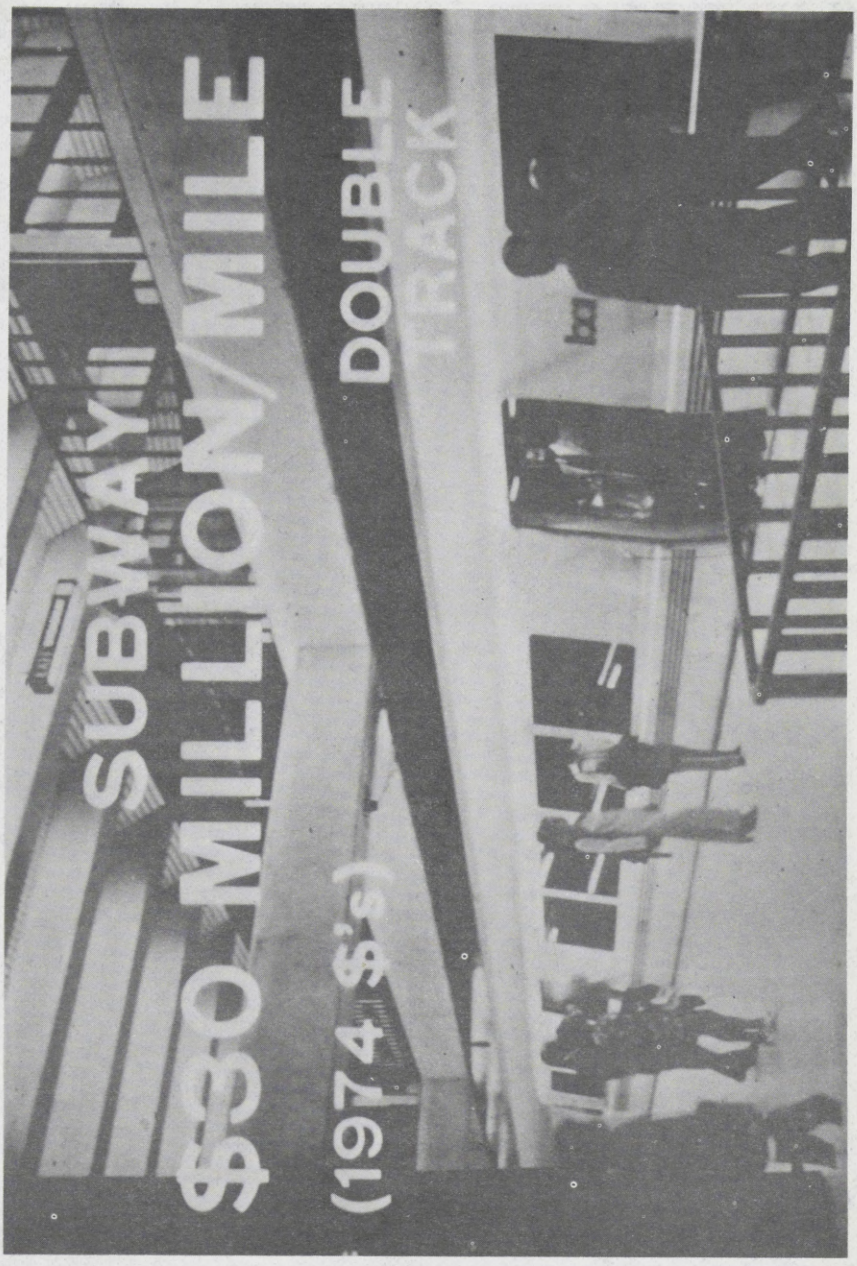
M
metro



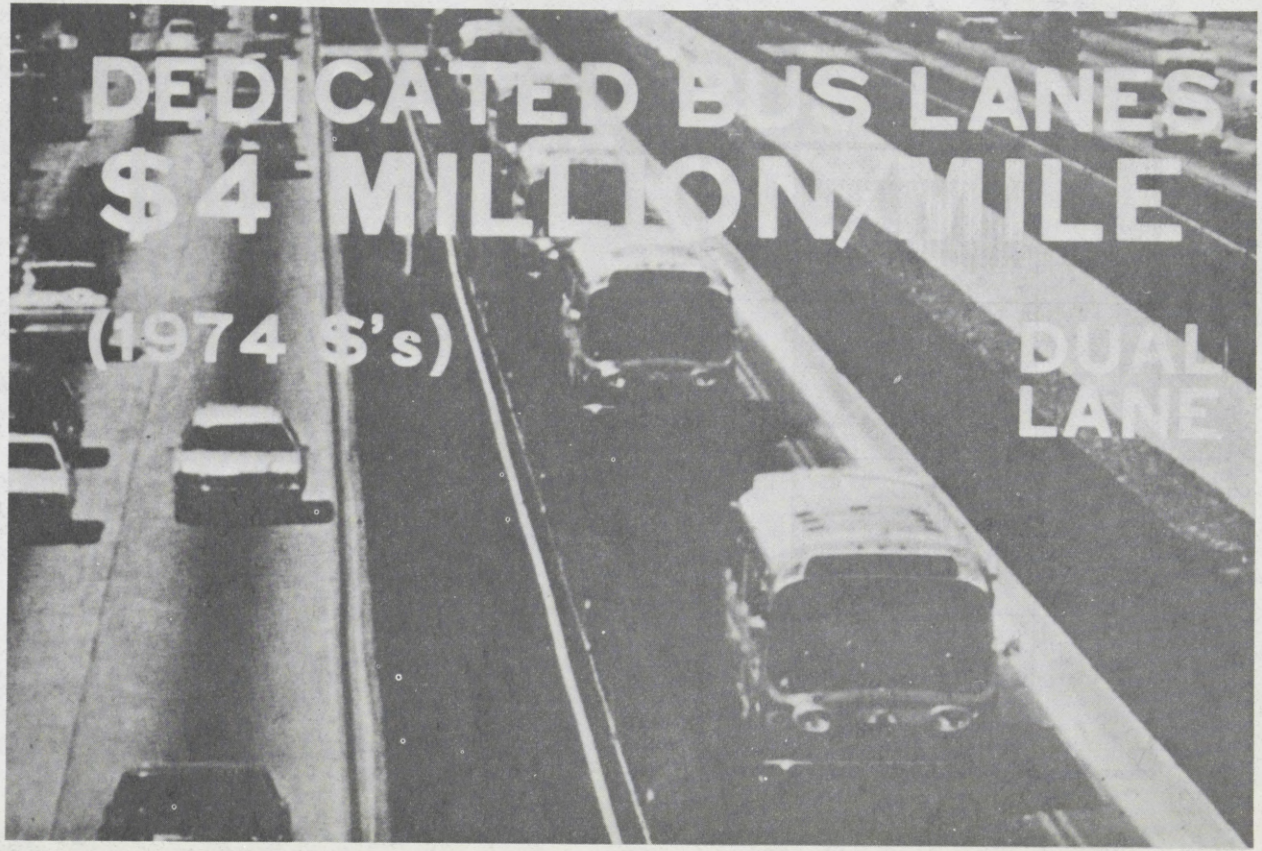


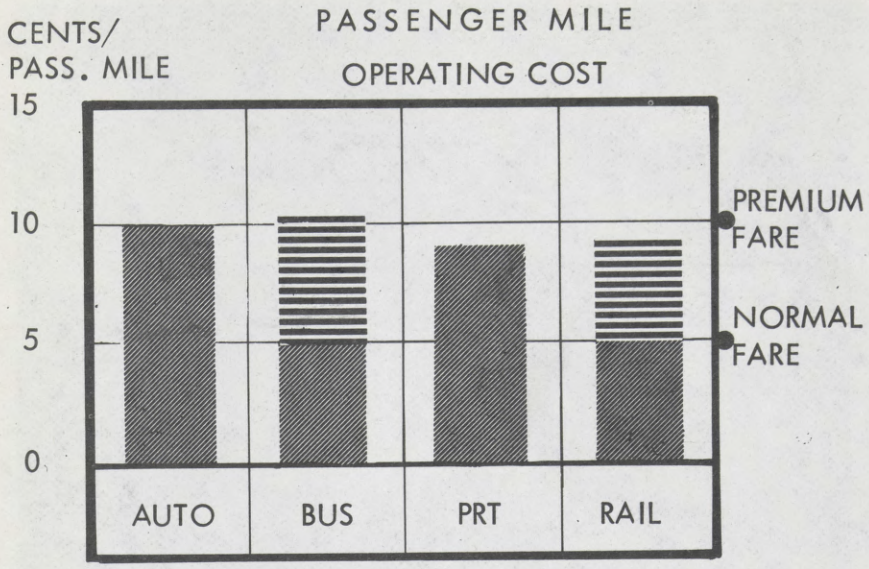

AT GRADE
$8 MILLION/MILE
(1974 $'s)
DOUBLE
TRACK


ELEVATED
$15 MILLION/MILE
(1974 $'s)
DOUBLE
TRACK


SUBWAY
$50 MILLION/MILE
(1974 $'s)
DOUBLE
TRACK

MILE
DOUBLE


DEDICATED BUS LANES
$4 MILLION/MILE
(1974 $'s)
DUAL
LANE


PASSENGER MILE
OPERATING COST
CENTS/
PASS. MILE
15
10
5
0
PREMIUM
FARE
NORMAL
FARE
AUTO
BUS
PRT
RAIL

COST OF

25% TRIPS BY MASS TRANSIT

BY 1990

EQUIVALENT TO

- 5¢ PER GALLON FUEL TAX

OR

- $ 22.00 PER YEAR PER PERSON

OR

- 1/2% OF GNP

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Summary Remarks

Mr. Beck. Just briefly our company has dedicated more than half of the corporate resources to helping solve urban mass transit problems and we previously were an aerospace company and now are half and half, aerospace and mass transit.

We feel our comments today are reasonable and objective, particularly considering that we supply all mass transit equipment and have no prejudice for one system over another. We are making a specific recommendation here for a national commitment to mass transit.

HISTORY OF MASS TRANSIT

We would like to point out the history of mass transit over the last 50 years or 40 years in billions of trips per year, starting in 1940 through our current year and forecasting out through 1990. It is significant in World War II 45 percent of urban trips were by mass transit or about 18 billion. Our public mass transit because of the great convenience and comfort of the automobile has steadily deteriorated over the last 30 years and at this moment despite billions of dollars already spent of Federal funds it is still deteriorating.

Our proposal, which we think is attainable, reasonable, and will give a meaningful improvement in the convenience and magnitude of public mass transit, would be to increase the percentage of urban trips by mass transit from its present 7 percent to 25 percent.

Even with such an increase, however, there will be an accompanying 30 percent increase in automobile traffic. So we think that is a reasonable minimum goal and it will take us about 16 years or until 1990 to accomplish the task.

COST OF 1990 SYSTEM

How much will this cost? Our estimate, considering the $20 billion worth of systems that we have in our country today, will require an additional $77 billion to get 25 percent of the urban trips by mass transit in 1990. If this seems extravagant I would like to point out that on a per-capita basis $77 billion would pay for about one-third of the planned Washington Metro system. So this is a conservative number when it is measured against the task to be done.

BALANCED SYSTEM

We also would like to point out that to get a meaningful and effective mass transit system, balanced systems are required, and we broke them into three major categories. PRT, which is personalized rapid transit, a level of service that is better than an automobile and comparable in cost. Buses, and fixed rail systems. And about one-third on each. To give you some perspective on the cost effectiveness of these systems, however, the rail systems would account for 3 billion personal trips per year, PRT 9 billion, and buses 26. One might say why not have all buses? The problem would be that we would then provide seat-mile capacity but we would not have the passenger miles because the level of service would not be great enough or fast enough to at-

tract the riders. So this study, which actually took over a 10-year period and was based on some very significant studies by Booz Allen, was based on optimizing ridership, and not seat-mile capacity or seat-mile cost because it is riders that count. By 1999, $77 billion spread equally between PRT, bus, and rail. We will describe a bit what we mean by PRT. The others are familiar.

The rail system—there is a photo of the BART system—very appropriately applied in the bay area of San Francisco. The Del Monte Busway in Los Angeles. A PRT system demonstrated 2 years ago at Transpo. We recommend $77 billion spread over the next 16 years and for comparison the cumulative funding by 1980 would be $18 billion. This sounds like it is in the same order of magnitude as the $16 billion proposed by the administration transportation bill. I would like to point out it is different.

CAPITAL FUNDING PROPOSAL

This is dedicated capital funding for mass transit systems with no alternative to use any of the funds for operating subsidies. If we did, less system would be installed and in order to have reasonable insurance that the goal would be met this would have to be dedicated capital funds. You might ask why not increase it further and faster. We believe that the rate of increase shown here is about as much as reasonably can be expected, particularly of local governments in getting their planning done.

COMPARISON WITH OTHER COMMITMENTS

It is about the right level of expansion for the industry to respond to. Let us compare it with other commitments. The Federal commitments to highways as accumulated by 1976, about $80 billion. What we are proposing is a task similar to the Interstate Highway program.

The total cost of Federal highways was twice that. The Federal portion for interestate highways has now accumulated about $80 billion. The same thing on NASA, the Nation's commitment to space has accumulated $52 billion.

Another program and commitment of the same order as this proposed for mass transit. Spread out over the years we can see that proposed expenditures with highways, space, and mass transit are within our grasp and not unreasonable.

NEED FOR MASS TRANSIT

Why do we propose mass transit? There is an urgent need for balanced mobility, safety, resource allocation, and environment. Those sound like platitudes but they are indeed very, very important. For example, 26 percent of our population is too young, too old, or unable to use an automobile. The fatality on automobiles is much too high, and public mass transit is 10 times safer; 25 percent trips by mass transit would save 5,000 lives per year in 1990.

Fuel, again, is a very important consideration. Mass transit systems use about one-fifth to one-tenth as much fuel per passenger mile, again

passenger mile and not seat mile, as does the automobile. It is interesting to note that by 1990 the proposed mass transit systems will be saving over 10 billion gallons of fuel per year over the current 6 billion urban trips by mass transit.

So the $77 billion expenditure by itself will save 5,000 lives per year and 10 billion gallons of fuel per year.

It is interesting to note that the value of the fuel saved is about equal to the proposed rate of expenditure to provide the system. So there are others besides those who use mass transit who benefit mass transit; for example, the 13,000 pedestrians that are killed by automobile traffic will be beneficiaries to some degree with mass transit. The same thing on the use of material resources. Mass transit is about 10 times more efficient on use of materials. So by saving lives, fuel, and materials, mass transit benefits all sectors of the society, not just the users of mass transit. Another item is pollution. Clearly mass transit being much more effective on utilization of fuel is almost nonpolluting compared to other motor vehicles. How would this be accomplished?

First we whole heartedly endorse a national transportation policy which would address itself to the necessary goals, and then legislative initiative. With realistic planning, and it was mentioned several times today that planning and implementation is a very important aspect of providing adequate mass transit. Also balanced transportation system. There is no magic answer. It takes a combination to provide the optimum system and the most cost-effective transportation and urban mobility. This is a bit of a complicated slide but it is very important.

RELATION TO POPULATION DENSITY

We heard the reference this morning from Secretary Brinegar to population density, in which he admonished us to be cautious about heavy rail systems to be sure that they did. We note that 90 percent of the population of the 230 cities over 100,000 population in our country have a population density less than about 10,000.

So at least 90 percent of our per capita problem is in the medium to low density portion of our cities. The distribution of the cities obviously is similiar to that of the population. We must look at all of the major urban areas and not just the 15 or so that are looking at heavy rail transit systems. If we note the distribution of transit systems as a function of population density, you will see that below 7,000 people per square mile the most effective and the most desirable systems are PRT and buses, no rail transit at all.

As we analyze the cities in the country, according to our conclusions and analysis there is only about 15 of the 230 cities that can effectively use rail transit. Consequently we see a great need for greatly expanded bus service and PRT, the personalized rapid transit, which provides a better level of service than an automobile; 24 billion on PRT, 25 billion on rail, 28 billion on bus.

PROPOSED FUNDS

One can argue about the exact magnitude of these proposed funds and there will certainly be some gray areas. I think most important is that it is approximately one-third of each in cost. Unfortunately it is

not one-third of each as far as personal trips. The PRT is 9 million, rail would be 3 and bus 26. Again applied where they do the most good, that kind of ratio we think is required to do the most effective job: Balanced systems, PRT, bus and rail.

PRT SYSTEMS

Personalized rapid transit, the status of it is, that there were four demonstrated at Transpo 1972, many special-purpose systems operating. Denver and Las Vegas are planning specific installations. The industry is ready to respond. And the need and the applications are there. Only the planning and the funding remain. Here is Rohr PRT system, a 6-passenger cab, which, computer controlled, without a driver, goes directly from origin to destination on a thin automatic guideway giving point-to-point nonstop high-speed level of service.

Here is Otis Elevator Co.'s small PRT system. Ford Motor Co. also has a system, LTV—this is Bendix—LTV has a similar system now in operation at the new Dallas-Fort Worth Regional Airport, a very sophisticated and effective system, the Krauss-Maffei Magnetic System, a German company installing this in Toronto. This is the LTV system at Dallas-Fort Worth Regional Airport, fully automatic, non-labor-intensive.

It pays for itself out of the fare box. Westinghouse, Tampa, a similar installation by Westinghouse at Seattle. This is the Rohr system at the Houston Airport; this is five times faster than a moving sidewalk.

A PRT system proposed for Denver. The PRT system proposed for Las Vegas would take one directly from the hotel lobby to the airport lobby or directly from the hotel lobby to another hotel lobby or to the convention center. Fully air-conditioned, private, convenient and faster than any other mode of travel, including the automobile. The PRT system gives a high level of service because the walking access is planned to be one-fourth mile or less and covers a great area similar to that of a bus system. Transit buses we are familiar with. I will go through that rapidly.

BUS TRANSIT

Last year the bus industry was operating at half capacity and is in the process of doubling capacity despite lack of sustained order at this time.

So there is bus capacity in the country. This is the American Motors transbus, a funded program by DOT. The Rohr transbus is shown here, a higher level of service than any buses available today, particularly with the low floor one step into the bus; General Motors proposed transbus, very attractive, modern styling, comfortable and convenient.

Some other bus concepts that are in the development stage—Rail Rapid Transit we are familiar with, but we would like to review what the proposed expenditure would provide; 800 new route miles and 13,000 new vehicles between now and 1990. That about doubles the rail transit capacity. And there are places where, despite the great expense—there are places where rail is the most practical because of the very high traffic densities.

RAIL TRANSIT

The BART system in the bay area—by the way, the BART system, because it is fully regenerative in its electrical power, which means that the braking of the car as it comes to a stop generates power that is pumped back into the line—the BART system uses half as much electrical power as a system without that feature. And most of the systems in the country do not have it.

This is the Linden Wold Line in New Jersey, built by Budd with General Electric equipment in it.

The Boston streetcars built by Boeing-Vertol. Your own Washington Metro, the first cars being built now in our plant in Winder, Ga., and will be delivered in midyear. Tracked air-cushion vehicle, a special-purpose vehicle for minimum trip times from places like airport to airport and airport to the city center and ultimately intercity travel. The system cost is always of great concern and the cost is high.

PER-MILE COSTS

At grade, a system like BART costs $8 million per mile for double track. When it is elevated, the price goes up to about $15 million per mile. Subway is $30 million per mile. This is not just construction cost; this is stations, equipment, automatic train control, the entire system cost divided by the number of miles; so the total cost is $30 million per mile.

An elevated PRT system is only $6 million per mile, and in the medium- to light-density areas can provide a service capacity equal to that of a rail system.

Dedicated bus lanes, a very effective one. Again the Los Angeles-Del Monte busway, $4 million a mile.

CONCLUSION

To sum up, a very important item is operating costs; cost per passenger mile is of the order of 10 cents per mile. The fare for bus and rail normally will tolerate only about 5 cents per mile. Only the auto and the PRT show promise of paying for themselves out of the fare box because of the very high level of service.

The national commitment to mass transit, 25 percent by mass transit in 1990 is the proposal at a cost of $77 billion. We would recommend that legislation should set priorities, promote balanced systems and stabilize funding.

The cost of 25 percent trips by mass transit could be equivalent to 5 cents per gallon fuel tax, $22 per year per person, or one-half percent of our gross national product, or a task about equivalent of the interstate highway program.

All of these clearly are within our reach because we have accomplished a task similar to that in the past.

Mr. CHAIRMAN, this is a pleasure to appear before this committee and give you a few of our thoughts on mass transit and we would like to say that we clearly endorse a strong national transportation policy, and this policy should address the following areas for mass transit:

expedition and effective local planning, dedicated continuous funding, and last but not least, preferential treatment for balanced mass transit systems.

Mr. McFall. Thank you very much, Dr. Beck. We certainly appreciate your testimony and the effort of the Rohr Co. in preparing this statement. I know that it took a number of man-hours and a large amount of the company's resources. We appreciate it.

Mr. Beck. Thank you.

Mr. McFall. Do you feel the Secretary's statement contains sufficient explicit national goals, or have you had an opportunity to really study the Secretary's statement?

Mr. Beck. Not to study it in detail.

I would say in broad aspect, we would find no quarrel with it. I would like to express our concern of mixing capital funds with operating subsidies because if there is a certain goal that requires a certain capital funding, if the funds are made optional, then the goal will be optional.

Mr. McFall. You are now referring to his latest UTAP proposal.

Mr. Beck. Yes.

Mr. McFall. We would like to have you look at his statement, please, Dr. Beck, and give us some concise comments concerning that statement.

Mr. Beck. Be happy to do so.

Mr. McFall. We would also like to address the question whether you think DOT is providing sufficient direction and guidance with respect to where we are going in transportation.

Please make some comments with reference to this, also.

Mr. Beck. Very well.

[Comments on the Secretary's statement follows:]

Rohr Industries, Inc.,
Chula Vista, Calif., March 25, 1974.

Hon. John J. McFall,
Chairman, Transportation Appropriations Subcommittee, Congress of the United States, House of Representatives, Washington, D.C.

Dear Chairman McFall: Allow me once again to thank you for the opportunity to testify on National Transportation policy before the Transportation Appropriations Subcommittee. I wish to congratulate you, Mr. Chairman, on holding these hearings at a most crucial juncture in our transportation development. The following statement reflects my impressions of Secretary Brinegar's policy presentation, as you requested.

Secretary Brinegar served a very valuable purpose in summarizing the composite transportation picture in the Nation. The Secretary outlined a comprehensive legislative history of U.S. transportation since 1940. He then presented a cogent summary of the status of each major U.S. transportation mode. This type of comprehensive intermodal analysis is a welcome contrast to the single shot planning which has often characterized our transportation policy.

URBAN PUBLIC TRANSPORTATION

The Secretary in his summary of the current transportation situation makes a number of statements concerning urban public transportation which seem to indicate future policy trends. Mr. Brinegar states:

"In planning our transportation system for future growth, we must separate the need for physical expansion and improvement from the need for better management and utilization of existing structure."

On the following page he goes on to deal with mass transit:

"The solution here calls for better management of demand and more flexible utilization of equipment, as well as selected expansion of fixed facilities."

In another section the Secretary elaborates:

"In our judgment future solutions to the urban question problem now lie more in the direction of traffic management and improvements to public transportation (through such actions as peak-hour stretchouts, incentives to carpooling, exclusive bus lanes, etc.) than in simply adding more highways."

I am in strong agreement that coordinated, efficient management can greatly increase the effectiveness of transportation facilities now in use. However, as was pointed out in Rohr's testimony, the percentage of total urban trips accounted for mass transit since 1945 has declined from 45 percent to 7 percent, while auto and air travel have proliferated since World War II, mass transit has faltered. One major reason for this decline is the lack of capital investment in transit equipment over the past 20 years.

The Secretary also states:

"Except for our largest cities, the urban transportation problem is principally one of peak-hour capacity. During most of the day, the streets and, particularly the transit systems, are significantly underutilized. Less than 25 percent of the available transit seat-miles are actually in use."

Although a valid statement, it fails to take into account the condition of the equipment supplying those seat-miles. The average city bus is approximately 12 years old and the average transit car is over 20, with stations and roadbeds measured in decades. The Secretary's own statement outlines the critical imbalance of our transportation modes. The chart on page 52 of the Secretary's statement indicates that Federal funding for highways in the years 1973–75 has aproached $15 billion while transit funding for the same period is $3,326 million.

The preceding statements and the general "principles" which are outlined in the Secretary's "policy elements" echo a general reluctance to embark upon major capital systems development in the future. Such a policy would be repeating crucial errors of the past and reinforcing urban public transit as the weak link in our transportation chain.

The Secretary's statement evidences the administration's grasp of the transit problems facing our Nation's urbanized areas. However, we must not make the mistake of believing that traffic management and carpooling will fulfill the need of major systems development in our cities.

Needed is a clear plan to provide the continuous flow of capital funding required to meet specific short-range and long-range objectives. Such specific objectives have not yet been set.

Sincerely,

M. J. BECK.

Mr. MCFALL. Thank you very much, Dr. Beck. That is a very good statement.

Mr. BECK. It is our pleasure, sir.

TUESDAY, MARCH 5, 1974.

WITNESS

DR. WILLIAM J. RONAN, PRESIDENT, INSTITUTE FOR RAPID TRANSIT

Mr. MCFALL. Our next witness is Dr. Ronan, president of the Institute for Rapid Transit. Dr. Ronan, we are very glad to have you.

Dr. RONAN. Pleasure to be here.

Mr. MCFALL. We would be glad to have your statement at this time.

STATEMENT OF PRESIDENT OF THE IRT

Dr. RONAN. Mr. Chairman and members of the House Appropriations Subcommittee on Transportation, my name is William J. Ronan. I am the president of the Institute for Rapid Transit. Among the institutes members are the public agencies which operate every urban

rapid transit system existing in the United States, Canada, and Mexico. Our membership also includes representation from metropolitan areas throughout the country that are contributing or planning to build new urban public transportation systems. The public agencies—local, State, and Federal—who are members of the Institute for Rapid Transit also operate the Nation's largest urban bus systems.

I also am the chairman and chief executive officer of the State of New York's Metropolitan Transportation Authority and its constituent agencies. The MTA serves a 12-county area of the State of New York, encompassing 4,000 square miles and inhabited by some 12 million people, and operates a network of urban rapid transit and bus lines, suburban railroads, two general purpose airports, several highway bridges and two vehicular tunnels. In the Metropolitan Transportation Authority, the State of New York has created a mechanism for coordinating the plans, construction, operations and finances for our metropolitan area's public transportation network.

In addition to my position with the metropolitan transportation authority, I am the vice chairman of the board of commissioners of the Port Authority of New York and New Jersey. The port authority is a self-supporting corporate agency created in 1921 by treaty between the two States to plan and develop transportation and terminal facilities, and to promote the international and domestic commerce of the New York-New Jersey Port District. Within an approximate radius of 25 miles from the Statue of Liberty, the port authority operates airports, toll bridges and tunnels, bus and truck terminals, seaports, the World Trade Center, and the PATH rail rapid transit system. Under bistate legislation enacted last year, the port authority will undertake a major program to link the area's two international airports with New York City by rail and to improve suburban service between New Jersey and New York.

I am pleased to be able to speak today on the subject of our need for a national transportation plan. Your committee's interest in this subject is a welcome development, since there is an obvious relationship between congressional appropriations and the working out of a national transportation plan. Discussion of the need for a plan is particularly timely in view of the historic transition in transportation trends which seems to be underway in the Nation. In their legislative objectives for this year, the two associations, ATA and IRT, which reflect the interests of urban transportation, called for the development of a national urban transit plan and policy. Such a plan for urban transit must be an integral part of an overall scheme for transportation is a continuum and not a series of isolated moves. The longest international journey begins at the local transportation scene. But, in line with our primary interests, I would like to direct my discussion principally to the urban transportation area.

LOCAL-FEDERAL PARTNERSHIP IN PLANNING

To call for a national urban transit plan does not imply that urban transit planning has not been going on. Quite the contrary, the planning effort that has gone into this field stands very well compared to that in any government program.

Over the past decade, local, State, and regional agencies working many of them prior to, and most all under various Federal legislative mandates, have undertaken increasingly sophisticated planning efforts in the Nation's urban areas. The local areas have responded to the Federal requirements with broad-scale regional planning to define developmental needs, to coordinate transportation programs with other influences on urban development, and to set priorities within and among the programs underway. This system's planning effort carries over into project planning, where every transportation proposal must not only be accepted as part of a network of regional needs but must also gain local acceptance through an arduous process of public hearings and governmental approvals.

Examples of the complexity and sophistication of this overall process abound in every metropolitan area. In New York, for example, I can point to the Second Avenue subway and the related program of transit improvements now being undertaken by the Metropolitan Transportation Authority. Bringing this construction program to fruition has involved planning and policy inputs over many years. It was an integral part of the tristate (New York, New Jersey, Connecticut) regional planning commission's transportation plan. It was adopted by the New York State Legislature when it approved the New York State mass transit portion, and it was adopted by the city of New York, its city planning commission, and its city board of estimate. It has had Federal approval as well. General studies of optimum route alinements, approvals by the many layers of government and detailed planning of every project element including review of its potential impact on surrounding development are finally being realized in long-needed and long-awaited construction.

Not every project is as complex as Second Avenue, but many approach it. The proposed extension of the service of the Port Authority Trans-Hudson (PATH) rail line to Newark's International Airport and beyond into New Jersey suburban territory would seem relatively simple, that is, bringing existing rail services generally over existing rail rights-of-way. To date, the project, which is not yet into construction, has involved developing close working and planning liaison among 2 States, 3 counties, 10 municipalities, a regional planning agency, and at least 4 agencies of the U.S. Department of Transportation. Before the project can move forward, a mutually agreeable assessment of the relationships between the project proposal and each affected agency's developmental goals, policies, and plans must be arrived at through the regional planning process which the Federal agencies have encouraged.

One final example in the New York area is the planning effort related to possible reconstruction of the city's West Side Highway. This is the highway which is now closed because it was falling down.

Whatever its outcome, it has set a new level of sophistication in the involvement of multiple jurisdiction, including the precedent of funding studies and plans by various local bodies who are essentially opposed to the project.

Thus, I think it is clear that there is a multitude of regional and federally sponsored planning underway in our metropolitan areas. How does this relate to the need for a national transportation plan?

When the Department of Transportation was created in 1967, there was expectation that it would provide the appropriate instrument at the Federal level for gathering these regional efforts, assessing them, and coordinating them into national policies and plans. While there has been significant progress in the Federal support for mass transit, for which we are indeed thankful, at times we have reason to question whether the output of our federally mandated regional planning effort is really being adequately read in Washington. While we certainly, in our field, understand budgetary stringencies we do not believe the Federal Government should back away from the planning efforts it itself has sponsored and required. We are concerned that budgetary considerations alone, rather than planning determinations, will be the primary influence in the decisionmaking process.

Transportation operates within an area almost totally bounded by policies which the Federal Government has established and controlled. Transportation planning must take into account (and indeed often try to overcome) the effects of Federal policy in the housing area, which led to the dispersal of our metropolitan areas; in the environmental area, where clean air requirements are establishing heavy new demands on urban transport operations; and now in the energy area, where public transport again is being called on the Nation's mobility reserve. With so much of the planning environment determined by Federal policies, and with transportation so critical to the achievement of societal goals in the areas of social mobility, urban development, proper environment and energy self-sufficiency, the Federal Government, we believe, should take a strong, positive policy in guiding transportation developments.

NATIONAL TRANSPORTATION PLANNING

The Federal Government has in the past done effective work in establishing programs and planning for specific transportation needs. The interstate highway program, for example, is in existence today because the Federal Government defined a need and established a program to meet that need. While we may quarrel with some of the impacts of the highway program, especially in urban areas, its overall influence has been positive and clearly it would not have been effectively carried out without national direction. One can imagine what a supposed national system of interstate highways would have been like if its design, its standards, and its location had been left totally to State and local jurisdictions.

It is for this reason that we have urged that any long-term legislation in the urban mass transit area should incorporate, along with State and local options, a requirement for development of a national policy and plan for public transport. Both the administration and the conference committee bills now before the Congress grant permission to use significant funds optionally for operating or capital purposes. This is needed and is welcome.

Operating assistance is essential to help keep fares down, to hold ridership and gain ridership for public transport. And operating assistance should be applied where the ridership is and where the ridership will be. That is why the conference bill's formula of 50 percent population, 25 percent ridership, and 25 percent transit vehicle miles,

is much fairer than the straight population approach of the administration's bill. The conference bill is admittedly an emergency measure and it should be passed to save our present transit situation and give the Congress and the administration time to work out the longer-range program.

The administration's proposal, which is long-range, represents a distinct advance, particularly in its recognition of the validity of the use of Federal funds for operating assistance in addition to capital purposes. By permitting an increase in the optional use of highway funds for mass transportation, at local option, it also moves in the right direction. The funding level is somewhat improved. However, the capital needs for public transport in the years ahead is substantially greater than the administration's proposal would meet. In our judgment, the so-called UMTA "discretionary fund" that is, the capital fund, should be increased substantially to insure that the Nation builds a solid mass transit system. Also the total looking ahead of a $2 billion optional highway transit capital and operating fund—is hardly adequate to meet the combined needs indicated for the future.

It is vital for the Congress to insure that current capital needs for existing and developing systems are met and that the Nation can look to an augmented and improved public transport system. Accordingly, any long-term legislation should incorporate along with State and local options a requirement for development of a national policy and plan for public transport.

As each of the modes relates together in the intermodal continuum of travel, urban transportation cannot be thought of as a completely separate item from intercity transportation. The journey of a thousand miles begins with a single step, and the air trip of many thousand miles may begin with an impossible urban taxi ride to the airport. All the airport planning and investment in the world will be of little value if the urban transportation systems cannot deliver passengers to the airports. And this is the rule, rather than the exception, today.

With so much yet to be done, our emphasis should be on getting ahead with development along a specific planned course and encouraging good coordination, rather than subjecting every decision to long, intensive, academic analyses of the optimum system.

A NATIONAL URBAN TRANSIT PLAN AND POLICY

In order to give development in the area of urban transportation we feel strongly that a national urban transit plan and policy must be developed. We hope that this would reflect the joint efforts of the Congress and the administration, with extensive regional input, so that its implementation could become a matter of national commitment. Such a plan could complement the modal programs already in existence for highways, airways, intercity rail and other transportation elements. As programs to develop each of these modes move forward, and as public transportation catches up from its decades of arrested progress, the U.S. Department of Transportation will be able to operate as a greater influence for intermodal analysis and decisionmaking.

The concept and the content of a national urban transit plan and policy will, by necessity, be more than lines on a map. It should seek to establish underlying standards for service, for financing and for institutional relationships. With the Federal interest in the transportation needs of the majority of the people who live in metropolitan areas, the plan should set forth guidelines as to area coverage for urban transportation, modal utilization, and standards for both design and levels of service elements which have long made the highway network truly national in scope but with very significant State, regional, and local input.

Within the urban transit plan, a realistic effort should be undertaken to establish criteria truly reflecting the place of the various modes in meeting regional needs and national goals. There are obvious criteria which must be reviewed in every area and which can, with some flexibility to reflect local conditions, yet be nationally applicable. Standards of density, of traffic volume, of employment concentration, and the like would appear to be possible. In fact, the Institute for Rapid Transit and the American Transit Association have themselves agreed to joint sponsorship and financing of an industry survey of those criteria now in common use among metropolitan areas of various sizes around the country. We are looking at the foreign experience as well. We hope that this survey will demonstrate points of commonality and threshold values for various types of transit as developed through federally sponsored planning done in every metropolitan area. We will be happy to share the results of this survey with you Mr. Chairman, and with the Department of Transportation. In the Federal Highway Act of 1973, the Congress directed the Department to carry out studies of the needs for and financing of public mass transportation in urban areas and we would hope that the formal studies would carry our initial effort to greater depth.

In relating physical criteria to a national plan, however, there are serious cautions I must raise. Looking at the history of many of the criteria now in common use, particularly those which focus on minimum cost to perform particular current transportation functions, it is apparent that these are based on outdated research. Most of the basic input to the development of these criteria grew out of academic projects and regional highway planning studies of the late 1950's and early 1960's. Since that time, this country has undergone a great awakening as to the impact of automobile dependency on the shape of urban development, on environmental conditions and energy consumption. All of these factors must be properly reflected, not just criteria of density, cost and the like, in making National urban transit planning decisions. To the extent these factors can be properly quantified and entered into the planning process, we encourage their use. But I urge caution in the use of mechanistic cost/benefit formulas unrelated to regional dynamics and development. Had we waited for such cost-benefit formulas for density to materialize before building our rapid transit system in New York, where would we be? The development of New York City, or Boston, or to take a more recent example, of Toronto reffects a planning decision to proceed with urban public transportation investment in order to shape development, not to catch up with it. The shapeless development of Los Angeles and many other

cities of the automotive age and of typical American suburbia reflects a different set of decisions, or nondecisions, for which I fear we will soon be paying the price as energy resources remain scarce and movement in suburbia becomes increasingly difficult. Environmental and developmental considerations were clearly the basis for the San Francisco area's decision to proceed—without any prospect at that time for great Federal assistance—on the development of the BART system. Costs, densities, and the like must enter into the decision particularly as the Federal Government assumes an increasingly important role in financing but I am certain that many public transit projects now successfully in operation, including those in New York City, could not have met the initial thresholds of those criteria that now set forth as minimal for rail transit.

The contents of a national urban transit plan must go beyond the policy statements set forth to date by the Department. Difficult as it may be, the plan must recognize and provide guidance for capital needs, and not just focus on the so-called low-capital intensive area. No one is ignoring the possibilities inherent in low-capital projects but there must be recognition of capital needs as well as a balance achieved between the two. Explicit statements of proven capital needs over time can provide the basis for incremental development of facilities as the demand develops. In every country but the United States, the construction of rapid transit is viewed as an ongoing process. A line is begun in the denser downtown areas and extended a few miles at a time, year after year, until areawide coverage is achieved. New lines built for light rail systems (modern streetcar-type operations using underground tracks or subways and other exclusive rights-of-way) are converted to traditional rapid transit standards as the traffic warrants. A long-term plan with at least tentative agreement on its viability can make this possible here as well.

Elements of the plan must also include definition of the institutional and financial arrangements necessary to preserve and improve public transit as one of the public services needed for a functioning urban society. All levels of government have a stake in achieving these broader goals which urban transit helps us to reach. It appears that we are at a point of agreement that all levels should contribute toward both capital development and operating expenses on some basis. The national plan should better define their relative roles and provide the basis for legislation to carry out this division of responsibilities.

Development of a national urban transit plan and policy should also serve to identify and resolve present conflicts and inconsistencies between Federal agencies and even between units within the Department of Transportation on key policy issues. For example, a situation exists in urban areas today where the environmental goals of the Federal EPA, as reflected in air quality implementation plans, call for a policy of low transit fares and increased auto tolls. These goals are also subscribed to in policy statements by the Department of Transportation and its Urban Mass Transportation Administration. The Interstate Commerce Commission, in a break from traditional regulatory practice and law, has accepted this policy, even where transit operators have sought fare increases to achieve financial stability, also within the same Department of Transportation, apparently re-

jects these arguments and suggests continuation of its traditional position against tolls, and against increasing tolls even if higher fares and more pollution by auto traffic increases will result. Local transportation officials are obviously in no position to act decisively in a difficult and complex area in the face of such conflicting guidance.

Our further observation on the Federal role: Today the Federal Government is in the position of having fostered regional plans—and having accepted them as adequate for Federal purposes. These plans, and the agencies which developed them, are the clearance points for Federal grants. And yet, having encouraged such plans and having accepted them, there are now Federal agencies that are backing off from key elements when it comes to actual Federal support.

Also, I should note that our concern for public transit is not limited to the urban areas. The need for better means of mobility and less dependency on the private automobile is equally great in rural and semirural areas. The near disappearance of public transit serving these areas puts them at perhaps even a greater disadvantage, and we urge that Congress and the administration follow through on legislated studies and demonstrations of ways to meet these urgent needs.

In conclusion, I would reiterate our hope that Congress and the administration, together with States and local governments, can work together in developing a realistic national plan. This process will, however, take time to do well and should not be the basis for delay. In this context, all of us in urban transit are, I am sure, pleased with the House-Senate conference committee action on the Emergency Urban Mass Transportation Assistance Act of 1974. While each of us could undoubtedly suggest refinements for the long term, we are heartened by the Congress recognition of the emergency we face. We wholeheartedly endorse its passage and hope that the President will approve it. The principles it establishes are in line with the needed national planning effort and it will buy us time and survival while that effort is refined, hoping for its early enactment.

We will soon be seeking from your committee a level of appropriations commensurate with both the emergency need and the reasonable steps toward accomplishing our long term, we trust mutual goals.

Thank you, Mr. Chairman.

NATIONAL URBAN MASS TRANSIT PLAN

Mr. McFall. Thank you, Dr. Ronan.

You suggest a national urban mass transit plan. Are you opposed to a national transportation policy, or do you think that the urgency of a national urban transit plan is so great that we ought not to waste our time on the rest?

Dr. Ronan. No. We would think that these things should go coterminusly, Mr. Chairman. We are giving our emphasis to what we would say would be the urban mass transit portion of what we would say would be the overall national transportation policy and plan.

As a matter of fact, we think the great weakness that confronts us now is that we do not have a national policy and a national plan in terms of transportation, to begin with, and that this impacts upon us in the urban field as well, in fact very seriously.

DIVISION OF OPERATING COSTS

Mr. McFALL. How do you think operating costs for mass transit should be divided?

What would a permanent plan contain?

Dr. RONAN. With respect to the contributions to be made by the various levels of government, we would take this position generally: First of all, we believe that the users should pay part of the cost of the service. Second, we believe that the burden of picking up the financial assistance needed in order to have a viable service beyond what the user should be called upon to pay, should be divided between the States and the local and Federal Governments.

We believe that the local contribution element should be an important aspect of this, because local involvement will help to assure, on the part of those of us operating the systems, that we have local interest and commitment, which is very important, and that there is also the same local interest and commitment to work with us in maintaining the efficiency and viability, of the system.

We tend to favor some kind of a recognition which has to be worked out—it is not that easy in an emergency piece of legislation—for what we would call the local and State effort.

Just to try to put that in terms of a percentage at this time, I do not think is really possible without taking a good hard look at how this would impact various areas: Those that have highly developed transit systems and those that have the embryo transit systems and those that have none but will be moving toward them in terms of the energy crisis.

We believe there must be a recognition of ridership, and this is our big concern about the approach in the administration bill, which, doing it on the basis of population we think is counterproductive. The ridership element and the number of vehicle miles traveled are crucial elements in calculating any such assistance. In addition to a quantum for population we think there ought to be a quantum for local effort as well.

This will take some time to devise in order to have equity throughout the country as there are obviously different stages of development and different stages of concentration of use. We are against using the population factor alone in determining the amount one would receive for operating assistance. It would be tantamount, as I have said before, to working out the wheat subsidy on the basis of population, in which case New York and California would have gotten the lion's share of the wheat subsidy and I am not sure how Kansas, Nebraska, Colorado would have fared. It just would not make any sense. These would be our general observations, Mr. Chairman.

FIXED RAIL SYSTEMS

Mr. McFALL. In what areas do you feel fixed rail systems would provide the most efficient and cost-effective means of mass transit?

Dr. RONAN. I would say that these fixed rail systems should be devised in areas where either you expect or you want to develop density. And the history of many fixed rail systems which people currently do not pay enough regard to, we think, is that in areas which

are having obvious intensive growth of population, the building of fixed rail systems was an instrument for concentration of population and for, therefore, achieving a density and achieving a type of development which, in terms of transport, maximizes the use of land in a way in which the highway building, road building period of the last couple of decades, did not do it, in fact scattered development over the entire landscape. So we think that attention has to be paid to the dynamics of development and in obvious areas of growth, if we can just speculate for a moment.

If Los Angeles had really started out not with just becoming the city of the automotive age and spreading over the acreage and acreage it has, but had started with a definite policy of developing rapid transit in order to help channel development, you would have a very different complex of settlement in that area than you have today.

The old Pacific Electric was not what I am talking about, although that had its value as of the time.

Mr. McFall. There seems to be some evidence that a group of companies bought up the old mass transit system in Los Angeles and produced the kind of system that Los Angeles has now. Hopefully, a national transportation policy would prevent that sort of occurrence in the future.

Were you able to hear Secretary Brinegar's statement this morning?

Dr. Ronan. No; I was not and I have not had a chance to really read it.

Mr. McFall. We would like for you to get a copy of that, Dr. Ronan, and let us have your opinion or comments on his statement.

Dr. Ronan. I would be delighted to do so.

[Mr. Ronan's written comments will be submitted to the committee at a later date.]

Mr. McFall. Do you have any questions, Mr. Conte?

DOT LEGISLATION ON MASS TRANSIT

Mr. Conte. No; except Dr. Roman, did you see the testimony offered by Secretary Brinegar with regard to his bill on mass transit?

Dr. Ronan. I have seen the bill and I have seen some of his commentary on it, yes.

Mr. Conte. Do you endorse that legislation?

Dr. Ronan. Well, I take exception to some parts of it and I endorse other parts of it.

I think the acceptance by the Federal Government of the use of some Federal funds for operating assistance is salutary. And moving toward a transportation approach, that is a transportation fund and so on, rather than a modal fund or series of funds over the long haul, I think is appropriate and the increased funding level, to the extent it does represent an increase, is advantageous.

I am concerned about the projected level of funding, concerned about—and when I say I, I mean we in the industry are—not being adequate for the purposes for which it is presumably designed and, second, that the formula presented for assistance to urban transit in operations and maintenance is counterproductive, stressing population as it does, which would work against those communities that have

developed transit systems and really not solve their problems or relieve their problems substantially.

We think the conference committee's approach of the 50 percent population, 25 percent ridership and 25 percent vehicle miles makes a lot more sense and will be effective in meeting the immediate emergency.

The other aspect that concerns us and is the burden of some of the remarks that I have made here today is that in going down the road of giving a greater option to State and local authorities as to whether they wish to use the moneys for capital or operating purposes, we raise a caution, a very important caution, that there be enough reserved in the so-called discretionary fund under the Secretary's bill, the administration's bill, to insure that we will be able to build the kind of public transport system the Nation needs, and we believe that the Nation needs public transport facilities for national development just as, for regional development, the States and local areas need it.

And using the example of the interstate highway program, we do not think you would have had a national program, a national series of highways had the vast amount of Federal money just been made optional, available to States and local governments to use as they saw fit, without any design of a national plan.

We think that so much of the economy of the country takes place, the production and distribution, travel, movement of goods, within metropolitan areas that Federal Government must have a concern and must be sure that what is going to be built, what is going to be developed, what is going to run is productive for the Nation as well as just for the locality.

It is conceivable we could have great wastage of resources if this were not the case.

STATISTICAL INFORMATION ON MASS TRANSIT SYSTEMS

Mr. CONTE. Very impressive statement.

Before the energy crunch, have you any statistics on cities in the United States having mass transit systems and also abroad, in foreign countries—concerning usage by the people?

Dr. RONAN. We could furnish you very detailed statistics on that. Let me summarize.

Within the country, interestingly enough within the last year or so, the decline which had been taking place, there will be a very substantial and continuing decline in the use of public transport, appeared to be bottoming out and in fact did bottom out before the energy crisis.

In my own area, the New York metropolitan area, interestingly on the commuter branches, New Haven, Harlem and Hudson, PATH, Staten Island and Rapid Transit, the decline was in the neighborhood of some 4 percent a year bottomed out in the summer or, at the latest, in October–November, before the gasoline shortage hit and was moving up at a rather substantial rate. Since the energy crisis, that has been accelerated.

We are now carrying on the commuter railroads and the various enterprises I indicated, somewhere in the neighborhood of between 6 and 7 and it looks as if it may go as high as 10 percent on the Harlem and Hudson Divisions this year more than last year, a definite upturn.

With the crisis also, the subways which had been continuing in a decline and a decline accentuated by the loss of jobs out of New York City—they lost some 260,000 jobs in 3 years according to the U.S. Census Bureau and the Department of Labor Statistics—that subway ridership, and New York City bus ridership together, had been declining and it now appears that that has bottomed out and is evening up.

Now these figures that I am giving you are weekday ridership Monday through Friday. If we throw in the Sunday figures, we get a different reaction because we have had a half-fare program on Sundays in the New York metropolitan area on all of our facilities, subways, buses, commuter railroads, et cetera.

The response of the public has been fantastic. We have carried in some 11 weeks close to 6.9 million some-odd additional riders, averaging in February about 620,000 additional riders. That of course has boosted the ridership figures way up. That is a combination of the half-fare, but also closed gasoline stations and nonavailability of fuel. It is hard to tell how much of the input is the lower fare and how much is the sheer lack of gasoline.

SUBSIDIES FOR OPERATING EXPENSES

Mr. CONTE. One last question, if you please.

I come from a substantially rural area of Massachusetts. Nevertheless, I have been a great champion in Congress for mass transit. I believe it is very important. I think this is one of our salvations. But I have yet to agree with paying subsidies for operating expenses.

You may ask me why. I have always fought in the Congress against subsidies: I fought agricultural subsidies because I would rather have the farmers go out there in the free marketplace and let supply and demand work itself out; I fought the SST because there was a Government subsidy to private industry involved; I thought if the SST was worth its salt, it should go it alone; I fought the subsidy to Lockheed. I have been very upset about this subsidy to urban mass transit.

I've had no problem voting millions of dollars for transportation in this country, because I think it is needed. But what bothers me is—and I think it is going to come back to haunt us—I think this is going to be an endless pit; I think that as sure as labor knows this money is coming from the Federal Government, they are going to go on strike; they are going to cripple these mass transit systems just as they have done in New York City in years past.

You will recall that not too many years ago they often would go on strike at Christmastime, during peak times of the year when mass transit was badly needed. Labor is going to say, well, this money is coming now from the Federal Government. This is going to take the lid off, take the heat off of you and people like you throughout the country who are involved in mass transit.

Well, this bothers me; I cannot seem to get it off my mind. Dr. Ronan, I wonder if you would care to comment on what I've said.

Dr. RONAN. Yes, I would.

I would say, first of all, and I expressed our appreciation to the chairman for his support and leadership and I would like to express our support to you for the support you have given us in trying to build a better transit system.

Mr. CONTE. Thank you.

Dr. RONAN. I would have to say this, and the concern you express is expressed by others and seriously expressed by others.

Now, having been on the firing line in public transport for quite a number of years, I would say that there is really no reason to fear in terms of what I would call public operating assistance.

First of all, while I would like to think you would be taking the heat off of us in terms of labor negotiation, you would not be, because there has been no level of assistance projected which would enable us to be profligate with the moneys that would be available. It would take away from us the dire necessity to raise fears if the funds are not forthcoming. On the contrary, I have found now, and we have had assistance of one form or another from the city of New York and the State of New York in more recent years supporting our public transport, and I would submit that our labor settlements have been as equitable as almost any industry you would like to check with, in fact very modest by comparison with a great many and very modest by comparison with some of those I would say, with all due respect, dictated by the Congress of the United States.

We have done this because we are under the pressure for increased efficiency and economy in operation.

Let me document it.

In the subway settlements, the last two which I was involved in, the rate of compensation increase was certainly well within the bounds of what would be called national guidelines, in fact had to be asserted to be so, proven to be so in terms of the Pay Board and before that time in terms of what was considered appropriate on the national scene.

In addition to that, we have introduced for the first time in New York City's history, and I think one of the few times in the history of railroading, productivity clauses into our transit contracts. And we have said, literally, millions of dollars in the last 2 years in our transit shops and our transit operations in New York because of this productivity.

When I speak of productivity, I mean we have eliminated overtimes, we have eliminated positions, we have improved operating shop procedures, and the like.

On the Long Island Railroad we have done the same thing, the Port Authority Trans-Hudson Railroad the same thing. In those cases it took a strike of 52 days in one and 63 days in the other, and I know of no private management who stood up and insisted on productivity the way these two organizations stood up on those occasions. So I would say you can place confidence in the transit operator. The operator I think is more concerned that legislation may take away from many collective bargaining elements which are essential, and I think

this is very important in the writing of legislation, that those things that are appropriately left to collective bargaining be left to the operators to be able to use, because we have had our hands tied in numbers of situations.

Some of us have been very concerned about certain settlements which have been made by the Congress in its wisdom and how they impact upon our operations. Or certain other pieces of legislation wherein certain protective elements are written to protect lab or—we have no objection certainly to protecting people against unemployment, particularly people who have been long employed who might be displaced—but not to get it to the point where it is inhibiting us from doing the kind of job the taxpayer insists we should do and we want to do.

IMPACT OF SUBSIDIES ON COLLECTIVE BARGAINING

Mr. CONTE. I have always opposed those bills. I strongly believe, as a former union man, in collective bargaining. Your statement almost makes my case. You know you are keeping your feet to the fire with regard to New York City, because if you pour a lot of money in there, then the mayor—and the city council—are going to have to raise real estate taxes and have a lot of irate taxpayers on their backs. Whereas, here, we spend money in another way; we simply keep increasing the national debt rather than raising taxes.

It is a little easier for the Congress.

Dr. RONAN. I appreciate your point. I would like to comment on that, though. I think it relates to a reply that I made to the chairman.

I think very important in any long-term Federal operating assistance is an insistence by the Federal Government on local contributions and local effort, because I think this adds a very important ingredient to helping to keep the kind of phenomenon you are talking about from happening.

Mr. CONTE. Good point.

Thank you very much for a fine presentation.

Mr. MCFALL. Thank you, Dr. Ronan.

Dr. RONAN. Thank you.

TUESDAY, MARCH 5, 1974.

WITNESSES

NELLO L. TEER, JR., PRESIDENT, ASSOCIATED GENERAL CONTRACTORS OF AMERICA

ROGER D. ALLAN, DIRECTOR, HIGHWAY DIVISION, ASSOCIATED GENERAL CONTRACTORS OF AMERICA

Mr. MCFALL. Our next witnesses are Mr. Nello L. Teer, Jr., president, Associated General Contractors of America, and Mr. Roger D. Allan, director, highway division, Associated Contractors of America.

We are very glad to have you with us, Mr. Teer. We would be glad to hear your statement at this time.

STATEMENT OF PRESIDENT OF ASSOCIATED GENERAL CONTRACTORS

Mr. TEER. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, I am pleased to have this opportunity to appear before you to discuss the Nation's transportation policy development.

My name is Nello L. Teer, Jr.; I am president of the Associated General Contractors of America. I am also president of the Nello L. Teer Co., headquartered in Durham, N.C.

My company performs building, heavy, and highway construction work. We have done highway work throughout the country and in some foreign countries.

I am here today, however, as the spokesman for AGC, which represents some 9,500 general contractors engaged in all aspects of general construction. As such we have a broad appreciation of and an interest in all modes of transportation. We always point out that whatever is to be constructed, our members are able to do it.

Nevertheless, over the years we have been strongly highway oriented. We have vigorously supported the highway trust fund and have been quick to mount opposition when efforts have been made to subvert the purposes of this fund. We continue to believe this is the best way to provide the Nation's highway needs—and they are many.

At the same time, we recognize that highways alone will not solve our transportation problems. Our organization's transportation policy position, reaffirmed as recently as last September, notes in part that we "recognize the Nation's need for complementing modes of transportation systems designed and constructed as nearly as possible to serve all the transportation needs of all the people."

These are nice words. We have heard them before. They are synonymous with saying we believe in a balanced transportation system.

We badly need a master plan to arrive at such a system as equitably as possible. This is what you are addressing yourselves to and we commend you for it.

Developing a national transportation plan is a tremendous task. We are not prepared—nor would we presume to suggest—how to create a methodology for such a plan. Our purpose today will be threefold: To describe to you the problems the construction industry in general and highway contractors in particular are having because of ill-defined and undefined priorities; to tell you why we feel the construction industry should be involved in the developmental process; and to encourage attempts to eliminate disharmony between advocates of the various means of transportation.

Like other industries, construction thrives best when management can foresee clear growth and investment opportunities. Obviously this is difficult under the best circumstances. However certain guideposts must be set out. The corporate planner relies on the policy of his management in order to set forth his objectives. Construction, likewise, is greatly benefited—and in turn so is the Nation's economy—by a clearly defined national policy.

The greatest public works program in the Nation's history—the Defense and Interstate Highway System—is nearing an end. In building this system, contractors were able to gear up and work in the most efficient manner possible. Despite all the criticism that this program has received of late, it can be said that it has truly benefited all of the American people in one way or another.

We have built a great industry. We have constructed a tremendous highway network. This network itself must be protected and maintained. A sustained and balanced transportation plan is long overdue. Every American has a stake in this plan. Obviously this includes industrial and trade organizations such as the one I represent.

We need to be brought into this planning process. As ideas are put to paper, as programs are outlined, as pros and cons are discussed, we need to be consulted.

Too often we have been called in after a plan is well along the way toward completion to have it described to us. We are not asked for advice nor are we always asked in advance to support an idea. We are told about it, and have to make a fast assessment in order to protect our own interests.

This is no way to run a transportation system.

As I have said, our principal interest is roads. I recognize that others have their own self-interests and will speak for them. I only want to say that in defending, supporting, and pointing out America's road needs we speak as builders of all transportation systems and we speak as Americans concerned for the needs for all citizens.

Surveys and reports to which we subscribe do not support the contention that mass transit will answer all our needs. Interviews of newspaper editors made by professional members of the road information program indicate that many editors and the constituents they represent believe in roads and want to see road improvement.

There can be little argument that the Nation's roads need a lot of improvement. According to Department of Transportation figures, 5 out of every 6 miles of arterial highways will need to be worked on before 1990. Nearly 285,000 miles will require resurfacing, 140,000 miles should be widened, and about 400,000 miles will need reconstruction or additional lanes, or both. Some 92,500 miles should be new arterial highways—about one-third in urban areas. The bill for this work will come to some $600 billion.

Now the highway trust fund is a few short years from reaching its legal expiration date of September 30, 1977. Serious thought should be given to extending this. Instead, the best reading we can get is that this administration would like to see the trust fund die. They may be under the misimpression that the highway trust fund was created to build only the Interstate Highway System. Since it appears that less money is spent than the fund generates, there is a belief, too, that the fund has a surplus.

Both are misconceptions. The fund pays for a good deal more than the interstate, much of it going for rural road development. Instead of being in surplus, if all unpaid obligations had to be met today, the trust fund would be more than half a billion dollars in deficit.

The point is that despite the "reordering of priorities" that seems dictated by the energy crisis, despite the cry of those who say we are paving over the country—which we obviously are not, despite the vigorous call of those who say "spend more for mass transit"—despite all these our Nation's roads must not be neglected in the belief that other forms of transportation can be a highway substitute.

Roads serve people every hour of every day and they should have a top priority on funds. Our national transportation policy should

not come down to a question of roads versus transit, or railroads versus waterways, or roads versus railroads.

What I am saying is that we cannot allow our transportation needs to be dictated by a few major city newspapers. I am not suggesting they are, but I do believe that the longer we go along without a national transportation policy the faster we will be drifting toward a situation in which policy is based on emotion. misinformation, and shortsighted, politically motivated judgment.

I do not want to be overly critical. Progress has been made toward the development of a transportation policy. Much hard and creative work has been perfromed by many people in many organizations. Excellent reports have been prepared and are available for study. Legislation has been proposed. Hearings such as this help to give us some benchmarks and permit organizations such as the Associated General Contractors to be heard and to present their views.

Sadly, reports and hearings and legislation quickly get out of date. We should not have to update something that is no more than a report. What we should be implementing—and updating—is a policy.

In setting policy you are going to find that there is no way, short of appeasement, of satisfying various transportation critics.

It would be folly to let our highway system get worn out and outmoded in an effort to appease those who want a perfect, clean environment, or those who think highways consume more energy than other forms of travel or transportation, or those people in large urban areas who want those in less populated areas to subsidize their daily commute to work.

It has become fashionable to concede that "the energy shortage has caused a shift in national priorities." We should adjust this to "now there is need for rational priorities."

The basic national transportation policy must be concerned with broad procedures rather than specific formulation. Within the guidelines the Federal Government would set down, individual States must be able to write a State plan that would conform to its needs and still be harmonious with the plans of neighboring States.

We must avoid—as is happening in Iowa—the situation wherein a State legislature is trying to set up a Department of Transportation without a clear understanding of how such a department would function.

We cannot afford to overcompensate one form of transportation over another. Such an action can only lead to chaos, animosity, and serious expensive mistakes.

With small victories for one form of transportation or another we may end up saying as did ancient King Pyrrus, "One more such victory and we are undone."

Thank you, sir.

Mr. McFall. Thank you very much, Mr. Teer, We are glad to have your testimony.

We would like to have you take a look at what the Secretary said this morning and have your comments concerning that testimony.

Mr. Teer. We would like to do that, sir.

Mr. McFall. We will put that in the record along with your statement today.

Mr. TEER. Thank you.

[Mr. Teer's written comments will be submitted to the committee at a later date.]

TUESDAY, MARCH 5, 1974.

WITNESS

HARRY PARRISH, CHIEF, DIVISION OF MASS TRANSPORTATION, CALIFORNIA DEPARTMENT OF TRANSPORTATION

Mr. MCFALL. Our next witness is Mr. Harry Parrish. We are glad to have before us the chief of the division of mass transportation from the great State of California.

Mr. PARRISH. Pleasure to be here, sir, and also to be a fellow Californian.

Mr. MCFALL. Go right ahead. We would like to have your comments.

STATEMENT OF CHIEF OF DIVISION OF MASS TRANSPORTATION, CALIFORNIA DEPARTMENT OF TRANSPORTATION

Mr. PARRISH. Thank you, sir.

My testimony is relatively brief. I must say that I was pleased, as you were, this morning to hear the Secretary's presentation. I agree it was a rather comprehensive overview of where we are.

I think my own presentation points out some shortcomings at least in those areas that the Secretary indicated there were programs. Whether those programs are policy at this point in time, I am not sure.

I think every program is a reflection of some policy at least.

Mr. Chairman, distinguished members of this committee, may I briefly express my appreciation for this opportunity to present to you some thoughts and suggestions concerning the very difficult question of surface transportation, particularly in our urban areas. I say it that way because that is where our real problems continue to be, a situation made urgent by social, economic, and environmental concerns resulting from a heavily weighted, highway-oriented national transportation policy—now made more urgent by a not too short term fuel shortage. Perhaps now we will seriously begin to realize how basic transportation is to all forms of human activity. That realization can also be a blessing because it will force us to seek more ways to get more from our transportation dollars.

As a Nation we have, for the past 25 years, ignored the fact that transportation is basic and should be looked upon as a total system. A transportation system, like everything else, is the sum of its parts. Many of us continue to think of transportation as urban or rural, national, State or local, public or private, highway or transit, trucking or railroads, air or rail, water or air when we should think of them together by substituting "and" for "or." This is particularly true as we continue to seek solutions to the transportation problems of our urban areas. While individually the transportation system in each of our urban areas is but a part of a total national transportation system, collectively they represent our most pressing and difficult national transportation problem.

Intercity travel needs continue to be adequately provided for by our excellent air system, the outstanding interstate highway system, the private bus industry and our improving Amtrak system. This mix of

modes—public and private—provides a generally satisfactory level of intercity passenger service, but not without a large investment. Even a preliminary estimate would suggest that the investment in our intercity travel systems is far in excess of $100 billion. For that investment we have made our cities more accessible to each other; but, until recently, have done little to improve accessibility within our cities. Only in the past decade has there been a realization that public transportation is a necessary element to provide a total solution to total urban area transportation needs. That realization came about with the recognition that the adverse effects of overreliance on the automobile to sustain and enhance the quality of our lifestyle threatens the very quality we hope to achieve. As a result, the somewhat painless circumstances under which governmental highway programs were eagerly sought and accepted by local communities no longer exist and public transportation is now looked to as the alternative. A belated realization that there is a limit to existing energy sources has added a greater sense of urgency to the need for expanded and improved public transportation as a means to achieve a more efficient use of energy. Can there be any doubt that historical transportation emphasis must shift and the same vision, courage, and resources that have made this Nation a leader in the highway and air modes must now be applied to public transportation to bring it to the same level of excellence?

We are greatly encouraged by the changing direction of Federal transportation programs to produce a higher level of effort and assistance in our urban areas while maintaining a substantial program for rural transportation improvements. However, when one understands the magnitude of the urban transportation problem, only one conclusion can be reached—the effort is not enough. Several years ago we faced a space challenge. Ten years later we had successfully met that challenge. If we are determined, we can meet the transportation challenge with the same success.

In California, we are meeting the challenge through a statewide planning effort which will produce a State transportation plan for submission to the legislature in January 1976. The planning is being done jointly by the State and local communities and will require difficult decisions, particularly in the areas of technology and financing. The decisions in those two areas are greatly affected by Federal policy and programs. It is essential that Federal policy and programs be clear and dependable so that the States and local communities can make the necessary transportation decisions now for their future.

In the technology area we have available a variety of transit systems from which any community can choose to fill its particular needs. All are in various stages of development, but none has crossed the finish line as a complete system. In order to make them fully available, the Federal R. & D. program should be greatly accelerated and greater emphasis put on development. Because Federal transit R. & D. activities directly affect the States, the Department of Transportation might consider inviting State participation. It is possible that States which also have transit programs, including research and development, could pool their resources and combine them with Federal resources for a more productive effort.

In addition to an accelerated program to bring new transit systems on line, a concentrated effort should be made to make them as efficient as possible. One area about which there has been much talk, but little effort, is the potential for moving goods as well as persons. The economic benefits of such a system are obvious and the technical problems are not insurmountable. It requires only the determination to make it work.

Another area which requires acceleration and expansion is transit management development. It makes little sense to invest huge public funds in transportation facilities if we do not also provide the managers to construct and operate them. A full-range program involving the States, local communities, and the private sector should be established to better train local decisionmakers, planners, designers, builders, and operators.

Finally, time is all-important. The urgency of our need for improved transportation, particularly in our urban areas, was real before the fuel shortage.

Even if the fuel shortage is alleviated, the other reasons for urgency still exist. Many of our communities are faced with difficult transportation decisions which will be made in the next few years. On a national scale, the problem is big and requires a big solution. For 25 years, we permitted our intercity rail passenger service and our urban transit systems to deteriorate and, in some cases, disappear completely. We have made significant progress in the past 5 years rebuilding, but not nearly enough. Much more needs to be done.

Thank you, Mr. Chairman.

Mr. McFall. Thank you very much, Mr. Parrish. Were you here this morning when Secretary Brinegar made his statement?

Mr. Parrish. Yes, I was.

Mr. McFall. Do you have any comments you would like to make at this time or would you rather do it in writing?

Mr. Parrish. I would like the pleasure of doing that in addition.

Mr. McFall. All right. Go ahead.

COMMENTS ON SECRETARY'S STATEMENT

Mr. Parrish. In particular, while we did get an excellent overview of the situation and some of those programs that are either in existence or proposed, which to me do represent policy, I felt that the urban transportation needs, where I suggest our real problem are, are shortchanged, were shortchanged in the Secretary's presentation this morning.

Mr. McFall. All right.

If you have any further comments with reference to the Secretary's statement and you would like to submit them in writing, we will put them in the record at this point.

Mr. Parrish. I would be very happy to do so.

[Mr. Parrish's comments will be submitted at a later date.]

TUESDAY, MARCH 5, 1974.

WITNESS

DR. LAWRENCE GOLDMUNTZ, CHAIRMAN, ECONOMICS AND SCIENCE PLANNING, INC., FORMERLY ASSISTANT DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY

Mr. MCFALL. Our next witness is Dr. Lawrence Goldmuntz.

Dr. GOLDMUNTZ. Thank you very much, Mr. Chairman. I appreciate very much the opportunity to appear before you.

Mr. MCFALL. I am glad you are here. I enjoyed our conversation a couple of months ago on this very matter and I am glad you came to give us the benefit of your testimony.

STATEMENT OF DR. GOLDMUNTZ

Dr. GOLDMUNTZ. Thank you very much.

Mr. Chairman and members of the subcommittee, I appreciate very much the opportunity to appear before you to present some views on transportation policy. These views are based on 5 years of stimulating experience in the Department of Transportation and in the Office of Science and Technology in the White House. In the Department of Transportation I chaired the Metroliner Steering Committee for Secretary Boyd, charged with overcoming delays and bringing this high-speed train program to a successful conclusion. I also organized, for Mr. Boyd, the DOT Air Traffic Control Advisory Committee, and served it as Executive Secretary. It was that committee's delightful fate to have its recommendations accepted by FAA, OMB, and the Congress. The recommended program is now being implemented—however, more slowly and more expensively than initially projected. I was an Assistant Director for Civilian Technology in the Office of Science and Technology responsible for reviewing the DOT R. & D. budget and for commenting on the effect of environmental actions on transportation programs. In this latter capacity I organized and chaired an interagency committee called Recat—Regulatory Effects on the Costs of Automotive Transportation—which concluded in February 1972 that the auto emission standards were needlessly stringent and that the air bag mandated by DOT was far less cost-effective than a properly designed and utilized harness. EPA has partially accepted Recat's recommendations by recently proposing a five-fold increase in allowable automotive NO_x emissions to the Senate Public Works Committee. Also, while at the Office of Science and Technology, I organized and served on the task force on railroad productivity that recently submitted its report, under the chairmanship of Professor John R. Meyer, president of the National Bureau of Economic Research.

For the purposes of this hearing on transportation policy, I should like to read into the record some conclusions of each of these reports:

From Recat:

> The national ambient air quality standards are unattainable in many urban air quality regions in the 1975–77 time period specified by the Clean Air Act Amendments of 1970, even with the imposition of these controls.
>
> A number of experts consulted by the committee and unconnected with the automobile industry suggested that the national air quality and automotive emission standards should be modified, even though this may require changes in the existing legislation.

In making final decisions, we at least ought to know what the consequences of our actions will be.

The feasibility of achieving mass-produced gasoline-powered automobiles that will meet the 1976 emission standards is questionable. If these levels can be achieved, substantial additional costs will be involved for initial equipment, maintenance, and increased fuel consumption.

* * * it appears that the excess of control costs over benefits for the conversion decade will average about $63 billion, or about $6.3 billion annualized * * *.

From the more recent railroad productivity report, a concluding paragraph read as follows:

The country faces a choice with respect to the railroad industry. If reforms and innovations of the type set forth in this report are avoided, the railroad industry will continue to falter. This will result in an ever greater burden on the American consumer and taxpayer—in excess of $10 billion per year—the Federal Government will continue to be confronted with periodic crises in the railroad industry. On the other hand, bold reforms can restore the industry to a vigorous and profitable state. The necessary policies and actions, moreover, need not solve the railroad problem at the expense of one interest group or another; compromises and alternatives can be identified that should protect the legitimate interests of most of the parties involved. In addition, a sound program of reform need not rely fundamentally on public money. The keys are improved factor productivity and speedier adaptation to changes in the freight market. The emphasis should be on structural and operational reforms that further these goals, with public funds being used only as they encourage and facilitate the necessary reforms.

A common conclusion from these two reports might be drawn: We tend to respond primarily to supposed or to actual crises. We do find it difficult to plan with sufficient foresight and care—outlining the costs and effectiveness of alternative solutions before making decisions. We are too often in a reactive as compared to a creative mode. We thereby impose enormous costs on the consumer.

The victim of no planning or poor planning or no policy or poor policy is the disaggregated consumer. Product costs or mobility costs increase incrementally because of poor transportation policies, incrementally not necessarily dramatically. The disaggregated consumer is not represented by a well-financed lobby as are many transportation special interest groups. The Federal bureaucracy too often seems to represent itself and its specific mission. It does not often take a broad view of consumer benefits and costs.

Thus by the time the disaggregated and by now disgruntled consumer is experiencing higher transportation costs, it may be difficult to correct the source of the diseconomies.

For example, it may be too late to change auto emission policy to a more cost effective and regional set of standards in time to meet 1976 auto production schedules. Furthermore, the railroad productivity report may have appeared too late to change the current approach to railroad reform from a crisis reaction to bankrupt railroads in the Northeast to the much more pervasive and general reform program recommended for the entire railroad industry in this report.

Before drawing some general suggestions on ways to formulate transportation policy in a timely way, and hopefully with broad consensus, it might be constructive to examine briefly one other area of concern in transportation in addition to the environmental and railroad issues that have been described in the reports I just discussed. There unfortunately is evidence almost under our feet in Washington that urban transportation policy is faulty. Let me give you some numbers.

The Washington Metro will cost between $3–$4 billion; it will connect the suburbs to a central business district. The number of jobs in the central business district of downtown Washington is projected to grow from 500,000 today to 750,000 in 1990 by Washington Metro officials. The job distribution in the suburbs is projected to grow from 500,000 to 1,500,000 by 1990. Both of these numbers seem to display an inordinate amount of local pride but their ratios are probably correct, namely, the job growth in the suburbs is estimated by Washington Metro officials to grow four times as fast as job growth in the central business district. This is consistent with growth patterns throughout the country and is not likely to be changed by adding transportation options. One might ask how a high capacity corridor transportation system of the Washington Metro type can reasonably service the increase in suburban jobs as compared to the more modest increase in central business district jobs.

The ridership projected for the Washington Metro in 1990 varies between 250 and 300 million passengers annually. The ridership on the current bus-oriented public transportation system in Washington is 120 million passengers, providing a revenue of $60 million on a capital investment of less than $100 million. The interest charges alone on the $3–$4 billion required to build the Washington Metro would, under normal accounting procedures provide for four times the current bus service or will correspond to a cost of a dollar a ride in 1990. In addition to this one would have to add operational and maintenance costs. It does seem that the choice of a high capacity corridor transportation system costing $30–$40 million a mile for the greater Washington area was unwise as compared to a more flexible, lower capital cost, more extensive bus system, possibly utilizing bus preference lanes more extensively.

What is especially distressing is that some dozen cities seem to be following the example of our Nation's Capital and have indicated interest in establishing comparable subway systems. Atlanta and Baltimore are far along in their planning. This may be an example of th principle that if the Federal Government underwrote 80 percent of the cost of a cancer implant, the line for the Federal handout would extend across the country. Rail rapid transit may be required in New York and Chicago but it is not required throughout the land.

There is another difficulty with high capacity corridor transportation systems. I know of no economist or urbanist that claims the notion of a large central business district surrounded by residential communities in an economic or attractive use of land or facilities. The central business district is vacant on weekends and evenings making poor use of infrastructure. Everybody has to travel long distances to get to work. A more economic and attractive urban form is one in my view that consists of a number of smaller activity centers well delineated and of reasonable size dispersed through the urban area. Then it is possible to live near where you work and it is also possible to make use of the commercial infrastructure of the business district during evenings and weekends. Such a polynuclear urban form has little requirement for high capacity corridor transportation.

This illustrates the notion that transportation policy is not a thing by itself. When transportation must be conditioned by urban policy

and it must in turn condition urban policy. The Administrator of the Urban Mass Transportation Administration in the Department of Transportation should walk across the street to discuss with his counterpart in the Department of Housing and Urban Development the conditions that urban form should place on urban transportation and vice versa. Too often the excuse is given that urban form and therefore transportation should be left to local options. Therefore the interrelationship between the two is not studied, no guidelines are provided, no difference in the cost of effectiveness of various urban forms and the availability of various transportation options to serve those forms is available. In a very real sense this is not a new federalism, but a delinquent federalism. There are very few localities, if any, with sufficient funds and capabilities to address these issues in the absence of Federal leadership. The very least we can expect of the Federal Government in this area is that the basic studies relating urban form and urban transportation be accomplished for the guidance of all.

There are some technological possibilities on the horizon for providing levels of service comparable to the automobile in urban transportation. The automobile and truck have prospered because they provide origin-to-destination service at reasonable costs. It is congestion and long haul that defeats the automobile and the truck.

The new technology, areawide personal rapid transit which may provide service comparable to the automobile, will not come easily.

There has been some good work that indicates, at least on paper, that a network of light guideways no more than 2½ feet wide elevated above the ground can be used to cover an urban area so that no origin or destination is more than ¼ mile from the nearest station. The vehicles that travel on these guideways would be light so that the guideways themselves would be light. The vehicles would be capable of automatically guiding a single party (of up to six people) to the station nearest their destination. The vehicles would obtain later stability by means of a structure similar to a centerboard down the middle of the guideways. In this manner the vehicle would actually be broader than the guideway itself so that the guideway would be as unobstructive as possible.

New techniques in propulsion such as linear induction motors, and new control systems, would permit close headways with safety. Therefore, the capacity of a single guideway could be as high as 15,000 passengers per corridor per hour. Modal split analyses of such a system for the Los Angeles area indicate that approximately 35 percent of the home-to-work trip would be accomplished on this mode. The costs of such a system seem competitive with the fully allocated costs of an automobile. However, there are many technological and institutional unknows. For example, the vehicle goes nonstop from origin to destination since all stations are offline and since all mergers at intersections are automatic. We do not know what the effects of a nonstop origin to destination trip that is "chauffeur driven" will be on modal split. It is bound to be favorable and the 35-percent split that I previously indicated has of necessity neglected this important service attribute. The reliability of such a system and its cost can only be determined by substantial investment in development and test.

An intermediate transit system unfortunately implemented in Morgantown, is not related functionally or technologically to this areawide personal rapid transit system. Intermediate transit cannot have the wide area distribution that is required to compete successfully with the automobile. The size of the vehicles necessary to provide capacity cannot provide the privacy of service or the distribution capability necessary to compete with the automobile.

It seems that the beginnings of a good urban transportation policy would require first a statement of objectives; second, a statement of available or prospective technologies; third a strategy for current implementation. Let me suggest a brief outline of such a policy: (1) Only those urban areas that now have rail rapid transit or show a clear requirement for it as compared to competitive systems should be permitted to invest Federal funds in this mode. (2) Other areas in need of improvements in urban public transportation should be encouraged to utilize taxies, jitneys, and buses either on arterial roads or busways for the near future. (3) A heavy investment should be made in the development of areawide personal rapid transit development so that in 4 or 5 years we can know whether the service capabilities of such a system are sufficient to supplement the automobile and truck in urban areas and whether the system can be achieved at a high-enough reliability and low-enough cost to make such systems attractive.

I believe, Mr. Chairman, that it is appropriate to ask the Department of Transportation to periodically formulate its view of a national transportation policy. However, this should be done in my view with a sense of realism and with congressional guidelines. Federal transportation policy must be dynamic. It must respect the pluralistic nature of our society. It must reckon with our sunken costs. It must influence the private sector and local governments when appropriate but not seek to involve itself overly when inappropriate. Thus there are many fuzzy boundary lines.

GUIDELINES FOR TRANSPORTATION POLICY

This committee could be helpful by providing guidelines to the Department of Transportation for a national transportation policy. I should like to list some possibilities:

(1) The beneficiaries of Federal expenditures and policies should be the average consumer. There are or could be enough alternatives and competitiveness in transportation so the needs of individual shippers, commuters, or travelers for special protection or subsidies are diminishing and should be encouraged to diminish.

(2) The Department should move toward the eventual merger of the capital grant trust funds so that transportation programs can proceed on the basis of inherent needs rather than fund availability.

(3) Revenue sharing should not minimize the Federal Government's responsibility (a) to provide through R. & D. programs and cost-effectiveness studies alternative transportation options to local communities and (b) to approve local transportation plans against investment criteria designed to meet rural, urban, and interstate transportation needs.

(4) Greater utilization of our available transportation resources should be encouraged by a number of low-cost techniques, such as:

(*a*) Widespread use of management information systems for alternate highway use, freight car allocation, carpool availability.

(*b*) Increased freedom of entry of taxi and jitney service in all localities. This perhaps could be promoted by rewarding such localities with increased revenue sharing.

(5) The Department should fund continuing, competitive, and unfettered studies of the airline, railroad, trucking, and transit industries with a great variety of independent academic, public interest, and industry organizations to provide the many inputs necessary to establish a national consensus on how these industries might be restructured to serve the consumer and proprietor more effectively than presently.

(6) The Department should consider separating the urban research, development, and demonstration programs other than bus and rail from the same jurisdiction [UMTA] as the capital grant program. In this way, that R.D. & D. effort may step up with the responsiveness needed to exploit its opportunities and responsibilities. There are substantial noncapital intensive and technological opportunities to improve urban transportation.

(7) Federal funds should be used to rescue threatened and needed institutions such as the Railroad Retirement System and the Northeast railroads and I would like to emphasize this only when the overall requirements of the system studies contemplated in guideline (5) are satisfied. For example, the rescue of the Railroad Retirement System should require changes in work rules that ultimately benefit labor, management, and the consumer; and equivalently the loan guarantee funds to railroads should be used to encourage end-to-end mergers to achieve the objective of 3 or 4 privately owned national rail networks with greater responsibility for origin-to-destination service than now obtains in our balkanized railroad system. That is the conclusion of this report.

(8) Federal policies and expenditures should promote those transportation systems that can provide origin-to-destination service under the responsibility of a single entity. The automobile and truck have been successful in large part because of this capability. Such a policy would encourage end-to-end mergers in railroads and airlines, intermodalism between rail and trucking implying extensive use of containerization and intermodalism between airlines and bus systems. Such a policy would also encourage extensive use of taxis and jitneys in urban areas and would promote freedom of entry in these markets.

I realize that this list of guidelines is controversial and incomplete. But the notion of providing committee guidelines to the Department is, I believe, helpful. It will tend to focus policy formulation on those issues of concern to the Congress.

I should like to close by suggesting that the Congress itself, through its research arms or some Commission of the Congress or this committee itself, also consider supporting the transportation industry studies suggested in guideline (5). In this way the Congress could promote the freedom of inquiry and discussion so necessary to examine these controversial issues. It is not necessary to depend solely on the results of Department of Transportation studies. The Congress should create a ferment of concern about tranportation issues—hopefully resulting in a better consensus on Federal transportation policy.

Mr. McFall. Thank you very much. We appreciate your testimony.

After you read the Secretary's statement that was presented this morning, we would like to have you send us your comments. You

have made some very interesting statements in your prepared testimony. Perhaps you could relate some of your comments to the comments of the Secretary this morning.

Dr. GOLDMUNTZ. I would be delighted to do that.

Thank you very much, Mr. Chairman.

Mr. CONTE. Mr. Chairman, a question.

Mr. MCFALL. Proceed, Mr. Conte.

PRT COSTS

Mr. CONTE. In view of the lack of success with regard to the Morgantown project, how long will it take to get the PRT system you are talking about?

Dr. GOLDMUNTZ. There are some differences of opinion in the industry.

I am a conservative technologist in this business. It is my guess that to achieve the reliability, low cost, and standardization that one needs, one ought to invest heavily in the R. & D. stage. Then you will invest much more efficiently in the implementation and operating stage.

If you invest between $35 to $50 million per year over the next 3 to 4 years, you will then have a system that will be proven from the point of view of reliability, of cost, and of applicability throughout our urban areas.

I believe that one should take the 3 or 4 years necessary for the development work, heavily funded in the amounts I mentioned, before proceeding with implementation of an areawide system.

Let me elaborate if I may.

Mr. CONTE. Surely.

Dr. GOLDMUNTZ. One reason Chevrolets, Fords, Pintos, Vegas, and so forth, are cheap is that you make many of them and you make them almost the same way. You cannot have each city order its own areawide PRT. You have to have some common standards between the cities. That takes research and development work.

Mr. CONTE. That $35 million, you are talking about is peanuts compared to what has been spent on Morgantown. I enjoyed your testimony. I would like to have the further benefit of it.

Did you agree with Mr. Herringer when I was questioning him on the Morgantown project—which I have been questioning since its inception—when he says, "I think the Morgantown system has many benefits. We will learn a lot from the Morgantown system about people movers. We have learned a lot from the Morgantown system already."

He does not say what we are going to learn. "We are going to learn a lot more once the system gets into revenue operation."

"Considering the $43 million the taxpayers already invested in the Morgantown system, we should complete this system, we should learn what we can from it."

Then he says he wants another $20 million. Do you think we have gotten anything from the Morgantown project other than having spent a lot of the taxpayers' money?

Dr. GOLDMUNTZ. I would not say we have not gotten any benefit. On the other hand, I am not a supporter of that program.

Mr. CONTE. That makes two of us. Also, I would like to get your viewpoints at another time more convenient. I know we are pressing you

today. Would you send me either for the record, or off the record, your views of the Morgantown project?

Dr. GOLDMUNTZ. I would be glad to do that.

COMMENT ON SECRETARY'S STATEMENT

Mr. MCFALL. Thank you very much for very fine testimony.

Dr. GOLDMUNTZ. Thank you.

[Comments on secretary's statement follow:]

The statement of the Department of Transportation on March 5, 1974, before the House Appropriations Subcommittee on Transportation, is general and comprehensive but not focused. It ignores transportation system studies and downplays research and development.

If national transportation policy awaits the explicit formulation of national goals that are broadly accepted, transportation policy is not likely to become available. It is not necessary for national transportation policy to be global in order for it to be effective. It can focus on some high priority issues even in the absence of a national statement of goals. There was a substantial effort in the White House during the first few years of the Nixon Administration to develop a policy toward national goals. It failed. By the time it was coordinated through the agencies of Government, and various political interests, it became a document that reflected primarily our religious training with little help for our earthly problems.

Transportation policy can focus on a few specific areas without violating national goals:

(1) Urban Transportation. It is congested, expensive, uses too much land, takes too much time, does not have sufficient capability in the public sector, and faces massive subsidies.

(2) Railroads. Their present organization does not allow them to compete effectively for markets which they could economically serve better than their competitors. A different organization would overcome the balkanization of the railroad system, would lead to more effective regulation, and would encourage more effective use of manpower.

(3) The current organization of the airlines satisfies neither their banks nor the customers.

With respect to urban transportation, a policy might be developed around the following:

(1) Only those urban areas that now have rail rapid transit or show a clear requirement for it as compared to competitive systems should be encouraged to invest Federal funds in this mode.

(2) Other areas in need of improvements in urban public transportation should be encouraged to utilize taxis, jitneys, and buses either on arterial roads or busways for the near future.

(3) A heavy investment ($40 to $50 million per year) should be made in the development of areawide personal rapid transit so that in 4 or 5 years we can know whether the service capabilities of such a system are sufficient to supplement the automobile and truck in urban areas and whether the system can be achieved at a high enough reliability and low enough cost to make such systems attractive.

(4) Revenue sharing should be utilized to encourage local governments to allow flexibility of rates and freedom of entry of taxis and jitneys.

With respect to improving railroad productivity, the following might be the outlines of a policy:

(1) Such Federal funds as are needed for loan guarantees for railroads or to rescue the railroad retirement system should be provided only if appropriate industry reforms (outlined below) can thereby be accomplished.

(2) The balkanized railroad industry should be encouraged to form three or four competitive privately owned national rail networks through end-to-end mergers so that competing transportation companies can have greater responsibility for a shipment from origin to destination and so that it would be easier to accomplish some regulatory reform.

(3) Railroads (and the ICC) should be encouraged to provide intermodal transportation services so that competing companies can have greater responsibility for a shipment from origin to destination and so that the use of containers on flatcars can be encouraged.

(4) Labor and the railroads should be encouraged to modify work rules so that labor can be used more effectively in a railroad system whose market would be expanding if these reforms were accomplished.

With respect to the airlines, it seems that a major impediment to policy is the lack of any plan for efficient airline organization:

There seems to be a consensus that the current organization of the airlines and their regulatory framework is inefficient. There is little understanding or agreement on whether it would be in the Nation's interest to move toward an A.T. & T. of the airlines regulated in fare and quality of service or whether we should move to encourage the formation through merger of a number of competing national airlines with related fare and entry restrictions. It would seem, in this area, that Federal policy should be to fund a series of wideranging studies to answer this question: "How do we efficiently organize the airline industry?" and "How do we motivate it to move in that direction?"

There are other aspects of transportation policy that the Department should address:

(1) The reevaluation of the organization of the Department from the current collection of inherited agencies to a department that is more functionally designed.

(2) The overreaction to short-term politically inspired requirements that distorts development and demonstration programs, aborts longer term research and system analysis efforts and weakens resolve before powerful minority special interests.

TUESDAY, MARCH 5, 1974.

WITNESS

WILLIAM HAMILTON, TECHNICAL STAFF, GENERAL RESEARCH CORP.

Mr. MCFALL. Mr. Hamilton, we would be very glad to have your testimony at this time.

Mr. HAMILTON. It is a pleasure for me to have this opportunity. Since it is late, with your consent I will summarize the brief remarks.

Mr. MCFALL. I see that your prepared statement is not very long.

PREPARED STATEMENT

Mr. HAMILTON. Perhaps I can make it a little more topical in view of what has been said this afternoon.

Mr. MCFALL. We will put your full statement in the record and then you can go ahead and make some comments.

[The prepared statement follows:]

INNOVATION IN URBAN TRANSPORTATION

[By William F. Hamilton, General Research Corp., Santa Barbara, Calif.]

Mr. Chairman and members of the subcommittee, at General Research Corp. we have conducted in-depth studies of a broad range of urban transportation systems, assembling a wealth of data and projections concerning technical feasibility, performance, and impacts of transportation systems ranging from rail, bus, and automobile to personal transit and dual-mode. The results of our studies, performed under my direction, are the reason for and basis of my remarks today.

Briefly summarized, our findings are:

Though the automobile has brought us a level of mobility and convenience never before approached in urban movement, it has also brought unacceptable air pollution, accident losses, urban intrusion, and—most important of all—it has left those who cannot drive in relative immobility.

As an alternative to the automobile, bus and rail transit is a major disappointment. Bus and rail patronage has long been declining. Even massive public ex-

penditures do not promise to restore their popularity. But without greatly increased usage, transit cannot become an important factor in improving urban life.

But and rail transit are unpopular with good reason. The average transit patron moves door-to-door at half the average speed of the urban motorist, even at rush hours when transit service is best and traffic worst. If forced to switch to transit, the typical motorist would find a 20-minute trip stretched to an hour or more. The walking, waiting, and crowding frequent in public transit are a far cry from the door-to-door luxury of private automobiles.

Transit is not even cheap: in San Francisco, the new BART system costs about 15 cents per passenger mile, more than the total costs per mile of a compact automobile.

We have at hand the new technology to revolutionize urban travel. A transit revolution became feasible two decades ago, when electronic computers first became generally available. Computer automation permits economical systems of small cars moving on networks of electrified, grade-separated guideways. Such systems offer true personal transit service: a private car for each individual traveler, with none of the intermediate stops and transfers that plague bus and rail systems. In no other way can total transit trip times rival those of private automobiles. Moreover, the automated guideways have a major growth potential: with proper design they could become dual-mode systems, not only providing personal rapid transit, but also serving as automated freeways for specially equipped private automobiles.

Personal rapid transit—PRT—promises to compete successfully with the private auto. By doubling the speed and halving the cost of transit travel, PRT can develop the high patronage, broad coverage of urban areas, and significant beneficial impact on urban life which are the real objectives of transportation improvement.

The conclusions from our studies are inescapable. Bus and rail transit are at best an expensive palliative for our urban transportation problems. PRT and dual-mode are much more promising, but until their technology is fully developed, hard-pressed cities will have no alternative to inadequate conventional systems.

These findings and conclusions were derived from factual, objective analyses and forecasts. But any forecast is subject to error. Is our pessimism about conventional transit really justified?

Consider the record. Billions in Federal transit assistance have been channeled to improvement of bus and rail transit, with occasional well publicized successes. Overall, however, Federal assistance has accomplished little, if transit patronage is any measure of progress:

Federal transit aid was initiated in 1961 by President Kennedy, who sought balanced urban transportation through a program of loans to transit systems.

By 1965, transit patronage had declined from 7.2 to 6.8 billion riders per year.

Federal transit aid then moved from loans to direct capital grants, in amounts of $200 million to $300 million per year.

By 1970, transit patronage had declined from 6.8 to 5.9 billion riders per year.

In the early seventies, Federal transit expenditures almost tripled, to the range of $800 million per year.

By 1972, transit patronage had declined precipitously from 5.9 to 5.3 billion riders per year.

This record certainly shows no positive relation between Government support and the popularity of conventional transit. If anything, it suggests instead that prospective operating subsidies and redoubled expenditures will simply throw good money after bad.

A turn for the better, of course, may be just around the corner. Preliminary data, in fact, show that in 1973 transit regained a fraction of the patronage it lost in 1972, and the worsening gasoline shortage makes further gain almost certain in 1974. This does not, however, mean that transit is becoming popular or that people are better off; quite the contrary, freedom of choice and personal mobiilty are both drastically abridged while gasoline shortages persist.

In the longer term, even the staunch proponents of conventional transit expect little more than recent history or our own analysis would indicate for bus and rail systems. Consider, for example, the $6.6 billion rapid transit development now being planned in Los Angeles, the most expensive yet considered in this Nation. According to the report recommending it, the completed system in 1990 will divert only 2 percent of drivers from their autos, and serve overall less

than 6 percent of all the trips in its area. If $6 billion lavished on transit in a single city is to achieve no more than this, it is certianly time to explore the promise of new technology.

Los Angeles, however, will not develop and prove PRT or dual-mode by itself. No single city can or should bear all the costs and risks of a development which can and should serve all major cities. The equitable approach is cooperative, and the Federal Government is the appropriate instrument for this cooperation. Only the Federal Government can reasonably undertake a development of such scope and magnitude.

Under present national policy, however, the overwhelming weight of Federal assistance is directed to conventional rail and bus systems. Moreover, the limited funds for "new systems" are channeled principally into demonstrations rather than research and development. Demonstrations are fine for minor innovations in bus and rail transit, but by their very nature block rapid progress toward PRT.

We have all heard of the Morgantown PRT demonstration. Demonstration it is, but PRT it is not, because the two are presently incompatible. The fundamental problem in PRT is safe, reliable automation of many small, closely-spaced cars. But if there is any substantial safety problem in a system, to demonstrate it with real passengers in daily service would be clearly irresponsible. However well-intentioned, the Morgantown demonstration had above all to be safe, and as its specifications were written it became a PRT in name only. Morgantown's cars must maintain spacings 20 times those of PRT as it is usually defined. It follows that each car must carry 20 travelers at once; then intermediate stops and transfers are unavoidable, and service is scarcely more personal than that of a conventional bus.

Thus the potential of PRT still remains to be explored. Unless national transportation policy is transformed, it will be approached slowly at best, while transit funds pour year after year into bus and rail systems which are virtually certain to do little for either the transit traveler or the overall quality of urban life. It is undeniably simplest, easiest, quickest, and safest to support conventional transit. But if transit which attracts high patronage is the ultimate goal, our only real hope lies along the difficult path to PRT, a path where uncertainties abound, where risks must be squarely faced, and where the great payoff may be far beyond the next election.

URBAN TRANSPORTATION RESEARCH

Mr. HAMILTON. I should explain at the outset that at General Research I have had the pleasure of directing extensive and in-depth studies of urban transporttaion. It is on the basis of those studies that I wish to speak today on that topic.

My real purpose is to make a plea for more innovation in urban transportation. The findings of our studies support this inescapably and, although a lack of data has been alleged today, we found, in fact, a surfeit of data, great difficult in dealing with the wildnerness of statistics about urban transporttion in order to arrive at a significant conclusion.

MAJOR FINDINGS

At any rate, let me offer some of the most important findings.

First of all, bus and rail systems have been a disappointment for 30, 40, or 50 years. Patronage has been declining steadily and, of course, the future is anyone's guess. But our analysis of the facts and the trends suggests that even very large infusions of money will not make bus and rail systems popular in the foreseeable future. Popularity happens to be very important to transit systems because if we do not attract any patronage, then they cannot have much beneficial impact on the quality of urban life. Nor will they be serving many of those travelers who cannot drive if they are not attracting very many travelers.

A second important finding which has been conspicuously absent in what has been said today is urban transportation is unpopular for excellent reasons. Compared to the automobile it services, it is really inferior.

The typical transit traveler moves at something like half the speed of the motorist even in peak hour traffic when auto traffic is at its worst and transit is at its best. The accommodations are vastly inferior to those of the automobile.

In the end, transit does not even seem to be cheap. The Bay Area Rapid Transit, when all the expenses are counted, will cost something like 15 cents per delivered passenger mile, assuming their patronage estimates are fulfilled. At that rate, that is substantially more than the total cost of operating a small car.

A third important finding of our work is that the technology is here for a revolution in urban transportation performance. The technology appeared almost 20 years ago with the electronic computer and it makes possible the personal rapid transit and the truly personal service by small vehicles which people have already extolled here this afternoon.

We have made extensive detailed quantitative comparisons of the prospective performance of personal rapid transit relative to rail and but service for the future, and we come to the conclusion that, unlike bus and rail, PRT can reverse the long-standing decline in transit patronage and it can attract enough patrons to make a significant impact on the quality of urban life.

All of this, of course, is just study, and studies can always be wrong, especially as they attempt to forecast the future. But the record that has already been brought up to date really corroborates what I have been saying.

ASSESSMENT OF FEDERAL ACTIVITY

The Federal Government plunged into transit subsidy, over a decade ago, and in 10 years it has spent $3 billion and presided over a 20 percent decline in transit patronage. Good times may be just around the corner, but the record suggests that to go on doing nothing more than rescue bus and rail systems will just be throwing good money after bad.

SECRETARY'S OMISSION OF RESEARCH AND DEVELOPMENT

The transportation policies and programs discussed this morning were in my opinion extraordinary in their almost complete omission of research and development. It is doubly extraordinary when one considers that rail transit was introduced in Boston, as we know it now, in 1892 and has changed very little in the service it offers, since then.

The automobile has not changed much since the Model T in its service, neither has the urban bus. Yet technology has made a lot of progress.

Why have we not seen any of it in our transportation systems?

Well, one excellent reason is that national transportation policy, manifest in what we do, as opposed to what we say, does not encourage innovation.

In urban transit where the problems may be most severe the Federal dispensation of funds has been very heavily loaded toward bus and rail systems. There has been a small portion set aside for research, development and demonstration, but the lion's share of that has gone into the demonstration rather than the development.

This is unfortunate, because demonstrations by their nature are fine for minor improvements in bus and rail, but they are antithetical to a major improvement such as personal transit. The Morgantown PRT demonstration is a fine case in point.

MORGANTOWN PRT

Morgantown is clearly a demonstration. By the same token, it is not a PRT under the usual definition. Only in DOT's terminology is Morgantotwn a PRT as it eventually emerged there. The reason for this is simple enough: The principal technical issues in PRT are safety and reliability. Operating all those little cars at the short headways needed to get good performance is something that has not been done before and it remains to be proven that we can do it safely and reliably.

Now it would be irresponsible to test safety and reliability of a novel system in a demonstration which carries real people in daily service.

Above all, Morgantown had to be safe and, consequently, it could not be a PRT system, it does not have small cars, it does not have short headways, it does not have light guideways, it does not offer personalized service.

POLICY AND INNOVATION

It is difficult to, relatively speaking, move toward personal rapid transit or any major change in urban transportation. It is much easier and quicker and simpler, certainly more predictable, to devote ourselves to extending and supporting and reviving bus and rail transit. But we can be quite certain that the performance relative to the automobile remains inferior and that we will not make major progress until we can move toward something new.

And for the purpose of moving toward something new, it appears that we need a national policy change in direction which emphasizes what technology can do and more adventuresome and productive assistance on the direction that we take with our expenditures.

Mr. McFall. Thank you very much, Mr. Hamilton.

Mr. Conte. May I ask for some information?

You mentioned the decline in patronage of bus and rail. Could you send us some statistics for the last 5 years with regard to mass transit?

Mr. Hamilton. In part they are in the written statement.

There has been a—let me put it this way: In 1971 and 1972 the decline of many years accelerated to 5 percent per year. In 1973 there was a very small increase, according to preliminary figures.

Mr. Conte. That is understandable with the energy crisis.

Thank you, Mr. Chairman.

Mr. McFall. Thank you very much, Mr. Hamilton.

TUESDAY, MARCH 5, 1974.

WITNESS

HON. BILL FRENZEL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. MCFALL. We will now hear colleague, Bill Frenzel.

Mr. FRENZEL. I, first of all, want to congratulate you on holding these hearings to try to get a better handle on the national transportation policy and I want to make two comments quickly.

I think both of the members of the subcommittee here present know that I have been very strong for R. & D. spending in urban mass transit. I have been strong for capital spending and I have been an aggressive opponent of operating subsidies for reasons which we have all discussed a great deal. But I am still persuaded that the first Federal priority in urban mass transit is the development of attractive modern systems which people may not want to flock to, but at least they will not flock away from. I am particularly interested in the so-called high capacity personal rapid transit system, which so far has been an elusive technology but so has any technology which is complicated and on which we are only spending $2 million in fiscal year 1974.

If we persist in that rate of spending, we are not ever going to get there, gentlemen.

Secondly, I would like to focus on a question which I think relates to the query of the gentleman from Massachusetts to your previous witness, and that is: What kind of information do we have on mass transit systems and on ridership?

There is just an enormous lack of information in the field. The paper which I have submitted to you details some of this to you and cites the chairman's speech on the radio in which he cites the difficulty of turning a lot of money over to municipalities and local instrumentalities of government, but not giving them any information on which to base their own decisions.

I do not share the chairman's disenchantment with UTAP, because I am not sure I understand it completely, but I do know that local communities do not have the data on which to base decisions and we have not given it to them. Until we provide it, we are derelict in our responsibilities.

I have introduced one of the world's greatest bills, H.R. 12368, which is entitled, "The Urban Transport Data Act," a bill to provide a way for us to get the data we need to deal with the urban transportation problems of the future. I would only say that when you asked, Mr. Conte, the previous witness:

"What is the fact on urban mass transit trips?" we do not know.

All we have is some figures from the ATA, they show a horrible graph like that. In their newspaper they run headlines that transit use is increasing because there is a little tiny hook down at the bottom of the graph. We do not know.

When we ask UMTA how much ridership is this new system going to attract, they have not the foggiest idea. All we know is that the old systems are not attracting enough. I commend to you my bill.

I am pleased you are holding these hearings. I hope you will go heavy for R. & D. and I suppose we had better make the bells.

Thank you, Mr. Chairman.

PREPARED STATEMENT OF CONGRESSMAN FRENZEL

Mr. MCFALL. Thank you, Bill. We will put your prepared statement in the record at this point.

[The prepared statement follows:]

Mr. Chairman: I am pleased to appear before you today to participate in these important hearings on national transportation policy. It is indeed appropriate to begin your deliberations this year with a careful and comprehensive look at problems of (1) setting national transportation objectives, (2) deciding on methods to achieve those objectives, and (3) developing measures to identify accomplishments or progress toward the desired objectives.

First, as some of you know, I have been a proponent of increased R. & D. budgets for UMTA, a proponent of capital spending, and a determined opponent of operating subsidies. I am still persuaded that the first Federal priority in urban mass transit is development of attractive modern systems.

I am particularly interested in the so-called high capacity personal rapid transit. The technology has been elusive, but so is any technology on which we spend only $2 million in fiscal 1974.

Second, I want to focus also on a particularly essential part of national transportation problems: Public transportation in cities and metropolitan areas.

Mr. Chairman, in your radio address on transportation delivered Febuary 16, you pointed out that the adlministration's UTAP proposal would increase requirements on cities and States, forcing them to make difficult choices among expenditure decisions involving increasingly large sums of money, without providing them consistent, comprehensive data and information or a coherent policy context.

I share your concern for this lack of information. Increased local control and flexibility in investment choices are welcome reforms, no doubt. However, shifting decisionmaking authority for complex perplexing urban transportation problems wholly to State and local governments, with little accompanying guidance on expected effects and results of alternative investment decisions does not carry out our responsibility to achieve the best, most effective use of public moneys.

The void in objective, comparable urban transport statistics has hindered the Federal Government in coming to grips with a national policy for improving all urban transportation, ever since Federal transport assistance programs began. Simply transferring authority to States and cities will not alone assure the best possible urban transportation for the dollars spent, and in timely fashion.

This subcommittee is surely aware of the paucity of valid, objective performance measures for all forms of urban transport. Year after year, in reviewing requests for appropriations to support Federal assistance programs in urban transportation, you are confronted with the same dilemma: How to measure the results of the moneys you recommend for appropriation. Let me quote some testimony you heard last year from the UMTA Administrator, Mr. Herringer.

"One area I want definitely to emphasize is the measurement of results. The program [Urban Mass Transportation Assistance] has been around now long enough that we can start looking for some hard evidence of results. We need that evidence in order to feed back and alter the operations of the program. We have to measure and evaluate everything that we do." (Testimony on March 27. 1973, in Hearings on the DOT Appropriations for 1974, Part 1, p. 633.)

Mr. Herringer put his finger on two fundamental problems.

Developing valid measures of performance is a crucial issue. The number of transit systems "preserved" or "stabilized," or the number of buses purchased, or the number of miles of rail installed, are not measures or evaluations of the success of urban transportation assistance programs. Such numbers relate simply to program activity, not to program accomplishments toward the objectives of improved urban mobility.

Nearly 5 years after the UMTA was established in the DOT, 10 years after the Urban Mass Transportation Act, and 13 years after the beginning of Federal

assistance to mass transportation, there still are not credible, comprehensive, comparable data necessary to perform such evaluations, to guide investment and expenditure decisions and to gage their effects, or to truly perceive and measure progress toward urban mobility objectives. The current UTAP proposal unfortunately is also silent on these data problems.

Congress can no longer allow this data dearth to continue. Accordingly, I have recently introduced a bill, H.R. 12368, entitled the Urban Transport Data Act, a bill designed to attack the data void problem, and to do so systematically from the ground up. The purposes of the Urban Transport Data Act are simple and straightforward. The act would establish a Board within the DOT to identify, collect, analyze, and report comprehensive, comparative, objective, and reliable data about the current status and changing trends of mobility in urban areas, together with the operative and financial conditions of urban transport properties. It would perform these functions in order to assist Federal, State, and local governments to:

Determine adequate quality, safety, and quantity of all urban transport systems and services in urban areas;

Support Federal, State, and local evaluations of the efficient performance of urban transport operations and services;

Provide information by which urban transport properties can comparatively analyze and evaluate their own operations and procedures; and

Provide factual information to assist governments in deciding allocations of public funds for assisting urban transport systems and services.

The Board would be located within the Department of Transportation for administrative efficiency and economy, and policy coordination, yet would have an independent status separate from the transport promotional responsibilities of the Department to insure absolute objectivity and credibility of its statistics and reports.

The Board would be responsible for formulating consistent, useful performance measures and systems of accounts to be used in reporting by all urban transportation agencies and properties, public and private, above a certain size. These continuing and comparable data reports would be collected, analyzed, and reported by the Board, together with supporting and informative analyses, and would be available to inform policy and administrative decisions by Federal, State, and local agencies, as well as assist oversight and appropriations activities in the Congress.

The Board would have no regulatory powers over local urban transport systems and services nor would its activities replace or duplicate research and policy studies now conducted by other units in the DOT or elsewhere. The Board would collect and report the facts; other users of those facts could then guide their activities accordingly.

Guidance and criteria for urban transport expenditures cannot be realized without performance measures and good hard evidence of accomplishments. My bill would be the first step in establishing a credible, continuing procedure for producing needed facts and evidence. Please note well that I do not propose another study. Deliver us from more ad hoc studies and research based on incomplete, secondary, or estimated information. Let us get the facts, monitor the facts, make them available to all.

Mr. McFALL. Thank you all very much for your testimony and your presence here today. We will resume our hearings tomorrow on national transportation policy.

WEDNESDAY, MARCH 6, 1974.

WITNESS

HON. FRANK EVANS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. McFALL. The committee will come to order.

Our first witness this morning will be our colleague from Colorado, Congressman Frank Evans.

Mr. EVANS. Thank you, Mr. Chairman.

Mr. MCFALL. Good morning to you.

Mr. EVANS. Thank you, sir.

May I congratulate you on the attractive new hearing room you have?

Mr. MCFALL. You notice we have nice pictures on the wall, too.

Mr. EVANS. Yes, sir.

Mr. YATES. Attractive chairman.

Mr. EVANS. Yes, sir. It is nice to see you, too. Mr. Yates.

I have a statement if it meets with the approval of the chairman and the committee I would like to go through very rapidly and whatever disposition the committee would like to follow, I would be pleased to follow.

Mr. MCFALL. Go right ahead.

STATEMENT OF CONGRESSMAN EVANS

Mr. EVANS. Mr. Chairman: To say that I am pleased that you have decided to hold these hearings would be my understatement of the year, for I believe the development of a national policy on transportation to guide for us for the next 10 to 50 years is absolutely imperative.

In the almost 200 years of this Nation's history we have grown from 13 colonies to 50 States; we are composed of hundreds of thousands of square miles; we stretch from coast to coast and extend to Hawaii and Alaska; we have millions of automobiles, trucks, and buses, and thousands upon thousands of commercial and private aircraft. Each year hundreds of millions of dollars pour into construction and repair of streets, roads, highways, beltways, bridges, tunnels, airports, railroad lines, switching yards and hosts of other capital expenditures involved in transportation.

We are a fast and often-moving society with one out of every five American families changing residencies every year with the majority of them going from the smaller cities and the country to larger metropolitan areas. In fact, some experts predict this trend will result in between 90 to 95 percent of our population being crammed and jammed into 18 major metropolitan areas by the year 2000.

In the past, as our country has grown in size, population and economic activity, transportation systems came into being through the coordinated efforts of industry and local, State and Federal Governments. However, the decisions so made in the past have resulted in transportation systems that are most difficult to attempt to change for the future.

Highways, railroad lines and airports once constructed and in use, not only make it difficult for changes to be made, but also concurrently attract vast sums of additional moneys each year to keep pace with their use. Changing uses of existing facilities are almost impossible for our old planning methods to handle. We are faced with the problem of massive financing of whatever exists without taking the time to plan needed changes.

Under present planning practices, it is almost impossible to design and implement new national transportation systems. For example, present plannning devices simply cannot take on the problem of decongestion of the major metropolitan centers that I referred to previously. While a few new cities have been developed by private firms, there has been no consideration given to decongestion of metropolitan areas

and development of new cities assisted by State and National planning and financing.

Certainly transportation, I believe, has a role to play in this regard.

In short, I believe this Nation is many years late in developing a national transportation policy that could at long last begin to provide a means of developing answers to our future national transporation needs.

Feeling as I do, I began approximately 4 years ago to develop a concept for legislation which would encourage national transportation planning. Three years ago I introduced this measure and have reintroduced it in the 93d Congress as H.R. 3260.

In brief, the bill authorizes the expenditure of Federal funds to help States pay for long range planning in all modes of transportation. It is designed to encourage States and local governments to plan from the grassroots on up to the Federal level. States wishing to do so may join together for the development of regional plans to meet regional needs. Systems decided upon may be financed by loans and grants with funds allocated to states on the basis of 50 percent for population and 30 percent for geographic area. In my bill 6 percent of funds appropriated would go into a emergency fund and 14 percent would be set aside for administration and research.

While I do not pretend that my office together with those who have helped it, have put together the best or the only approach to planning for national transportation needs in the future, my bill has received considerable interest from many segments of industry and it might well be at least a beginning point for consideration by the Congress in drafting better legislation.

Again, Mr. Chairman, I applaud your decsion to hold these hearings and hope they will encourage this Congress, the executive branch, industry, and the Nation as a whole to face-up to this problem and commence developing a national transportation policy based on sound, farsighted planning for this Nation's needs.

Thank you.

Comments on Secretary's Statement

Mr. McFall. Thank you very much, Mr. Evans.

We received a long statement yesterday from the Secretary of Transportation, Mr. Brinegar. We would appreciate it if you would take a look at Mr. Brinegar's written statement and relate it to the provisions of your proposed legislation. Perhaps you would be willing to submit a short statement to the committee concerning Mr. Brinegar's testimony.

Mr. Evans. I would be very happy to.

Mr. McFall. You might include how the proposed provisions of your bill could assist us, in the context of what the Secretary said, in arriving at a national transportation plan or regional planning in the way that you propose it in your legislation.

Mr. Evans. I have not studied his statement, Mr. Chairman.

Mr. McFall. Well, it is a very long statement.

Mr. Evans. But I would be very happy to. I am not an expert in transportation, but I would be very happy to give you my views.

Mr. McFall. We are asking all of the witnesses who come before the committee to do this in the context of what they are proposing to us. When we print this record, we will have not only the statements of the witnesses from industry and from the Congress on their own proposals, but also the beginning of a dialog, including opinions of what the Secretary said and how his statement relates to the various testimony.

DOT REORGANIZATION

Mr. Evans. One thought that has come to me that disturbs me is the thought that the Department of Transportation should be blown up into separate components of one kind or another. I think if that is a concept seriously proposed by people that it would be very difficult for me to agree with it. It seems to me that such a proceeding would be following what we have done in the past, where you single out one transportation system and you think about railroads in one bill, and then some time later on you may think about air transportation in another bill and another bill will come along and you might think about highway transportation, without ever bringing them all together, and looking at what we have and what we could have and what we would like to have to really make some coordinated, conscious planning. But as it is, as you know better than I, once you set up special legislation for one mode of transportation, it almost becomes set in concrete.

Think of the number of years people have tried to crack the highway trust fund. Recently it has been changed, but it was a long, long time before any changes took place in that concept.

I have avoided it in my bill, but I have personal feelings about it. I would think any national transportation plan would have to pull in independent agencies like the FAA and the ICC.

Mr. Yates. What do you mean by pull in?

I was thinking as you were responding to the chairman's question, what your view was on the need for regulatory agencies which now, separately, control various aspects of the Nation's transportation.

In your last answer, do you envision a single agency regulating all the modes of transportation in order to get a greater coordination?

Mr. Evans. Well, ideally, I would like to see, say, a Department of Transportation following a plan which would require the attention and the response and some change on the part of your independent agencies. It does not make any sense at all to me to have an independent agency having something to do with the airlines and another entirely independent agency having something to do with the control and regulation of railroads. There has to be, of necessity, some coordination, some communication and adjustment, an involvement of these two agencies in the development of a national transportation plan. I do not see how you can develop a national transportation plan otherwise.

I was told, and I think probably there is good reason for saying this, that to propose a national transportation bill, as mine originally did, which would abolish FAA, ICC in terms of transportation planning and regulation and pull them into a major department which would have a coordinated approach in future planning, would be just

politically impossible; that you would have more enemies than you would have friends. But I certainly believe some means has to be secured of requiring these independent agencies to reflect national thinking and national planning on all modes of transportation in the whole country. At least it appears to me that we should.

Mr. McFALL. Mr. Edwards?

CONGRESSIONAL INVOLVEMENT IN POLICY DEVELOPMENT

Mr. EDWARDS. To what extent would the Congress be involved with adopting some kind of a policy? It is obvious that each mode of transportation has its own constituency; I guess this has been one of the problems over the years.

Is it your idea that the policy would be developed by the administration or by the Department of Transportation, and then would it be reviewed by the Congress?

Mr. EVANS. Yes, sir. I read my bill over again between yesterday and today and I found so many changes I personally would like to make with it that I am not satisfied with the bill. But the concept embodied in the bill is that States that want to, they do not have to if they do not want to, take part in a national planning of transportation policy, may do so and in so electing set up a transportation department in the State and share in Federal funds.

Of course State funds would have to be involved too. In looking at their transportation hopes and fears for the next 5, 10, 15 years, submitting their plans to the Federal Government through the Department of Transportation, and Department of Transportation then coordinating and having conferences with various States that want to join in this planning, if two or more States have a regional problem, allowing them to get together to get regional plans and submit them.

After a 2-year period of time, require the Secretary of Transportation, having undertaken all of this with the States either singly or collectively, to put together a suggestion for a national transportation policy which would then be brought to the Congress.

Mr. EDWARDS. In effect, what you are suggesting then is what they did with the interstate system?

Mr. EVANS. Very similar, yes.

Mr. EDWARDS. Each State drew the engineering plans for what it thought was necessary for its own State and then they sat down up here and tried to put all of the pieces of the puzzle together.

Mr. EVANS. Yes, sir, very close to that.

Mr. EDWARDS. I am glad to see you here. The chairman knows that this subcommittee has been raising cain with DOT for a long time about not really facing up to the question of an overall policy. They come in here with what they call a policy, but it does not seem like one.

I think we have to move in this direction.

CONSTITUENCIES OF TRANSPORTATION MODES

Mr. EVANS. You know, Mr. Edwards, you made the comment that each mode of transportation has its own constituency, and that is very true. Yet I think that constituency has to be jarred out of the comfort-

able position it is in now. Otherwise, if we just respect what is and allow what is to continue without change, there is not a shadow of a possibility of developing a meaningful national transportation policy. They have to be jarred into change, into new ideas, into coordinating not just mass transportation, but highways, airways, airports, railroads, the whole transportation—they are not separate identities that can afford to continue as separate identities; they have to come together, look at the Nation as a whole, find out the problems, see what is the most efficient transportation available and then what do they want as a national policy.

That is why I mentioned these 18 metropolitan areas. That frankly scares the daylights out of me. The idea of arriving at the year 2000 with 90 to 95 percent of all of our people living in 18 metropolitan areas, with all of the problems we have in these metropolitan areas now, just scares the daylights out of me.

As a matter of national policy, I think it is bad. What happens to people when they get crunched into these major metropolitan areas? Their interest in city council elections diminishes, their interest in school boards diminishes, their knowledge of their elected representatives diminishes. All too often it results in a let John, or Mary, or somebody else be involved in these democratic decisions. That concerns me very much.

I think that kind of problem should be recognized in developing a transportation policy.

FOCUS ON THE LACK OF TRANSPORTATION POLICY

Mr. McFall. This is the purpose of our hearings; to begin to focus the attention of the Congress, industry, and the Department of Transportation on the very problem that you described. We think we need to think about how we are going to evolve the goals and policies that will lead and coordinate industry and the transportation modes in this country, instead of allowing the separation of the modes to continue without national leadership and without regional development.

Mr. Evans. Mr. Chairman, I think you are to be commended for holding these hearings.

Mr. McFall. We appreciate your coming and giving us your thoughts on transportation policy.

Mr. Evans. Thank you very much, Mr. Chairman.

[Comments on Secretary's statement follows:]

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., March 13, 1974.

Hon. JOHN MCFALL,
Chairman, Transportation Subcommittee of the House Appropriations Committee, Washington, D.C.

DEAR MR. CHAIRMAN: I am answering your request that I compare the Secretary's statement with the provisions of my bill, H.R. 3260.

It is my hope this response will not be too burdensome but know you, more than most, recognize we are dealing with no small matter, nor was the Secretary's statement such that a small effort on my part would be wholly responsive to your request.

In that light, I have taken the liberty of adding to his general statement his responses to questioning by your committee for analysis and comparison with my bill.

I do not disagree, but rather in general agree with the Secretary's listing of problems involved in a transportation policy. However, I do have trouble finding any recommended policy itself to compare with the one in my bill, H.R. 3260. The policy statement in my bill is as follows:

"SEC. 101. It is the policy of the United States to provide for coordinated research, planning, and development of a national transportation system within and between the States and at the Federal level which will meet the Nation's needs, both current and for the future, for the same and timely transportation of people and goods. Such a transportation system shall be planned and developed so as to insure that the growth patterns of the population, including the sites of its housing, employment, government, and recreation, are orderly and thereby assist in the solution, with the highest degree of public safety, of economic problems in rural areas and of overcrowding in urban areas. The transportation system shall also be compatible with the national goals of promoting social values and restoring and maintaining environmental quality and ecological values and shall encourage, to the extent possible, a diversified approach to the solution of local, State, National, and international transportation problems."

I agree strongly with the Secretary's premise on page 5 of his statement that "Policy tends to be confused with programs. Thus, many expect policy statements to deal with specific programs rather than principles of policy."

In the instance of my bill, however, I have established the policy already noted and then followed it with implementation through specific programs.

The Secretary's concern with how to make policy, what should be included in the policy, and the lack of a full policy cover some 17 pages of his statement.

Interwoven in his statement of, "How do we stand today," are specific problems, some suggestions about what we should be doing, or what some studies show as desirable approaches. I have assumed it is these you wish me to compare with my bill. The points made by the Secretary and the approaches made by my bill are as follows:

(1) "We object to trust funds which are narrow as to stimulate narrow thinking and planning." I agree in general with the Secretary's position on this matter and, believing that total national transportation is of vital concern to our entire economy and way of life, my bill provides for appropriations from the General Treasury.

(2) "We would emphasize the importance of intermodel transfer points." Here again, I agree with the Secretary that if we are to recognize existing interwoven qualities of all modes and fully allow for each to contribute to the greatest possible degree from its capabilities, we must have intermodal transfer points. These intermodal transfer points could receive up to 90 percent Federal assistance for construction under my bill.

(3) "We would carefully study rail abandonments in the light of interdependence between modes." Here too, I find nothing to disagree with the Secretary on. My bill requires that both the Secretary and the States, in developing Federal and State transportation master plans, study all existing modes, their interrelationships and how each contributes to or alleviates congestion and efficient performance.

(4) "A question of marginal returns doesn't mean a mode should necessarily be abandoned." My bill provides that the Secretary may utilize certain funds provided in order to insure continued operation of a mode endangered by economic or natural disaster and which is found to be in the interest of carrying out the national policy. In addition, my bill would permit State transportation boards to utilize certain portions of their State's allocation for continuation of endangered modes.

(5) "There should be a possibility of trade-off decision at the local or State level between rate subsidy and capital expenditures." My bill provides that States must, through their transportation board approved in makeup by the Secretary, develop intensive master plans relating to all modes and all geographic of the State. These boards also establish a list of priorities for transportation development. Specific guidelines are included in the bill for development of these State plans and priorities. Having developed these priorities the State may then apply to the Secretary for funds from its allocated share to use in meeting these priorities which may well include operating subsidies as well as capital construction. However, no more than 60 percent of a State's annual allocation of Federal funds may be applied to any single project, in a single year, no matter for what purpose.

(6) "There is an ongoing need for continued Federal assistance to upgrade the quality of the heavily traveled highways, including bridges, and to eliminate various road hazards." My bill provides precisely the same treatment for all modes of transportation, but mentions none specifically by name since all are equally covered. This means that should the Federal-aid highway program ever come to an end, highways would receive continuing and equitable treatment with other modes.

(7) "Because the automobile consumes some 30 percent of all liquid petroleum used in this country, it is essential that there be a high-priority effort, both by manufacturers and Government regulators, to improve the vehicle fuel efficiency." Under my bill, 80 percent of the annual appropriations would be for the States. Of the appropriated amount 6 percent could be used by the Secretary for the relief of transportation emergencies. The remaining 14 percent could be used by the Secretary, as he deems appropriate, to administer the provisions of the act and to carry out transportation research not directly related to specific State projects.

(8) "A recently proposed unified transportation assistance program legislation provides additional funds for demonstration programs in rural areas, including use for operating costs. High operating cost is the greatest difficulty in providing transportation service in areas of low population density." I agree with the scope of the problem as related by the Secretary, but not necessarily with the degree of assistance provided rural areas. Under my bill, as previously noted, all geographic areas of a State, not just metropolitan, would have to be included in a State's master plan and in the development of priorities for transportation.

(9) "It is extremely important to recognize that each urban area is different. No standardized solution is possible. An approach tailored to each individual case is called for. Cities that do not now have rail transit systems should carefully consider all alternatives prior to starting new systems." I couldn't agree more and believe the approach in my bill to require a diversified, all-modes transportation board and a careful development of master plans and priority lists would go a long way toward making certain that States, urban areas, and rural areas would look before they leap. Perhaps just as importantly, it would take advantage of existing modes before rushing headlong into new.

(10) "The many problems, structural, regulatory, managerial, labor, affecting the railroad industry are most vividly evident in its poor financial health. We would like to see trains become more efficient freight 'wholesalers' with close coupling to truck lines which would serve, at least in part, as 'retailers.' My bill provides funding for studies of operational procedures for existing modes as well as funds to assist in providing needed changes. Loans, available to existing commercial modes, would be available from State allocations and at rates bearing a minimum of 2 percent interest and repayable over a period of 50 years. Railroads are eligible under this bill, for assistance, as are all other modes.

(11) "We also favor the development of a coordinated nationwide freight car management and control system." I cannot for the life of me see how we could ever approach development of total national transportation without having comprehensive information and data pertaining to all modes of transportation, not just freight cars. My bill provides that: "Secretary, in cooperation with the policy council, shall develop, establish and maintain, for his own use and for the use of the policy council, the State transportation and development data bank. The Secretary shall establish standard terminology and classification of data for use on a nationwide basis and shall develop a system for the acquisition of information in order to facilitate fast and efficient storage, retrieval and communication of information in the data bank. The Secretary may make use of electornic data processing systems and such other equipment and facilities as he considers necessary for such storage, retrieval, and communication. The data bank shall contain information on the location, size, capability, and safety of public and private carriers in all transportation modes and such other information as the Secretary considers necessary in order to carry out the provisions of this act. The data bank shall contain information relative to transportation planning for the future, including such changes in transportation needs, technology, and policy on an annually updated basis as will enable the national plan to reflect constantly a projection of existing transportation modes and those in various stages of research, planning, and development.

(12) "The two key policy issues are: (in waterways, ports and maritime) whether, and the extent to which waterway users should reimburse the Govern-

ment for the operation, maintenance, and possible extension of the system in the future and methods for evaluating the need for proposed inland waterway investments." Again, decisions of this order are not possible without a total national transportation plan, individual State plans and the opportunity to study the precise impact of the various modes upon each other and the need for these. Such studies would not only be possible but directed under my bill.

(13) "There is also need for a thorough review of the routes and service structure of the domestic airline industry, including the appropriate roles of the respective classes of carriers." Here too, in the comprehensive development of a national and individual State transportation master plan, such a study would not only be possible, but required.

(14) In "policy elements," the Secretary suggests, "the Nation's transportation system should, as much as possible, be provided through the competitive forces of the private sector or, if the private sector is inappropriate, by State and local governments." The Secretary's statement was all right as far as it went, but unfortunately, didn't go far enough. I think most would agree that it would be fine if the private sector involved in transportation could finance the improvement, expansions and operation necessary for the Nation. The current state of our transportation system, however, provides rather graphic proof this is not possible. Testimony before your committee has indicated some $77 billion would be required for total urban transportation alone. I cannot visualize circumstances under which municipalities and States can provide this kind of money, let alone that needed for the total transportation we are talking about. Additionally, the Secretary seems to perhaps imply that, if given Federal aid, the States, local governments and private industry should then be left to shift for themselves. My bill provides up to 90 percent assistance but also provides for extensive guidelines and criteria in developing and carrying out plans.

(15) "When Federal expenditures are used to finance transportation investments or operations, these expenditures should be recovered from the users and other beneficiaries in a manner that is appropriate to the degree of benefits received, unless widely accepted national policy directs otherwise." My bill provides, as indicated earlier, a minimum of 2 percent interest and repayment on loans over a 50-year period. The bill also provides that the Secretary shall take necessary steps to make certain the public investment is protected and provides for specific steps to be taken in case of default on payment, or economic failure. The measure also provides that repayment of Federal funds shall be on the same basis and percentage as reflected by net proceeds and compared to the Federal investment. Thus, it would not be possible, under my bill, for a mode to borrow money for improvements for operational procedures and then pay out all receipts in the form of dividends to stockholders.

(16) The severe transportation problems now present in our large urban areas and the relationship of these problems to other urban issues, require a special Federal effort, including some general taxpayer support. This effort should be directed toward encouraging "(A) establishment of non-Federal governmental mechanisms that embrace the full urban area and have authority to make and implement all relevant urban plans." (B) The development at the local level of urban plans that properly relate transportation needs to future land use plans and community development objectives; and (C) the development of plans that are appropriate to the structure and size of the urban area." Again, I agree with the Secretary. Under my bill, the Secretary of Transportation would be required to form a national transportation policy council. Members of the council would include the Secretary of Commerce, the Secretary of Health, Education, and Welfare, the Secretary of Housing and Urban Development, the Chairman of the Civil Aeronautics Board, the Administrator of the Environmental Protection Agency, the chairman of the Federal Maritime Commission, the chairman of the Interstate Commerce Commission and the Administrator of the National Aeronautics and Space Administration.

It would be the duty of this Board to coordinate their various agency programs in such a manner as to comply with the policy set forth in this act. This would, in effect, as set forth in the bill, coordinate all of these programs, together with transportation, to prevent the very abuses or problems set forth by the Secretary above.

In addition, States in developing their individual plans, would have to take into consideration: Existing State transportation systems of all modes; their interrelationships, benefits and deficiencies; population patterns in the State and

projections thereof; patterns of commercial development in the State and projections thereof; land use patterns in the State and natural resources and environmental qualities in the State in need of protection; the extent of and need for coordinated transportation systems and planning with other States; the need for development, construction and operation of new systems of transportation, including new modes; and the development of an appropriate balance of transportation systems and their schedules by the use of intermodal transfer points.

(17) "Rural public transportation policy is today in an uncertain state with numerous isolated rural areas now able to be reached only by private automobile. What are the proper transportation modes for rural services? What is the role of local air taxi service? How should rural public transportation that is not self supporting, be financed?" I believe these points too can only be answered by a total transportation study of all geographic areas within the States and the Nation as a whole. This is provided and required under my bill.

(18) "Finally we must advance the overall level of knowledge about the Nation's transportation system, its capabilities and its problems." I believe this would be met by development of the studies I have referred to as well as the transportation data bank required under my bill.

Again, as I indicated during the hearings, I am not so concerned that my particular bill be enacted as I am that the total national transportation policy be developed and a means to provide equitable implementation of that policy for all modes.

It is my belief we share this conviction of need and my hope this comparative study will meet your request and assist you in this most important matter. Please do not hesitate to let me know if I may provide you with further assistance.

Sincerely,

FRANK E. EVANS,
Member of Congress.

WEDNESDAY, MARCH 6, 1974.

WITNESS

HON. BROCK ADAMS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. MCFALL. Our next witness is our distinguished colleague from the State of Washington, Brock Adams, who has made a number of statements in the past several years on the subject of transportation policy. He serves on the Legislative Committee that is concerned with this subject.

We are very pleased to have you here, Mr. Adams. We would like to have your statement and your comments about transportation policy at this time.

Mr. ADAMS. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee, I want to say how much I appreciate the fact that you are holding these hearings. I think they are absolutely essential. I think they are something that follow on with the oversight hearings that we on the Commerce Committee have had, but I particularly am pleased that you are holding them on national transportation policy. We have been demanding a statement of national transportation policy from various administrations for about 10 years.

As we all know, in 1958 we had our last statement of national transportation policy and we have not had one since then. I know that you have had the Secretary of Transportation testify before you, and other members. I have not had a chance to review all of the testimony.

I would like to ask the permission of the committee, Mr. Chairman, that my statement might appear in full, and then I will summarize and of course be most happy to discuss with you any particular aspects of it.

PREPARED STATEMENT

Mr. MCFALL. We will insert your statement in the record, Mr. Adams. You may then make any comments that you desire.

[The prepared statement follows:]

THE CRISIS IN AMERICAN TRANSPORTATION AND ENERGY POLICIES

It didn't take the bankruptcy of the Penn Central, the recent truckers' strike, the 50- and 55-mile-per-hour speed limits, the cutbacks in scheduled air service, the overburdening of our struggling rail passenger service or the long waiting lines at our Nation's gasoline stations to convince many of us that America's transportation industry—as well as its energy system—is in trouble. To this Member of the House Commerce Committee, having dealt recently with both these crises, those troubles have been obvious for some time. This past year alone we on the committee have been forced to deal with the near total collapse of the Northeast rail system, revenue problems of the airport and airways trust fund, financial and service difficulties of Amtrak, mixing rule problems, and an independent trucker work stoppage.

The crisis in the energy area hardly needs to be documented—each of us has waited long hours in gas lines and paid higher prices for heating fuel and gasoline. The relationship of the transportation and energy crises, further, makes vital the immediate promulgation of a new transportation policy. For those of us who deal with the transportation world, a national transportation policy is rather like the abominable snowman. We know it is supposed to be out there somewhere on the mountain but all we see are occasional footprints and reports of its existence.

THE TRANSPORTATION "NONSYSTEM"

If the transportation industry were a monolithic giant, it might be easy to draft quickly the legislative reforms necessary to modernize it. It is, of course, not. In fact, we have today a mix of public and private ownership and operation, oversight and regulation by various agencies and departments (whose jurisdictions overlap and whose policies frequently conflict), and little sense of national purpose or direction. Some forms of transportation are regulated in minute detail, as to entry, rates, service and operations, while other forms operate free of any effective economic regulation. In some segments, such as railroad rights-of-way, we have little or no public investment. In others, such as highways and waterways, we have nearly 100 percent investment. In fact, today's transportation "system" might more correctly be described as a "nonsystem."

This "nonsystem" is highlighted by the fragmented structural organization of the Federal Government toward transportation. Within the executive branch, the Department of Transportation is charged with disparate functions which include urban mass transit, the protection of U.S. coasts, air traffic control, highway safety and the St. Lawrence Seaway. But the Department of Transportation does not have authority over the development and regulation of civil aviation (which is under the Civil Aeronautics Board); the protection and regulation of waterborne shipping (under the Federal Maritime Commission); the regulation of the Nation's railroads, trucking companies, bus lines, freight forwarders, water carriers, oil pipelines, transportation brokers and express agencies (under the Interstate Commerce Commission); the development of flight within and outside the Earth's atmosphere (under the National Aeronautics and Space Administration); or the administration of the retirement system for retired and disabled railroad employees (under the Railroad Retirement Board).

Here in Congress, unfortunately, the situation is not much better. On the House side, regulated common carriage is handled by the Commerce Committee, the merchant marine by the Merchant Marine and Fisheries Commerce, the highway trust fund by the Public Works Committee, urban mass transit by the Banking and Currency Committee, the space program by the Science and Astronautics Committee, and appropriations for many of these activities by different Subcommittees of the Appropriations Committee. On the Senate side, the situation is only a little better.

Finally, we have in our transportation "nonsystem" a skewed sense of priorities. Of the money that we Americans spend on transporting people and goods, over 80 percent has been going for highway transportation. During the last year for which I have accurate figures, we spent $93.5 billion in buying, fueling, cleaning, insuring, repairing, and parking our cars and in providing roads for them. We spent only $13 billion to transport the public on our airlines, buses, trains and transit lines. Comparatively, Americans are spending 6 times as much for oil, gas and tires for passenger cars as they are for passenger trains, intercity buses, mass transit, and local buses, all put together. Public transportation, relatively speaking, is shrinking at a time when it is desperately needed to move large numbers of people in congested areas with a minimum of energy use, noise, confusion and pollution.

THE EFFECT OF THE ENERGY CRISIS ON TRANSPORTATION

Mr. Chairman, the recent unilateral imposition of the 50-mile per hour speed limit painfully illustrates the crisis—and band-aid—approach of the administration toward both energy and transportation problems. As far as I can determine, before announcing the reduced speed limit, no one bothered to ask the truckers—who carry more than 22 percent of the intercity freight—what the effect of a 50 mile-per-hour speed limit would be. My information is that this action would have been counter productive—and expensive to the consuming public—since truck terminals and operating runs are based on 60 mile-per-hour operations, which determine the length of a day's run. Further, trucks were built to use fuel most economically at the higher speeds rather than the lower.

Another example of poor planning by the administration was the proposed fuel allocation for general aviation and private planes. Someone apparently decided it would be popular with the public to ground certain executives who travel by corporate jets. It turns out, upon more careful examination, that general aviation uses less than 2 percent of the jet fuel consumed in the United States. Grounding the entire fleet for a year really would not accomplish much. Yet, because of the hasty action, Cessna Air Craft was forced to lay off 2,500 aircraft workers in Wichita, Kans.

LEGISLATIVE DIRECTIONS

It is difficult for one Member of Congress, serving on only one major committee with jurisdiction over only a portion of the transportation industry, to survey the immensely broad field of transportation and to suggest answers to many-faceted problems. It is possible, however, to identify priorities, to recognize problems, to see critical needs and to suggest answers to particular transportation problems.

That is why I have authored and supported legislation to restore rail passenger service, to develop our Nation's airport and airways system, to rejuvenate the Northeast rail network and to modernize the regulatory scheme for surface transportation carriers. I will next week be introducing legislation which will provide a program of guaranteed loans for: (1) the purchase of rolling stock, and (2) investment in improved freight yards, rebuilt rights-of-way and facilities. I believe these improvements will also have a beneficial effect on passenger service, since 40 percent of Amtrak's trains now run on inadequately maintained track (especially that of Penn Central). Once this track is brought up to standard, trains can run quickly, safely, and on time.

These areas are ones of high priority. They have been testified to by spokesmen for consumers, labor, Government agencies, and the transportation industry. But I am the first to admit, Mr. Chairman, that these needs must be addressed in such a fashion as to lead to a unified, comprehensive approach. That is why a national transportation policy is so critical.

A NATIONAL TRANSPORTATION POLICY

It is clear to me that the Department of Transportation does not have the resources, the desire, or whatever it takes to develop and to attempt to implement—a national transportation policy. For those who have taken former Attorney General John Mitchell's advice, to "watch what we do, not what we say," we have found little to watch—as with the Abominable Snowman. All I have seen is a few tracks, and those are now being obscured by the snow.

We have had, from the Department of Transportation, a plethora of paper and a paucity of progress. In 1971, we received a document entitled, "A Statement of National Transportation Policy." It contained 41 pages of "problems," "existing policies," "framing objectives," and "the status of transportation in America." Its recommendations for action were for: (1) transportation revenue sharing; (2) the reorganization of the Federal executive branch; and (3) "the reexamination of Government's economic regulation of the transportation industry."

In 1972, the "national transportation report" was unveiled. It was a slight improvement over the prior report, primarily because it was only 25 pages long. Like its predecessor, the 1972 version was long on "outlooks," "overviews" and "status reports," and short on recommendations. It did propose a single urban fund, which is a step in the right direction. But, as most bureaucrats are want to do when pressed for answers to tough questions, its recommendations were aptly titled "guidelines for future action." It seems to me that we have had enough overviews and guidelines; what we need is a commitment for action

I might add, parenthetically, that for some reason I cannot locate or do not have a copy of the 1973 version of the DOT's transportation report. If it is anything like the earlier reports, I have not missed too much.

To repeat, Mr. Chairman, what is necessary is a total commitment of this Nation's best resources—its manpower, talents, and energies—to solving the immediate transportation crisis and to developing a rational plan for the future.

To begin this total commitment, I would suggest the following:

1. A unified transportation budget.—A unified transportation budget would show, for example, not only what the Coast Guard and the St. Lawrence Seaway Development Corp. are spending as agencies, but what each transportation mode is receiving on a functional basis, what it is recommended to receive under a coordinated systemwide approach, and what steps are being taken to achieve that result. Further, budget planners should look not at theoretical economic models but at how Federal expenditures help or could help coordination of the various transport modes. Transportation is a competitive industry, but much of it is regulated by the Federal Government. Such regulation, along with financial assistance, must be evenhanded, innovative and with an eye toward coordination.

2. A select committee on transportation or, in the alternative a blue-ribbon commission on transportation policy.—Now, Mr. Chairman, I am aware that most Commission reports end up on remote shelves in public libraries and secondly, that most select committees wind up being permanent committees with large staffs and even larger budgets. But such is not always the case. President Johnson's Crime Commission ("The Challenge of Crime in a Free Society") performed extremely valuable work and made important contributions. Its effort paved the way and led directly to the 1968 Safe Streets Act and other anticrime legislation. I hope that the same would be true of a new committee or commission on transportation.

3. A single trust fund for transportation.—At present, we have an airport and airways trust fund and a highway trust fund, both of which consist of revenues generated by users of the particular system and both of which have led to intesive capital development of the airport and highway system.

The trouble with single purpose trust funds is that they generate such momentum and interest group support that they become self-perpetuating. Further, and more costly to transportation as a whole, they benefit certain segments of the transportation industry at the expense of an integrated, coordinated transport system. The interstate highway system, for example, nearly put the Eastern railroads out of business: One year the New Haven Railroad made a lot of money hauling sand, gravel, and cement; shortly thereafter the same sand, gravel, and cement was used to build a superhighway that helped propel the railroad into bankruptcy.

A single transportation trust fund, which would likely have to include new user charges (perhaps on shippers, rail passengers and others), would not end revenue problems in transportation. But it would lead to rational decisions on which mode, which function, which types of transport vehicles and which functions should be assisted financially. It would also lead to decisions on a basis that would result in coordinated movement of people and goods. The piecemeal approach must be ended.

4. A simplified statement of national transportation policy.—I cannot understand why it takes 41 or 26 pages to attempt to state what this nation's transpor-

tation policy should be. I have, for instance, proposed a statement of policy directed toward the regulated, interstate transportation industry, as follows:

> The Nation's transportation policy should be directed toward creating and maintaining a privately owned and operated intermodal interstate system regulated by the Federal Government in the public interest. The regulations should be uniform for all modes and the degree of regulation should vary with the degree of monopolization existing at any particular point in the system. Government regulations should thus take into account the importance of both transportation and shipping units in a particular market with competition allowed to set individual prices above cost where neither shippers nor the industry have power to control rates and quality of service. Otherwise the rates will all be set publicly by governmental regulation. The ICC should be given a period of time to demonstrate whether it can overcome its present regulatory lag; if not then the regulatory system should be restructured so as to produce prompt and fair regulation.

I cannot understand why DOT, with all its resources, is unable to make a more comprehensive, but equally concise, statement encompassing all of transportation.

Mr. Chairman, unless we as a nation move quickly to improve our transportation system each citizen will be paying for too much in scarce tax dollars and transportation charges for the inefficient movement of people and goods. It is difficult, admittedly, to generate interest and activity in this area, since so few people appreciate the role of transportation in the Nation's economy. But we must provide the spark which lights the fire of concern; we must get on with the job of developing a national transportation policy that will work and that will produce practical results. We have had enough "overviews"; what we need is action!

COMMENTS ON SECRETARY'S STATEMENT

Mr. ADAMS. Thank you, Mr. Chairman.

The first thing I would like to state is that I think we have to look at the relationship of the American transportation system to the enery crisis, not on a piecemeal or emergency or a crisis basis. The reason for this obviously is the energy crisis. As I mentioned in my more formal statement, we on the Interstate and Foreign Commerce Committee have brought before the House, as have other committees, various band aids, like 55-mile-an-hour limit to save energy, or daylight savings time to save energy.

In doing this, I think we have caused great harm. It sounds very good, it looks very good, but the statistics as to how much we actually save from these measures have never been available to anyone, and what we found happened in the transportation industry was of course chaos. Nobody talked to the independent truckers or the other truckers, for example, as to what would be the effect on the transportation system if you went to a 50-mile-an-hour speed limit, when all of the stops are calculated on 60 miles an hour. All of their schedules on 60 miles an hour, all of their driving hours under the safety rules and the whole system was based on one speed limit, and when we changed it, we got into the chaos that eventually led to the independent truckers' work stoppage and other factors.

We had the same thing happen with daylight saving time on energy.

What I think we have to do now is, we have to look at our transportation policy. It reminds me somewhat of the abominable snowman. which is that it is supposed to be out there some place, it wanders around, but all we ever see are some tracks in the snow to indcate that it does exist.

As I have said to people recently, with the amount of snow that we have had falling, we cannot even see the tracks any more. So that we do not have anyone directly stating what our policy should be.

Now just briefly, and I know you gentlemen have had a great deal of experience during the past decade as I have with what the transportation system is, and I refer to it as a nonsystem. The reason it is a nonsystem is, it is not a monolithic giant.

Mr. McFALL. I must say that if the tracks of the abominable snowman are in as bad a condition as the railroad tracks in this country, then he is not moving very fast.

Mr. ADAMS. Mr. Chairman, that is absolutely correct.

Incidentally, before I go further, I want to thank you and the other members of this committee for helyping us with trying to do something with the Northeast railroads when that bill came up.

A very difficult and complicated bill—if it had not been for the help of a number of you, with knowledge, saying this has to be done, we have to do something about the trackage and put the railroads into a condition where they work, why this bill would not have passed. That is part of why I am here this morning.

I am deeply concerned that if we do not have a specific policy, why, it really will not work. In other words, if it is not administered well, we are going to have a disaster, we are going to have spent a lot of loan guarantee money that the taxpayers will have to pick up, and I do not think it will work unless we go to an intermodal system.

Now, I just want to outline, and I do not have to tell the members of the committee this, but I would like to review with you just briefly, so that the public has some idea of why we have a nonsystem, not only in the industry itself but within the Congress.

ORGANIZATION FOR TRANSPORTATION

For example, let's look at how we have organized the Federal Government to deal with transportation. Within the executive branch, the Department of Transportation has such things as mass transit, protection of the U.S. coast, air traffic control, highway safety and the St. Lawrence Seaway. But the Department of Transportation does not have authority over development of civil aviation, that is under the CAB, protection and regulation of waterborne shipping, that is under the Federal Maritime Commission, regulation of the Nation's railroads, trucking companies, freightlines, freight forwarders, water carriers, oil pipelines, transportation brokers and express agencies—under the Interstate Commerce Commission; the development of flight within and outside the Earth's atmosphere, we may want to get, because eventually you may have vehicles that will flip out of the atmosphere and back in, because of problems with fuel saving and so on, that is under the administration of NASA, or the administration of the retirement system for retired and disabled railroad employees. That is under the Railroad Retirement Board.

I just want to tell you, I am not saying gloom and doom, but gentlemen, we are going to have to have the Railroad Retirement System up before this Congress before the 1st of July, because we have only extended it to that date. At this point we have neither the final recommendations of what should be done with it, whether it should be folded into Social Security, whether it ought to be a two-tier system, or a pension system, but I am indicating some of the ways in which all of these come out of the executive branch in different systems.

Now unfortunately, in the Congress, with the exception of this committee, which generally funds most transportation matters, the situation is not any better.

On the House side, regulated common carriage is under the Commerce Committee, the Merchant Marine under Merchant Marine and Fisheries, Trust Fund in Public Works, urban mass transportation in Banking and Currency, space program in Science and Astronautics. Now with this kind of a situation, we do not get an intermodal system. We try, it is not a question that we do not talk to one another about these, but each comes up from a separate area and is handled separately.

Now what does this produce? What it produces is a highly skewed system toward, and what it has, highways and very high fuel consumption vehicles.

I picked up a few statistics for you, you are probably familiar with them, but let's repeat them for just a moment. It goes into perspective for the final thing that I am going to recommend.

In the last decade we have spent 80 percent of the Federal money that we are spending on transportation on highways. Last year we spent $93.5 billion in the United States, in buying, fueling, cleaning, insuring, repairing, parking our cars, and providing roads for them.

We spent $13 billion to transport the public on airlines, buses, trains, and transit lines. One of the problems with this country is a lot of people still think the buslines are competing with the railroad lines or competing with the airlines for the traffic between cities. This is a myth.

The transportation between cities up until the last 3 months, when you have had the energy crisis, has all gone by automobile. In other words, the total regulated system takes about 11 percent.

Now that is going to change, not because I say it or any of us say it, but simply because you are not going to have the fuel, or at the prices.

Now, what are the American people going to do at that point? Are we going to simply stop traveling, are certain industries going to go out of existence?

Now I think in order to get a proper legislative direction, we have to stop just rifle-shooting it. I will give you one more example.

I mentioned daylight saving time, the 55-mile-an-hour speed limit. Many of you will remember that there was a proposal that came up too on jet air fuel, saying the thing we ought to do with this is that we ought to cut out at least 50 to 75 percent of general aviation. That looked like it was a very popular thing to do. A few people flying on weekends and the few executives, we could cut them out.

When we finally go through looking at it, we found they consumed less than 2 percent of the jet fuel, they laid off 2,500 people in one factory in Wichita, and yet the savings that were going to happen fuelwise were miniscule in terms of our total jet fuel problem. So I think we have to stop just picking these thinks up one at a time.

DOT RECOMMENDATIONS

I have heard many, many times, from the Department of Transportation—and I happen to think the Secretary is a very fine man,

he is sincere and we have worked through many legislative problems—that there is a transportation policy. But since 1970 we have received only such statements as "A Statement of National Transportation Policy," containing 41 pages of "Problems," "Existing Policies," "Framing Objectives," and "The Status of Transportation in America." Its recommendations for action were: transportation revenue-sharing, reorganization of the Federal executive branch, and reexamination of the Government's economic regulation of the transportation industry."

That was just about it. In other words, we are supposed to look at it and see a transportation policy appearing from the sky. These things have been talked about for 10 years, but nobody said specifically how to do it.

In 1972, we got the national transportation report. It was a little improvement over the other because it was only 25 pages instead of 41. Like its predecessor, it had outlooks, overviews, status reports, but it was very short on recommendations. It did propose a single urban fund for transportation and I think that is a step in the right direction.

Now I have not seen yet a copy of what the Department is going to come up with as a 1973 version of the report, but I am really not holding my breath for it. I do not think within the Department they can reconcile their views as to what they think should be done, because of the conflict between regulated and unregulated carriage, between the Council of Economic Advisers, who say we ought to have a free market competitive society and those in the ICC who say we ought to have regulation.

RECOMMENDATIONS OF CONGRESSMAN BROCK ADAMS

So I recommend the following four things:

We ought to have a unified transportation budget which shows not only what the Coast Guard and the St. Lawrence Development Corporation are spending as agencies, but what each transportation mode is receiving. So then, you gentlemen, as well as those of us in the authorizing committee and other Members of the House and of the Senate can see what we are putting into each area, either regulated or nonregulated as Federal funds.

Second, I think we ought to either have a Select Committee on Transportation, which can be temporary, or an alternative, a Commission on Transportation Policy; in other words, one group.

We had this work very well, for example, with President Johnson's Crime Commission. It comes in and says in an overview, because all these committees have general jurisdiction, we are not going to try to take your jurisdiction away, but this is where we are and this is what we think should be the new transportation policy, updating the 1958 policy.

Third, I think we need a single fund for transportation. At the present time, we have an airport and airways trust fund, a highway trust fund, we have a specific type of funding that we do for the merchant marine. These various funds are never coordinated together as to whether or not the division is fair or whether it is meeting the needs of the people who are using each system.

POLICY STATEMENT

Finally, I think we ought to have a concise statement of national transportation policy. Now I am willing to give you one, at least what I think about it, and if I were the Secretary of Transportation I would come before you and I would say something like this: The Nation's transportation policy should be directed toward creating and maintaining a privately owned and operated intermodal, interstate system, regulated by the Federal Government in the public interest. The regulation should be uniform for all modes and the degree of regulation should vary with the degree of monopolization existing at any particular point in the system. Government regulation should thus take into account the importance of both the transportation and the shiping units in a particular market, with competition allowed to set individual prices above cost—that is very important.

We get away from these below-cost rates which we have in a horrendous degree in the railroad industry. Above cost, where neither shippers nor industry have the power to control rates and quality of service.

Remember, in a great many parts of the system we have a monopoly system.

Otherwise, in other words, if they are not set competitively and there is a monopoly, otherwise the rates will be set publicly by Government regulation. The ICC will be given a period of time to demonstrate whether it can overcome its regulatory lag and, if not, then the regulatory system should restructure so as to produce prompt and fair regulation.

Now, Mr. Chairman, I feel that we are at a point now, with the energy crisis, where there is going to be a major shift in the way goods are handled and produced. I think we are going to have to go to more public modes; by that I mean people are going to have to ride buses or they are going to have to travel in carpools or they are going to have to hire cars on a lease basis at the end of public transportation units. We are going to have to carry them by trains and planes and ships again, because I do not see, and I know the conflicting reports go back and forth as to whether there is an energy crisis or everything is going to be fine, but all of us who have worked in transportation predicted that your oil resource, which is a depleting resource, it is not unlimited, cannot be used for an indefinite period for the basis of America's transportation system.

Now we predicted out 10 to 15 years we would be out of this product. What is occurring right now is an earlier manifestation of what is going to undoubtedly be a longrange situation in any event.

So what I have tried to indicate here is how I think the Nation should look at its transportation policy and at its public role, which the Federal Government has to do and do something about it.

Mr. Chairman, I have concluded my statement.

DECISION ON NEXT COURSE OF ACTION

Mr. McFall. Thank you very much, Mr. Adams, for a most imaginative and excellent statement on transportation policy and the problems that we face in this country.

We are especially glad to have you before the committee because we consider you one of the leaders in the Congress on this particular subject.

One of the purposes of this committee hearing is to focus the attention of the Department, industry, and Members of the Congress on the problem. After we have evaluated the testimony from these hearings, I would like to sit down with you and the other members of your legislative committee to determine how we should proceed in the House of Representatives in further studying this problem.

Should we continue to urge the Department of Transportation to study this problem and come up with a national transportation policy? Or should we authorize your committee, either a standing subcommittee of your committee or a special subcommittee, or even a special committee of the House, itself, to go ahead and further study this problem?

I, personally, would like to see the matter decided by Mr. Staggers and the other members of your legislative committee.

I hope that we will receive enough information during these hearings so that we can make a determination on whether we should continue to wait and assist the Department or whether we should go ahead independently. Perhaps, it would be the best thing for the country if we had two "tracks" in our transportation system review. We could have investigations proceeding concurrently by the Department and by the House Committee on Interstate and Foreign Commerce. Perhaps that would provide us with the kind of imaginative thinking which characterizes the testimony which you have given us this morning.

INVOLVEMENT OF OTHER COMMITTEES

Mr. ADAMS. Mr. Chairman, I might just say one thing. I think what you are doing, because of your wonderfully neutral ground here among a number of legislative committees—one of the problems is that I would hope that perhaps you might urge the chairman of the Banking and Currency Committee, the chairman of the Science and Astronautics Committee, and the chairman of the Public Works Committee to contribute in from their committees perhaps the people who work on transportation within them, because we run into the problem as we did with the Northeast railroads, where we are trying to regulate interstate trains, and then you get to the point where you are into the commuter system, which is basically urban mass transportation under another committee, and yet the same company is going to provide tracks for both, and certainly the fact that you may live 35 miles instead of 15 miles is not going to change your problem.

Mr. MCFALL. That is a good argument for a special committee of the House, which would have representatives from each of the committees of legislative jurisdiction. Perhaps, that is the way we ought to go to solve this problem. Perhaps you are right.

Mr. Yates?

CONGRESSIONAL TRANSPORTATION POLICY COMMITTEE

Mr. YATES. I want to congratulate Mr. Adams upon a very constructive, valuable, and an interesting statement.

I know of his fine work in the field of transportation over the years, particularly in the field of rail transportation. The ideas he suggests in his statement are stimulating and imaginative. They certainly ought to be explored very, very seriously.

First, have you proposed a unified committee to the Bolling committee on the subject of transportation by any chance?

Mr. ADAMS. I have not, though I have talked with Representative Bolling about it. In other words, they have, as you know, proposed that Public Works take over a great number of these funcions.

Mr. YATES. Yes.

Mr. ADAMS. I have just suggested to him the practical problem that that is probably going to be fought by a number of people who have already their established jurisdictional areas.

Mr. YATES. I think this is true and probably the suggestion of the Chairman bears further exploration.

As I listened to your testimony, I thought it would be well if we had an ad hoc committee consisting of perhaps the Chairman and ranking member of each of the four or five committees that you have outlined and perhaps one or two other members of each of those committees, to sit together to try and draw up a national declaration of policy for transportation.

Even in this committee, which supposedly has jurisdiction over the budget of the transportation facilities, we are still not unified, because the Maritime budget is still in another subcommittee. And that, too, reflects a division here.

SINGLE TRANSPORTATION TRUST FUND

I like your idea of a single trust fund for transportation. Those of us from the cities, who have been trying to find a way to use some of the funds for local transportation or for intercity transportation, have not met with a great deal of success up to the present time. But something has to be done to provide the funding for the transportation in the cities.

An overall single trust fund to carry out a unified transportation policy for the country is a very constructive idea.

ORGANIZATION FOR TRANSPORTATION

Now, with respect to your statement of national transportation policy, how do you propose to have a unified transportation policy as long as you have the diverse elements that now exist?

Would you do away with the CAB? Would you do away with the ICC? Would you combine them?

Would you have a new board? How would you have the overall unification?

COMBINED REGULATORY BOARD

Mr. ADAMS. I would have first a combined board. Let me tell you why that statement, I think, is important.

Under the 1958 act, surface transportation—in the Ingot Molds case—it says that each mode of transportation shall carry that which it can do best.

You have, for example, with agricultural products, the railroads are regulated and have to publish their rates, the truckers are split into

two groups, some of which have to publish rates, the great majority of which are unregulated and do not publish their rates at all; the water carriers are split where part do not even publish their rates at all and you cannot find what they are, and part of them are required to file a publication.

So I think that has to be combined under one. You ought to treat them all the same. In other words, you ought to either regulate them all or deregulate them all on a commodity basis.

My feeling is that you regulate, and the theory that we came up with in the bill we got out of the subcommittee last time is, you lay a floor under them that says you cannot go below cost, because there is no point in losing a nickel on every item and then making it up on volume.

Incidentally, that is what the Penn Central did—a lot of stories about why the Penn Central did: One-third of their rates between New York and Chicago were below because they felt they were competing with the truck lines and they just competed themselves right out of business.

Now, with the airline transportation, I would be satisfied to have it tied to the other surface modes, too. It has the advantage of being a newer system and everything is regulated there. In other words, you don't have the spotty situation you do with surface transportation. Now whether you want to do this with a single board and wing is under the—in other words, one board on top and then sepcialty boards underneath, which, incidentally, Mr. Chairman, is how we originally constructed the Department of Transportation. It did not come out that way, but that is what was supposed to happen. But then your overall board is looking at the total transportation system and division of rates, intermodal connections, the competitive or noncompetitive aspects, in other words, where you are going to have a monopoly and where you can have competition, are then set nationally.

Then you let the free market system go with it. I support, to a degree, the fact that you ought to have a great deal more flexibility in rates above this cost level, but I do not want to go to what they call this zone of reasonableness of letting the free market completely decide it, because in many areas of this country the transportation system, where you have regulations set up to control it, is not in control. The shipping groups are in control. And they hammer out the little independent business who must rely on public transportation rates by going in either with private carriage or with sweetheart contracts and cutting 2, 3, 4 cents off in the ultimate market and then the little fellow gets put out of business. That is what that statement is directed toward and why I suggest one board.

Mr. YATES. It is a very good statement. I want to commend Chairman McFall, too, for holding this overview, because, as of now, our subcommittee is committed to the prospect of appropriating funds to pay the losses of almost every segment of the transportation industry in the country. I noticed in the paper the other day that Pan American Airways is starting to talk of going back on a subsidy. Perhaps this is an indication of what may happen. Certainly we know of the subsidies we are paying the rail carriers. I thought Mr. Evans, who preceded you in the witness chair, made a cogent point in talking about the need for trying to solve the problems of those who live in the cities, because that is where most of the population is. That prob-

lem must be solved, but the fact is, you have to take care of the rest of the country, too.

I would like to see this matter really attacked seriously by the legislative committees because I do not know that there is very much that we in this committee can do. I agree with you it is almost a totally neutral ground for looking at the problem but I think it is sufficiently important for a select committee to attack at this time.

Thank you, Mr. Chairman.

Mr. McFall. Mr. Edwards.

CONGRESSIONAL ROLE

Mr. Edwards. Thank you, Mr. Chairman. I commend the gentleman also for his fairness in trying to present this. The easy cop-out would have been to blame it all on the administration, not necessarily this one, but administrations preceding it as well. The truth is, and I think the gentleman has recognized this, that Congress has a large share of the blame and a large share of the responsibility in solving it. It seems like one of the easiest things we do is sit back and wait on some administration to send us legislation so we can tear it apart and probably not pass it anyway.

I would hope that the gentleman would make a strong case before the Select Committee on Committees. If we are ever going to resolve the problems from the executive side, I think we have got to have the unified approach in the Congress in dealing with these problems. It would please me greatly to see a Transportation Committee charged with the responsibility for handling all legislative affairs having to do with transportation in this country. We are talking about Banking and Currency, Science and Astronautics, Interstate and Foreign Commerce and Merchant Marine and all the rest, they all ought to be in one.

As I said to Mr. Evans earlier, each mode has its own constituency. That is true of the Congress. Each committee has its own constituency and proprietary interest in that part of the transportation system and it is a very jealously guarded proprietary interest as you know. If we are going to solve it, I think we have to look inwardly at our own structure. I think you put your finger on much of the problem.

Let me ask you one question: We keep talking about trust funds. One of the big hangups we have had in developing different modes of transportation is the question of where you get revenues to put into a trust fund to operate that mode. Highways we have handled very well. I must say, nobody wants to take the highway money and put it over into mass transit, at least that has been one of the big debates as you know. Why, really, do we need a trust fund, even a single trust fund?

NEED FOR TRUST FUNDS

Mr. Adams. Well, I am not certain that we do, that you could do it on a direct general appropriation out of the general fund for these items. I think eventually we may get there. I was trying to deal in the area of the possible and I think that we have had so firmly implanted, and the constituency is so strong for the individual trust funds tied to the users, that that cannot be broken right away. But I have no objection toward it being broken at some time in the future. And the argument that I have made with regard to the trust fund and urban

mass transportation funds and highway users funds and so on, is that we are not trying to be hostile to the automobile, when we are talking about funds being used for an intermodal system, in other words, mass transportation of V/STOL airplanes and so on, plus the automobile.

What we are trying to do is free up the automobile so that it can be used for what it is, the most wonderfully flexible transportation vehicle that has ever been developed. And our system now, of roads, has made that flexibility a reality. But we have got to break the four to six and seven to nine crunch and the lack of availability of parking within the cities, or the automobile then no longer is a flexible instrument of transportation policy; it becomes an endless belt of nothingness. So what I think will happen, not because again I am saying it or you are saying it, is that we now will have an opportunity of saying people who need to drive their automobiles, the salesman, the man who needs the flexibility within the city, has a right to expect that the rest of us who can come to an office and work during the day and go home in the evening, will leave our cars in a noncongested area and use a public system back and forth on our established trips; and that part of his money and yours and mine, that we pay in the gasoline tax—it is a very legitimate basis for doing that, so we can use our cars better.

At that point, then, I think those funds come together. Then after a period of time has gone by, it may well be that the trust fund will have lost its very hard constituency and we can go to the general fund appropriations.

Mr. YATES. We are not really ever going to face up to that until we bring everything that pertains to the problem under one roof in the Congress. This is the thing that bothers me. We have just seen recently the problems of jurisdictional disputes within the House. I would hope that the Committee on Committees would help us move in the right direction. Again I would urge you to submit your statement to the committee.

Thank you, Mr. Chairman.

Mr. MCFALL. Thank you, Mr. Adams.

Mr. ADAMS. Thank you.

WEDNESDAY, MARCH 6, 1974.

WITNESSES

STEWART G. TIPTON, CHAIRMAN OF THE BOARD, AIR TRANSPORT ASSOCIATION OF AMERICA
EDWARD STIMPSON, GENERAL AVIATION MANUFACTURERS ASSOCIATION
DONALD REILLY, AIRPORT OPERATORS COUNCIL INTERNATIONAL
JOHN WINANT, NATIONAL BUSINESS AIRCRAFT ASSOCIATION
WILLIAM OTTLEY, NATIONAL PILOTS ASSOCIATION
ROBERT RICHARDSON, HELICOPTER ASSOCIATION OF AMERICA

Mr. MCFALL. Our next witness is Stu Tipton of the Air Transportation Association.

Mr. Tipton, I understand you have some other representatives with you.

Mr. TIPTON. I do, Mr. Chairman.

Mr. Chairman and members of the committee, we appreciate this opportunity to appear before the committee and discuss national transportation policy and we join with others in congratulating the

Chairman and the committee in undertaking this current review, a review that I think everyone agrees is completely justified and wholly required.

I appear here this morning in two roles. At the outset, I was honored to be asked to open the discussion of national transportation policy on behalf of a number of aviation organizations which represent the full spectrum of aviation in the United States, and to present a general statement on their behalf.

These organizations are as follows: The Aerospace Industries Association, Air Line Pilots Association, Air Transport Association, Airport Operators Council International, American Association of Airport Executives, Aviation Distributors & Manufacturers Association, Experimental Aircraft Association, Helicopter Association of America, National Air Transportation Conferences, National Business Aircraft Association, and National Pilots Association.

Of these groups, five representatives of the associations are here in this room and are available at the table: Mr. Edward Stimpson on my far right; John Winant, National Business Aircraft Association; on my immediate left is Don Reilly, head of the Airport Operators Council; Mr. Ottley, National Pilots Association; and Robert Richardson, Helicopter Association of America.

Of those five, two, Mr. Stimpson and Mr. Reilly will have supplemental statements to the general statement that I would now present.

Mr. Chairman, the total statements on aviation this morning are lengthy. We recognize that the committee is tackling a broad subject. Consequently, we would appreciate it if I could present this statement on behalf of these organizations for the record and provide a brief summary of it.

Mr. McFall. I think that would be very good, Mr. Tipton.

Statement of Certain Aviation Organizations

Mr. Tipton. Thank you, Mr. Chairman.

Our statement put before the committee dwells primarily on the importance, the significance, the really critical importance of aviation to the Nation's economy and to the Nation's way of life. It presents a great deal of data illustrating and illuminating that conclusion.

Vast numbers of people are employed by the total aviation industry. Over 300 million passengers are moved by the industry as a whole. Heavy reliance is placed by the Nation's economy in movement; a great deal of freight is moved by the industry, particularly critical freight.

I am speaking now, of course, of the total industry, not only air transportation, not only common carriers, but also all of the segments of aviation that make this contribution. We emphasize this because we believe that the importance and significance of aviation to the economy and the welfare of the country needs to be realized and we consider that this realization must be woven into the fabric of every regulatory and legislative policy so that air transportation will have its proper role in the transportation scheme.

We have had some concern recently as to whether the Government generally, recognizes the significance of aviation as a tremendous force in our economy.

We have two or three examples that I will touch upon for a moment: The first one that is terribly acute as far as we are concerned, all of us, that is fuel, the availability of fuel. The fuel allocation determinations made by the Government last fall and continuing through this year imposed reductions upon aviation which range from 15 percent for air carriers to 50 percent personal flying. This is an indication that not nearly enough significance was being given to this phase of U.S. industry, particularly when one realizes that 100 percent of current requirements was provided for surface transportation of passengers.

Another thing about which I am glad to have an opportunity to comment is on this ranking of fuel efficiency which one always encounters.

The Secretary yesterday set forth a chart in which he showed the fuel efficiency of the various forms of transportation. Secor Browne came along later and attacked that determination of fuel efficiency. I am glad he did. I am going to do so also, because all of the formulas for determining fuel efficiency leaves out the element of speed completely. As far as I am concerned, any formula for fuel efficiency which leaves out speed is completely irrelevant for any policy determination.

Mr. McFall. Otherwise, oxcarts would win every time, wouldn't they?

Mr. Tipton. That is right. They would win every time. The sedan chair would be the most efficient, I suspect, or possibly the wheelbarrow.

Now really, that makes no sense. It leads to false determinations. We are not talking about fuel efficiency in a vacuum. We are talking about fuel efficiency to meet the needs of the public for passenger transportation and freight transportation.

When you leave speed out of that, then your formula can't be good.

I wanted the opportunity to emphasize that on behalf of us all because I have a notion that one of the reasons why aviation came out so badly in the fuel allocations that were made last fall and are continuing to be made and changed now is because of this notion that an airplane is basically fuel inefficient. That is a quote from the Secretary's statement, I believe. The airplane is not fuel inefficient; it is very efficient when speed is taken into account. So much for that statement.

Another indication of a failure to recognize the full significance of aviation to the economy can be seen in the consideration of the cost allocation determination which the Congress told the Department of Transportation to do and which they are doing.

In that study, the Congress directed the Department to take into account the public benefit of the airways system. They studied it carefully and came out with a conclusion that they could not identify any value, any public value in this system. As a result, in the total airways system, 20 percent of the cost of the system is assigned to the Government.

Now, when one considers that the entire internal defense, air defense of the country is bottomed on that airways system, it is wrong, on its face, to say that the general public should pay only 20 percent. These issues will be fully argued at a later time before the Congress, but I use that as an indication of a concern we have.

We think that the Department should acknowledge the public

benefit derived from all aspects of aviation and the concurrent need to promote its economic viability and its usefulness.

Second, we think that the Department should really undertake an aggressive advocacy role in the promotion of aviation as an important and significant part of the transportation system.

We also think that as policies are determined, the aviation industry should be consulted at an early time and not when the policy has virtually been fully determined.

I would like to mention as important policies three items with which this committee is very familiar: One of them is the organization of the FAA.

We feel strongly that the FAA should have greater freedom to carry out its responsibility; that the Department should not devote itself to supervising the FAA in detail.

Second, we think the trust fund should be more fully utilized to meet the needs of the system. It has been in existence now for 4 years. At the present time there is $575 million that is unspent, uncommitted, and thus, it is not being utilized.

The Congress has determined that the trust fund should be used to finance capital improvements. We think that consideration of broadening the trust fund should be given in a number of different elements to go along with the congressional policy that capital improvements in the system are to be supported by the trust fund.

Terminal buildings, land banking, preservation and improvement of existing landing facilities, projects designed to satisfy environmental requirements; all those issues of policy will be before the Congress and we would hope that, in view of the fact that the fund is a very substantial one, that these will be considered.

Against this, we would oppose utilization of trust fund moneys to pay the operation and maintenance expense of the airways system. Congress decided against that 2 years ago. The FAA or the Department, I think it is, is coming forward now and suggesting that that decision is reversed. We think the Congress should adhere to the determination it made previously.

Now I reach a point where I find myself in disagreement with both Mr. Yates and Mr. Adams in both cases, gentlemen whose judgment I have a great deal of confidence in, but I must disagree.

I do not think, nor do any of us think that the aviation trust fund should be folded into a big transportation trust fund. The Congress worked hard on that. They identified the airport and airways requirements at the time the aviation trust fund was set up several years ago when we were facing some rather critical situations. They determined that these improvements should be made in the system; they determined the source of taxation by which they should be improved and they put it into a trust fund and said it should be used that way.

I for one do not want to have to contend with the railroad system of the United States every time we want an ILS put in someplace in the airways system.

Now a final point in this general statement. That is administrative fees.

Last year we had much discussion before this committee relating to the proposed assessment by FAA of very substantial fees for various sorts of work that were going to be done by the FAA.

This committee reached the conclusion that FAA's efforts to do that should be deferred. In the course of discussion, it was pointed out to the committee that the Supreme Court had before it a number of cases dealing with the validity of the administrative fees being proposed by the FCC and the Federal Power Commission. Those cases were decided, I believe, on Monday. The Court, for a variety of reasons, held that the fees involved were invalid. The principles laid down by the Court in those decisions will require the reexamination by all Government agencies of the administrative fees they now have in effect or propose, in order that they can establish those that are within the guidelines laid down by the Court.

Consequently, the committee was wise in deferring the FAA's efforts last year and we would hope that they would continue to direct the deferment of that fee proposal.

With that, Mr. Chairman, I conclude the general statement on behalf of the aviation community and we are open for questions.

PREPARED STATEMENT

Mr. MCFALL. Thank you, Mr. Tipton. We shall insert your prepared statement in the record at this point.

[The prepared statement follows:]

NATIONAL TRANSPORTATION POLICY (AVIATION'S ROLE)

The President, in his February 13, 1974 message to Congress on transportation, said: "Let us maintain our worldwide supremacy in air commerce," and "let us press on with our safety programs in the air . . ." The aviation organizations represented here subscribe wholeheartedly to these objectives, and believe that the boundaries of concern must be even larger if the value of air transportation to the Nation's way of life is to be adequately recognized and reflected in governmental policy.

Unquestionably, the air transportation industry in all its aspects is an important, direct contributor to the Nation's economic health. The airlines employ over 300,000 people, and general aviation accounts for 250,000. Beyond this, a recent economic study indicated that an additional 997,600 people owe their employment to the related existence of air transportation, either related to airports or in other industries, such as aircraft manufacturing, sales, and service suppliers. Overall, civil aviation's direct contribution to the GNP is on the order of $35 billion. This contribution to GNP, although important, is not, however a full measurement of aviation's value to the public welfare.

Air travel has come to play an essential role in America's transportation network, in the movement of both goods and people. Scheduled air transportation has become the predominate mode, accounting in 1973 for 78 percent of intercity common carrier passenger miles. General aviation carried 70 million people during the same time period. While the airlines serve 521 airports throughout the Nation, general aviation serves all 12,000, often providing access to remote and difficult-to-reach areas without the prohibitively high investment in right-of-way required by surface transportation. This system provides mobility to nearly 300 million passengers annually for business or personal reasons.

The same system provides for a rapid interchange of goods between communities. It accommodates the critical need for scarce and skilled human resources to be expeditiously positioned to further commerce. It is a system which contributes greatly to the efficiency, productivity, and profitability of many American businesses. It opens up rural areas of America and contributes to economic growth.

While the rapid mobility air transportation provides for shippers and travelers is of prime importance, civil aviation provides a benefit and value extending beyond the users of this system, to the Nation as a whole.

Major benefits flow from significant cost and time savings available to the Nation as a whole which result in lower prices and almost instant availability of goods and services that would otherwise be unavailable. One need consider only such items as overnight bank clearings, agricultural application, police, and

emergency use of airplanes and helicopters, and the increased effectiveness of managers and engineers who use both airline and business aircraft to meet and deal with problems immediately to recognize the pervasive influence that civil aviation has on our national welfare.

Some benefits are not susceptible to precise quantification, such as the valu of the reduction of lost lives due to emergency aircraft facilities, or the intellectual value derived from the interchange of individuals among our communities, or with other nations, and so on. However, it is clear that air transportation does have a broad public value, beyond the mere direct benefit to the users, which contributes not only to our economy, but our whole way of life. We believe that this realization must be woven into the fabric of every regulatory and legislative policy, so that air transportation will have its proper role in the transportation scheme. Unfortunately, we have been receiving strong signals that the executive branch does not fully share in this realization.

Late last year, potentially disastrous initial decisions on fuel allocations were made by the administration. While virtually every other public or private transportation mode was asked to make little or, in some cases, no reduction in fuel usage, the entire aviation community was singled out for massive cutbacks.

These ranged from 15 percent for air carriers to 50 percent for personal flying. Although these crippling reductions were eased back somewhat, the original action was an indication that the administration did not assign to air transportation the essentiality it warrants. The fact is that nearly 300 million passengers do rely on air transportation every year and, notwithstanding the existence of other modes, the public needs and wants transportation by air because it is optimal, particularly where long distances are involved or where the destination is not adequately or timely served by other means.

The Department of Transportation, in another vitally important matter, has concluded that there is no quantifiable "value" which can be assigned to the general public benefit inherent in the air transportation system. From this conclusion a DOT funding proposal has been generated which could result in assessing virtually all costs of the national aviation system to the direct users over a 4-year span. DOT's conclusion runs counter to longstanding national policy on transportation systems funding. It further appears to us to ignore the fact that this Nation indeed does believe there is substantial public benefit in having a strong and efficient air transportation system.

We feel that there is great need for the Department of Transportation to do the following:

1. Acknowledge the public benefit derived from all aspects of aviation and the concurrent need to promote the economic viability of the industry. We appreciate DOT's assertion yesterday that the air sector offers such strong advantages in speed that it must be supported. However, we note with concern, a perplexing disparity, where the Department is suggesting that billions of dollars of general funds be spent on surface transportation to develop a system for the public's benefit, but talks of covering virtually all the costs of the airport and airways system through user charges.

2. Assume an aggressive advocacy role in the promotion of aviation in all decisions of the executive branch which affect air transportation.

3. Consult at an early time with the users on policy and planning so that the aviation system will be responsive to user needs and will be designed for maximum utility and cost effectiveness.

The airport and airways system which binds the Nation together is fundamentally national in scope and resolution of its potential, as well as its problems, must be addressed primarily from a Federal level. This is essential if the system is to be adequate to handle the anticipated flow of 325 million commercial air passengers and 200,000 general aviation aircraft by 1980. In order to accommodate these needs, we believe the following courses of action must be followed:

1. *The Department of Transportation should give FAA greater freedom to carry out its responsibilities.* The FAA has the best knowledge and understanding of aircraft and airmen certification, airport design and construction, the operation of the air navigation and air traffic control systems and other technical matters within its purview. We are certain the same can be said for the Federal Highway Administration, the U.S. Coast Guard, and all other Administrations within the Department, and we see little profit in detailed review of technical matters by various offices within the Secretary.

2. *The trust fund should be utilized to meet the needs of the system.* The Airport Airway Trust Fund was established by the Congress primarily as a fund for financing a catchup program to expand and modernize the airport/airway system. The users have accepted the principle of contributing to the trust fund but feel strongly that their money should be used to meet the continuing capital needs of the system. During the coming year, it is estimated that the users will contribute 951 million dollars to the trust fund. According to the 1975 budget, the fund which has been in operation less than 4 years will have an unrestricted surplus of approximately $575 million. This is in addition to other moneys in the trust fund obligated for specific purposes. Clearly, the trust fund is not being fully utilized.

The Congress has determined that the trust fund should be used to finance capital improvements. This is perfectly appropriate, since there are substantial unmet needs. Consideration needs to be given to expanding eligibility of additional items, and funding projects which improve the capacity and acceptability of the system, such as terminal buildings, land banking, preservation and improvement of existing landing facilities, and projects designed to satisfy environmental requirements. Against this backdrop, the administration's proposal to fund FAA maintenance and operations is not appropriate at this time. Nor should consideration be given to merging it into a single transportation fund.

3. User charges whether called taxes or administrative fees, should not be considered in a manner isolated from other factors bearing on funding of the airport/airways system. Decisions as to their assessment should be made by Congress. Any consideration related to implementation of such fees necessarily bears on all other methods. Whether such methods take the form of user taxes, charges, or fees, they all result in higher user contributions, and thus should be considered in relation to the total financial burden borne by users. We feel that Congress is the appropriate body to undertake such a broad and far-reaching review, in the context of overall national policy, and until then, the administrative fee proposal should be treated as it was last year.

Statement of General Aviation Manufacturers Association

Mr. McFall. At this time, Mr. Tipton, we would like to have Mr. Stimpson and Mr. Reilly make their statements and then we can have some questioning from members of the committee on all three statements.

Mr. Stimpson?

Mr. Stimpson. Excuse me. Did you not have a separate statement too?

Mr. Tipton. I have one separate one, one specifically related to air carriers, that I would like to present after our discussion of aviation generally.

Mr. McFall. All right.

Mr. Stimpson. Thank you, Mr. Chairman.

I, too, want to congratulate the committee for this undertaking on national transportation policy.

The General Aviation Manufacturers Association, which represents 29 companies involved in the manufacture of airframes, engines, and avionics for general aviation, supports the industry statement that has been presented this morning by Mr. Tipton.

The Secretary's statement presented to the committee yesterday spoke of the vital transportation role performed by the Nation's air carriers. With this we agree. The other segment of civil aviation—general aviation—was virtually ignored as an integral part of the Nation air transportation system.

General aviation is a practical and flexible form of transportation. It provides air transportation to 12,500 airports in this country, of

which 95 percent are not served by the scheduled airlines. Of all intercity air passengers, general aviation moves one in three, whether it is for business or personal transportation. Business flying is the largest segment of general aviation activity. Agricultural flying, emergency and health services, air taxi and commuter, law enforcement, personal transportation, instruction and training are important elements. It is significant to note that 70 percent of general aviation activity is for business or commercial purposes.

The term "general aviation" is not well understood. A recent survey conducted by Opinion Research Corp. of Princeton, N.J., disclosed that 59 percent of the general public does not recollect hearing the term "general aviation" and of the 41 percent who claim to have heard this term, very few had a clear understnding of its meaning. However, after the term was defined, the study showed that public attitudes are highly positive toward its social and economic value to the Nation. The survey also indicated that two-fifths, or 41 percent of the American public claimed that they had flown on a business or private airplane or had used commuter or air taxi services.

The contributions of general aviation not only to the transportation system, but also to national economy must be considered. In addition to the employment of approximately 250,000 people, it serves as a multiplier in many facets of the economy. For example, last year 3,500 generan aviation aircraft amounting to over $230 million were exported, and this year exports will account for over 30 percent of the industry production. Eighty-five percent of the world's general aviation fleet is made in the United States and virtually all of the piston engines are made in this country, a virtual monopoly.

The Department's statement established a number of goals and listed policies to reach them. General aviation accomplishes many of these. For example, the statement speaks of transportation to rural areas. However, outside of mentioning air taxi service, no attention is given to the fact that everyday general aviation is moving people and goods to and from rural areas and tieing them with the centers of commerce. General aviation provides important air transportation services without Federal suppport or subsidy, which is also a stated goal.

The Department's statement has a strong overtone that the Airport Airway System has enough capacity. We have an excellent system. We are concerned about the system's efficient use, particularly in the areas of airports and air traffic control. Unlike the air carrier, general aviation's efficient use depends uopn facilities use, both within and outside of the metropolitan airport. The stated goals of an efficient transportation system could be met if general aviation were recognized as a major partner within the total transportation system.

Thus far, general aviation's transportation contributions have not been fully taken into account. The Department of Transportation policy towards general aviation has been directed primarily in two areas: the first has been toward safety regulation. The second has concerned cost allocation and recouping a greater share of costs from the general aviation users.

We need a positive policy to support this vital part of the civil air transportation system. This was highlighted when general aviation was singled out for an overall 42½-percent fuel reduction in the

original fuel allocations program. Fortunately, this ill-conceived program was rectified. As Mr. Tipton pointed out in his statement, the airplane is fuel efficient, the general aviation airplane gets some very good economies.

Our little airplane, for example, we are getting about 20 miles to a gallon, single-engine airplane. It would be fine, particularly now with the energy crisis, the general aviation airplane, in certain markets, like air taxi and charter service is up considerably, because people need speed, they need to get places.

You were talking about 55-mile-an-hour speed limits. We have a 55-percent efficiency with the general aviation airplane. At 55-percent power, you save 15 percent in fuel and your travel time is cut down by about 12 perecnt. There are many conservation measures and the airplane is quite fuel efficient.

Future proposals such as additional new user charges, which place an undue economic burden, must be avoided and the national transportation policy must fully recognize the contributions of general aviation to the national transportation system and the national economy.

We want to work with the Department and the committee in formulating such a positive statement of general aviation's transportation role.

Thank you.

Mr. McFall. Mr. Reilly?

STATEMENT OF THE AIRPORT OPERATORS COUNCIL INTERNATIONAL

Mr. Reilly. Thank you.

With your permission, I would like to present our statement for the record. There are two particular elements of the transportation policy which were referred to by the Secretary I would like to just briefly comment on here today.

Mr. McFall. Proceed.

Mr. Reilly. Thank you, sir.

I am J. Donald Reilly, executive vice president of the Airport Operators Council International (AOCI).

The Airport Operators Council International is the association of the governmental bodies which own and operate the principal airports served by the scheduled airlines in the United States, as well as in many countries abroad. Our U.S. members annually enplane more than 90 percent of the domestic and virtually all of the U.S. international scheduled airline passenger and cargo traffic. In addition, our local government members operate many reliever and other general aviation facilities which supplement the larger airports in their communities and regions.

Mr. Chairman, we appreciate the opportunity to add to the statement presented on behalf of the aviation associations with some additional views of our U.S. members. Airport sponsors, mainly municipal governments, are—like the Federal Government—providers of facilities in the National Aviation System rather than users of the system. Thus, the perspective is sometimes a little different from that of our airline and general aviation colleagues.

We have reviewed the statement and presentation yesterday of DOT Secretary Brinegar and commend him and his staff for an excellent status report on national transportation policy. He said, if we may broadly paraphrase, "We don't have a national multi-modal policy, but we're getting there." We would agree.

There are three elements of transportation policy, referred to in the Secretary's statement, that we would like to address briefly: (1) the concept of "New Federalism" as applied to aviation; (2) maintaining the integrity of the existing aviation trust fund; and (3) the need for greater DOT efforts in interagency and intermodal coordination. These and other issues pertinent to the subcommittee's hearing are discussed in greater detail in AOCI's policy handbook, which is attached to our statement.

(1) *New Federalism and Aviation*

The President has indicated his desire to transfer many existing Federal functions to State and local governments for them to perform and fund at whatever levels they deem advisable. The Secretary's statement (at pages 45–46) says that State and local governments should provide transportation facilities and services when the private sector is inappropriate. The President's "New Federalism" policy and the Secretary's statement would limit Federal involvement to a few cases "where the private sector or State and local governments are obviously incapable."

Had such a philosophy been adopted years ago, neither our Interstate Highway System nor our interstate system of airports and airways would have been developed in a coordinated manner. Fifty separate State highway plans would have assured intrastate but perhaps not interstate travel.

The 500 local governments which are providing airport facilities for an interstate skyway system recognize the need for Federal coordination of their efforts so that national and not just State or regional objectives are met. Thus, our members have been greatly disturbed by the administration's continuing efforts to turn some existing FAA functions over to undermanned, underfinanced, and uncoordinated State aeronautics agencies.

In matters of aviation safety and development of airport facilities, the Nation cannot afford 50 separate systems. An interstate system of airways and airports needs Federal coordination. In our view, no functions presently assigned the FAA by Congress should be delegated to State agencies without clear mandate from Congress.

(2) *Integrity of the existing aviation trust fund*

The joint aviation association statement indicates that there are unmet capital needs in our airport and airway system and that Congress should consider these needs. Our members would concur but believe there is a more fundamental proposition:

> Until Congress decides to change the Airport and Airway Development Act and Trust Fund, the executive branch must not subvert the purposes of the existing law by budgetary maneuvers designed to avoid Congress statutory plan.

In 1970, in 1971, and again in recent months, the executive branch has toyed with the user tax receipts in the trust fund in an effort to

reduce airport program grants and to increase moneys to be available for other purposes.

The fiscal year 1975 budget, just released, indicates that, without prior congressional approval or review, some $50 million in the trust fund is being improperly expended.

The users, whose contributions support the trust fund, must have assurances that their taxes are being expended properly and for the purposes intended by Congress. They must look to Congress to be trustees for the aviation trust fund.

(*3*) *DOT's interagency and intermodal coordinating function*

In supporting in 1966 the creation of a Federal Department of Transportation to coordinate the activities of the various single-mode transportation agencies, AOCI testified as to the benefits which might accrue to aviation and airports. We hoped that a DOT superstructure could help foster solutions to aviation-connected problems such as airport ground access (with FHA and UMTA) and joint FAA–FHA research programs to develop more modern methods of constructing airport runways and highways. Intermodal exchange of information could provide greater benefits to all at less total cost to the taxpayer.

The results to date have, unfortunately, been fairly minimal. The modal administrations appear to have an antagonistic relationship with the office of the DOT Secretary or vice versa, and an approach-avoidance attitude toward the other DOT transportation units.

AOCI hopes that, with its organizational period passed, the DOT can now move more forcefully into intermodal coordinating atcivities, both in safety and environmental matters.

There will, however, be limits on what any Secretary of Transportation can achieve. He has no power over a CAB decision allowing the airlines to eliminate service to a community which has just expended local and Federal transportation funds to extend runways for airline jets. Further, the DOT Secretary cannot accelerate NASA's efforts to develop hardware for making today's jet aircraft more compatible with our airport environment. These broader tasks must be undertaken by the executive branch as a whole or by the Congress.

In our view, in summary, there is a need for a more comprehensive national transportation policy than the DOT Secretary can provide. We would support congressional efforts to develop such a broad-based policy.

Thank you, Mr. Chairman.

Mr. McFall. Thank you very much, Mr. Reilly.

Mr. Tipton, are you ready to continue?

Mr. Tipton. Shall I proceed with the air transport airlines statement?

Mr. McFall. Yes.

Statement of the Air Transport Association

Mr. Tipton. Good.

This statement relates wholly to the airline views on policy.

Mr. McFall. Are you going to summarize it?

Mr. Tipton. I am, indeed.

In seeking to develop something that would be reasonably useful to the committee in its study of transportation policy, the first real problem of course was how does one start? How do you catch a hold of the problem of developing a policy statement? Whether we are right or not, we have reached the conclusion that the first thing you had to do was set out the present basic policies affecting, in our case, air transportation and take a look at them, see how they are working, whether they need to be changed and, if so, identify those changes. That is what we have tried to do here in brief.

My name is Stuart G. Tipton. I am chairman of the board of the Air Transport Association of America which represents virtually all of the scheduled airlines of the United States.

As an important part of our national transportation system, and one heavily affected by the direction and implementation of governmental policy, the scheduled airlines of the United States welcome this opportunity to participate in the discussion of national transportation policy objectives. In our case, we believe it would be useful to review the basic elements of existing air transport policy and, in the course of the discussion, express opinions as to whether or not any elements of that basic policy require change. In this manner, we hope to provide a constructive evaluation of current policy and incorporate suggestions which we believe, if adopted, would benefit our Nation's air transport system.

In the 5 decades since air transportation has entered the mainstream of American life, it has become a vital force whose influence touches the average person almost daily—through the mail he reads, the food he eats, his financial transactions, travel, or livelihood. The primary advantage of air transportation is, of course, its speed which renders it a high-speed communications industry as well as a transportation mode. Air travel is the means for accomplishing otherwise impossible business transactions and enables millions of persons to take trips for vacations and family reasons that, in the absence of air transportation, would be prohibitively expensive from both a cost and time standpoint.

An examination of overall transportation policy need or application, however broad, should recognize at the outset that the national need for a vigorous U.S. common air carrier industry and a completely integrated U.S. air transportation system is firmly established. Such an examination must take into account the objectives and national interest requirements of our worldwide air transport system, the environment in which our airlines operate in interstate and foreign commerce, the nature of their public obligations and, in the light of all these factors, the quality and measure of government consideration and support necessary to obtain the established objectives.

U.S. air transport policy has been based since 1938 on the special objectives and considerations determined by the Congress to be necessary and desirable in the public interest. Air transportation, of course, has gone through many changes in terms of product development, market expansion, competition, technology, public service, and economics since 1938. But the special needs and the public interest significance of the U.S. air transport system, first reflected in the Civil Aeronautics Act of 1938 and reaffirmed by the Federal Aviation Act of 1958, are

of even greater import today because of the greatly increased impact of air transportation on national goals.

This impact is highlighted in a comprehensive study of the Federal role in transportation and its implications for commercial air transportation, which we recently commissioned through a private consulting organization. That study, entitled Decision Point: A study of the Federal Role in Transportation and Its Implications for Commercial Air Transportation, points out, for example, in comparing the various U.S. transportation modes, that the U.S. scheduled airlines have outperformed the whole U.S. transportation field by having provided more service, at a greater cost to themselves—considering investment—and at a smaller additional cost to the consumer, with greater safety and technological innovation, than any other provider of transportation service. (Study at 8.)

I will be referring to this study during the course of my statement and will be glad to furnish copies of the study report to the subcommittee. You may find it of interest in your consideration of transportation policy direction because of its analysis of government policies relating to the various transportation modes.

The outstanding performance in public service by our airlines is due to the initiative and dedication over the years of airline managements, employees, investors and a good number of farsighted public leaders. And it was achieved wholly within the framework of the national policy laid out in the Federal Aviation Act. That declaration of policy states:

> In the exercise and performance of its powers and duties under this act, the [Civil Aeronautics] Board shall consider the following, among other things. as being in the public interest, and in accordance with the public convenience and necessity:
>
> (*a*) The encouragement and development of an air transportation system properly adapted to the present and future needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense;
>
> (*b*) The regulation of air transportation in such manner as to recognize and preserve the inherent advantages of, assure the highest degree of safety in, and foster sound economic conditions in, such transportation, and to improve the relationship between, and coordinate transportation by air carriers;
>
> (*c*) The promotion of adequate, economical, and efficient service by air carriers at reasonable charges, without unjust discriminations, undue perferences or advantages, or unfair or destructive competitive practices;
>
> (*d*) Competition to the extent necessary to assure the sound development of an air transportation system properly adapted to the needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the national defense;
>
> (*e*) The promotion of safety in air commerce; and
>
> (*f*) The promotion, encouragement, and development of civil aeronautics.

Perhaps it would be well to examine briefly the principles incorporated in that basic policy and, in the process, review experience in several of the more important areas of regulatory and public interest philosophy Congress prescribed for application to air transportation.

1. MEETING THE REQUIREMENTS OF THE PUBLIC CONVENIENCE AND NECESSITY.

Meeting the requirements of the public convenience and necessity involves two basic considerations—the right and the responsibility to

serve. The overriding consideration here was to insure adequate economical, and efficient service by air carriers who are fit, willing, and able to perform air transportation, while permitting competition, to the extent necessary, to assure the sound development of an air transportation system properly adapted to meet all public needs. The objective was twofold: to authorize air transport service only when a need for such service and the ability of an air carrier to perform that service were both demonstrated; and, once that authority was granted, to require that the air carrier maintain adequate service over that route. In adoption this philosophy of regulated entry Congress decided that it was appropriate to provide a degree of route protection with a concomitant responsibility to maintain adequate service. The proof is in the record—we have, by any standard of measurement, the world's best air transportation system.

As indicated by the study I mentioned earlier, the scheduled airlines in 1970 originated 153.4 million revenue passengers in domestic operations. By 1973 this number had increased to 183 million revenue passenger originations. During the same period, service, measured in terms of available seat miles, increased from 213 billion to 246 billion.

While some have argued for a more flexible entry policy in the case of air transportation, changes in current policy must be given far more careful study than the proposals have received up to now. Obviously, if entry requirements for air transportation are to be relaxed, carriers must be relieved of their service obligations in nonproductive markets. It is difficult to anticipate what effect these two changes in policy would have upon the air transport system of the United States at home and abroad. Nevertheless, it is our thought that this policy should not be changed.

In 1962, Congress slightly revised the controlled entry policy for air transportation by legitimizing the nonscheduled air carriers and authorizing supplemental air transportation for the purpose of permitting charter operations to supplement scheduled airline service. We argued then that this relaxation of entry requirements, although limited in nature, would foster questionable regulatory and service practices, and would lead to pleas for a further relaxation of the entry policy without the imposition of concomitant service obligations.

Unfortunately, history has corroborated our concern and erosion of scheduled service due to the impact of supplemental air transportation has already gone too far. Proposed legislation is now pending, the so-called ITC bill, which for all practical purposes, would compound this problem of erosion by permitting the supplemental air carriers to provide virtually scheduled air service as and when they choose and without the public service obligations of the scheduled airlines.

The advent of such ITC's would no doubt result in an air transport system in which service would be provided only in certain valuable markets and the economic realities of such service would ultimately force the Congress to abandon the act's mandatory service provisions. We are convinced passage of this proposed legislation would be inconsistent not only with the intent of Congress as expressed in the Federal

Aviation Act but also would undermine the foundation upon which our Nation's vital scheduled air transportation system is constructed.

As noted in the study I mentioned earlier, "* * * Government policy of effective control on entry (including new entry, route awards, exit, and mergers) appears to be critical to the healthy growth of the scheduled service carriers and a healthy, stable industry."

2. PROVIDING AN ECONOMICALLY SOUND AND BALANCED RATE STRUCTURE

A further basic policy, long established by Congress, is that rates charged by airlines be regulated. The underlying philosophy of air transport ratemaking is two-fold. It would assure a rate structure for all services offered which provides for reasonable charges, without unjust discriminations, undue preferences or advantages, or unfair or destructive competitive practices. It would also foster sound economic conditions by permitting the airlines under honest, efficient and economic management to earn a reasonable return on their investment. In other words, the basic objective of air transport ratemaking policy is to price air transportation products, in both productive and less productive markets, in a manner by which all users will reasonably and equitably enjoy the benefits of air service at levels which, when taken together, adequately compensate the airlines.

The effectiveness of this rate policy from the standpoint of the consumer can be seen in a comparison of the yields for passenger transportation in 1970 with those in 1960. The previously mentioned study shows that during this period the average revenue per passenger-mile received by the scheduled carriers declined by 5.7 percent, contrasting sharply with a 31.1-percent rise in the consumer price index. (Study at 18–19.) But that same study indicated that while the U.S. air transport industry has outperformed other modes of transportation, it has not enjoyed financial rewards commensurate with that operational performance. (study at 7.)

Although the basic ratemaking policy is a sound one, its administration, particularly domestically, has proven extremely difficult. The fact is that rate regulation simply must be effectuated more expeditiously—the gap between the time when increased costs are initially incurred and the carriers are finally compensated for those costs must be shortened significantly. The need to assure an economically sound air transport system must be given more weight in the future than it has in the past. And the time gap must be shortened.

Although various specific recommendations, designed to minimize "regulatory lag" have been considered by the airlines, several actions taken by the Civil Aeronautics Board as an outgrowth of the domestic passenger fare investigation have given us some reason to believe that certain of these deficiencies may be mitigated. These include new methods for collecting and analyzing costs and evaluating the financial condition of the carriers on a more systematic and efficient basis. These steps are encouraging and, we believe, indicate a willingness to deal with domestic airline economic problems more effectively and efficiently.

Turning to international air transport ratemaking—the situation is different and more complex. There are wide ranges of differences be-

tween nations with regard to laws, regulations, monetary systems, and geographic relationships to each other. The most significant factor is that each nation's sovereignty must be respected.

Neither the United States nor any other nation is a free agent in the matter of international air transport rates. Such rates are subject to approval by two or more sovereign governments. The authority to operate air services between countries hinges upon the mutual approval of many elements, one of which is the matter of rates. And due to the nature of international air commerce, most international rates cannot be determined bilaterally since they involve various multilateral considerations.

In view of these peculiarities, both governments and airlines have found it necessary to develop and utilize a conference system of ratemaking by which international airline rates can be established in an orderly manner taking into account the multiplicity of interests. All rates developed within this system are presented to the respective governments of each participating airline for approval. Such government approval insures that international air transport rates are in the public interest of the respective nations.

Nevertheless, some broad national transportation policy proposals concerning the need for or desirability of rate bureaus or conferences may arise. They have arisen in the past and each time the conclusion was reached that there simply is not any practical alternative to the international air transport rate conference system. This is still the case, and we would surely assume that whatever is done on a national policy basis would not ignore the realities of international air transport ratemaking.

Finally, it should be noted that Congress assigned responsibility for air transport ratemaking decisions to the Civil Aeronautics Board in order to provide for a consistent, orderly, and judicious ratemaking process. Yet several pending legislative proposals would significantly alter this process by transferring the public forum for ratemaking to the Congress in the establishment by law of special reduced-rate privileges for certain persons. Making Congress responsible for complex airline ratemaking decisions would place an unfortunate demand on the legislative process and would spread to other rate regulatory burdens. The existing statutory design is sound and should not be disturbed.

3. SUBSIDY PAYMENTS

Since the inception of our national air transportation system, public service payments have been authorized for certain essential services which, by definition, could not be self-supporting. Since 1959, there have not been any subsidies paid to the trunkline or international carriers with present subsidies being paid only to the regional, Alaskan, and territorial carriers. In authorizing such payments, Congress decided, as a matter of national policy, to assure services to otherwise nonsupportive markets. This policy which recognizes the need to subsidize air transport service required in the public interest without burdening the other users of the air transport system is a sound one and ought to be maintained.

We do wish to point out, however, what we believe is an important

approaching policy problem regarding subsidy. During the past few years, increasing amounts of Federal funds are being used to subsidize not only urban mass transit but also rail passenger transportation. As private companies required to provide air transportation in the public interest, we are concerned about the possibility of new subsidized surface competition for long-haul passenger traffic. We see little sense in using Government funds to underwrite less convenient long-haul passenger service by slower surface transport in today's society when the public convenience and necessity is being met by air transportation. We are confident that Congress will consider this in evaluating the need for long-haul passenger transportation service subsidies for surface carriers.

4. REGULATING CORPORATE RELATIONSHIPS

The fundamental objective of air transport policy regarding the regulation of corporate relationships was to assure that this area of activity was completely open to public scrutiny and that potential conflicts of interest and undue dampening of competition did not occur. The principal features of this policy included requirements for: careful examination of certain delineated interlocking relationships; prior approval of consolidations, mergers, and other acquisitions of control; and the filing of all cooperative relationships between or among two or more carriers which affect air transportation.

Understanding that certain of these transactions and arrangements may be beneficial to air transportation but nevertheless may raise antitrust questions, Congress described with specificity the relevance of the antitrust laws to such activities, and provided the regulatory body with authority to exempt the affected persons from the operation of the antitrust laws in accordance with appropriate public interest standards.

This regulatory framework, carefully designed to permit necessary and desirable flexibility while assuring stringent regulatory control, is perfectly sensible and has been beneficial over the years. It need not be changed.

5. SAFETY REGULATION

In developing national air transportation policy, Congress made an early decision to construct a system of unique and intensive safety regulation including thorough and expert accident investigation machinery. This safety policy has been a good and effective one. The excellent safety record of U.S. aviation speaks for itself. Tables I–13 and I–14 and chart I–1 of the previously mentioned study depict the outstanding safety record of the scheduled airlines during the period 1960–70, reflect the decrease in the fatality rate throughout the period and indicate that in 1970, for example, the airline passenger was approximately 1,500 times safer than the automobile traveler.

The precise manner and means of regulation may, of course, have to change to reflect the emergence of new and improved technologies, but the basic philosophy, which combines rigorous regulations, high performance standards, continuous training and examination and intensive inspection is a sound one and should be preserved. We are con-

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fident that the continuing and useful oversight exercised by Congress in this area will ensure its continued viability.

Although we support this basic safety policy, we strongly believe that the maintenance of that policy is a national responsibility which should be borne by the Nation as a whole since it is the Nation that benefits from the system. Recently, suggestions have been made, however, to offset the cost of safety regulation through the imposition of administrative user charges. The benefits of this system flow not only to its users but also to the public at large and air transport companies should not be required to subsidize safety regulation which is required in the national interest.

6. AIRWAYS AND AIRPORT DEVELOPMENT

National air transport policy recognizes the responsibility for the Federal Government to maintain our airway system which is used by all segments of air transportation—commercial, general and military. This recognition was reaffirmed in the Airport and Airway Development Act of 1970.

The legislation, enacted to remedy the deficiencies in the system which resulted from sporadic funding for expansion and improvements of the airways system over many years, established two important principles. First of all, ample funds must be provided to insure a more consistent program of support for providing airport development, and the provision of facilities and equipment to support necessary expansion of the aviation system, and, secondly, that users should participate in the funding of the system.

With respect to user participation, Congress was most careful in delineating the scope of its policy by specifically providing that moneys paid by users should not be utilized to offset the cost of system operations and maintenance. That funding use policy is currently being questioned by those who would pay for such operations out of the aviation trust fund. We believe that policy should remain as it is for the time being. The creation of the trust fund for these expenditures was always envsioned as a "catchup" effort to provide facilities long overdue and we must be most careful in using those monies lest we thwart that purpose.

With regard to airport development, the capital program established by the same Airport and Airway Development Act of 1970 has proven effective during its four years of existence and has resulted in the allocation of $928.7 million for 1,788 airport development projects.

One area that must be readdressed, however, is the Federal participation ratio in airport development projects. The present array of Federal participation ratios varying from 50 percent at a large hub airport up to 93.7 percent at an Alaskan airport results in the anomalous situation in which the lowest ratio applies to the airports with the greates needs; namely, those serving the greatest number of users. In order to remedy this imbalance, we believe that the Federal participation ratio should be established up to at least 90 percent for all airport projects at all airports. Moreover, since airline passengers are currently contributing significant amounts to the airport trust fund, some of this contribution certaintly should be utilized to provide facil-

ities of direct benefit to them. Therefore, Federal participation should be broadened to include the public areas of terminal buildings, common use baggage handling facilities, intraterminal transportation services, and other such items which directly affect the safety and convenience of the traveling public.

7. MEETING THE NEEDS OF THE NATIONAL DEFENSE AND THE POSTAL SERVICE

The Federal Aviation Act provides that the Nation's air transportation system must be adapted to and fulfill the requirements of the present and future needs of the national defense and the Postal Service.

As the record shows, the Nation's scheduled airlines are willing and able to provide vital transportation capabilities to augment military air transportation during times of international stress. It is vital to the Nation's defense posture and consistent with national air transportation policy that a strong, economically viable network of scheduled airline service be maintained. In recognition of this need, the Federal Government in general, and the Defense Department in particular, have for many years supported the policy that commercial air service should be used to the maximum extent possible for the movement of both Government personnel and air freight shipments.

Conversely, the airlines have recognized that Defense Department requirements for the movement of specified material or personnel to certain geographical areas cannot and should not be accomplished by commercial airlines. The airlines have therefore supported the governmental policy that the Defense Department, specifically the Military Airlift Command, should be equipped with a modern fleet of transport type aircraft specifically tailored to meet these unique DOD requirements.

There is a growing tendency by the Government to operate that fleet in direct competition with the commercial airlines for the routine movement of Department of Defense or other Government traffic. While this activity may have some appeal in the area of short range cost benefit to the Government, it will, unless checked, inevitably weaken the economic position of the airlines and hence limit the airlines' ability to respond to military needs when augmentation of military transportation is required.

In recognition of the vital role which the Nation's commercial air transportation system plays in support of national defense needs, it should be a fundamental principle of national policy that Government air transport service should not be provided in competition with private enterprise for the movement of routine Government traffic.

Turning to the transportation of mail, the airlines and the U.S. Postal Service have a long history of mutual cooperation in meeting public mail needs. Today more than 16 billion pieces of mail move annually by air among and between more than 500 airports serving thousands of cities in the United States and between the United States and 130 foreign points. The air transportation of mail produced by the U.S. scheduled airlines to the Postal Service amounts to more than 60 percent of all of the air transportation of mail produced throughout the

world—by all of the world's airlines, for all of the world's postal systems.

The scheduled airlines have long supported the policy that all first-class letter mail should move by air, utilizing the Nation's scheduled air transportation system. Today, that has largely been accomplished. In addition, certain other classes of mail have begun to be moved by air. It is in the interest of the mail-using public that the role of the scheduled air transport system be expanded in mail transportation. This expansion must be accomplished in a manner consistent with the economic requirements of the scheduled airlines.

It has long been established policy that rates for the transportation of mail by air be determined by the Civil Aeronautics Board. This concept assures meeting the fundamental economic and public interest tests which are basic to the evidentiary hearing process Congress mandated for the achievement of an orderly and balanced system of air transport ratemaking. This is a good and useful way to establish fair and reasonable rates of compensation for the transportation of mail by air, and it should not be undermined by a contract bidding system as some special interests have suggested.

There is one aspect of mail transportation rate regulation, however, that results in discrimination against U.S.-flag international airlines. Rates for the worldwide transportation of mail by air are established on an intergovernmental basis through the Universal Postal Union. The intent of this system is to assure comity and equity for all international air transportation of mail. Yet, the U.S. Government pays U.S.-flag international airlines a rate significantly lower than the prevailing international rate, while foreign-flag airlines receive the higher established rate from the U.S. Government as well as their own governments. This places the U.S.-flag airlines at a distinct economic disadvantage which must be rectified. We have requested, therefore, that legislation to eliminate the current inequity be considered by the Congress as soon as possible.

8. RELATIONSHIP OF AIR TRANSPORT TO THE ENVIRONMENT

The Congress has studied the relationship of air transport to the environment carefully and has made policy determinations with respect to it. The Clean Air Act Amendment of 1970 dealt with aircraft emissions and the Environment Protection Agency was given the authority and responsibility to establish aircraft emissions standards, after consultation with the Secretary of Transportation. Upon the issuance of aircraft emission standards by EPA, the Secretary of Transportation is required to assure that such standards are applied with respect to aircraft certificates. The difficult policy problem with which the Congress dealt in this instance was to make sure that proper emission standards were applied with respect to aircraft engines in a manner assuring the retention of a proper balance between the clean air objectives and the technological and safety considerations which must go into the development, operation, and maintenance of the highly complex aircraft engines.

We believe the policy so determined is a sound and workable one. By reason of airline and engine manufacturer initiative, smoke has been significantly reduced from the air transport fleet. However,

Government and industry are encountering great difficulties in determining with accuracy the character and extent of invisible emissions and in developing reliable testing methods. Both industry and Government are continuing to work on this problem and there is reason to hope that progress can be made. Since the jet engine, by its nature, is the cleanest of powerplants, the aircraft emission problem is an insignificant one compared with the overall problem of reducing air pollution. Nevertheless, efforts to ameliorate even these minor effects will continue.

In the case of aircraft noise, congressional policies were established in the 1968 amendment to the Federal Aviation Act of 1958 and the broader Noise Control Act of 1972. Here again the problem faced by Congress was to arrive at a balance between the desirability of reducing aircraft noise and the continued efficiency and safety or airline operations. Congress solved that problem by requiring close cooperation between EPA and FAA in the establishment and application by FAA of aviation noise control standards, and progress has been made. The newer aircraft in the air transport fleet fully meet the standards established under part 36 of the Civil Air Regulations and both agencies are currently working on the problem as to whether the older aircraft in the fleet should be retrofitted to bring them into compliance. Here again the policy determination has been made and the designated agencies are seeking to carry out that policy with effectiveness.

As a result of the extensive overall applicability of Federal laws and regulations governing aircraft operations and the noise legislation which has been adopted by the Congress, the Supreme Court has determined that the Federal Government has preempted the field of aircraft noise regulations. In all likelihood, this same rule will apply to the regulation of emissions. Consequently, as a matter of national policy, the Federal Government has undertaken the regulation of matters affecting the impact of aircraft operations on the environment and this field is forbidden to the States and local governments.

CONCLUSION

We believe U.S. air transport policy is well conceived and has been well tested. The Nation and the American public have been well served. There is no need for any basic change in policy affecting air transportation although, as we have suggested, some adjustment in the administration of air transport policy is in order.

We hope that these comments will be of some assistance to you in your review of national transportation policy. I will conclude by offering a though you may want to consider during your deliberations. In appraising the national transportation system, and in analyzing possible changes in national policy, it is extremely important for everyone concerned to avoid impairing the right of individual travelers and shippers to choose the form of transportation they need and desire.

COMMENTS BY CHAIRMAN OF THE AIR TRANSPORT ASSOCIATION

Mr. TIPTON. In addition to my prepared statement, I would like to refer to a study which we have just had completed by an outside agency.

It is a study entitled "Decision Point, a Study of the Federal Role in Transportation and Its Implications for Commercial Air Transportation."

We had that study made in order to determine whether a review, not only of our transport policy, but of the policy relating to other forms of transportation, would give us any guidance as to methods by which we could improve our destiny and make recomendations to the Congress on changes.

That study I have here with me. I would be glad to furnish the study to the committee. I really feel that the committee might find it extremely useful because it deals, as I said, not only with air transport policy but with policy affecting surface forms of transportation as well.

Mr. McFall. We would welcome a copy of that.

AIRLINE SUBSIDIES

Mr. Yates. Mr. Tipton, if you favor subsidies for sick airlines, why do you not favor subsidies for sick railroads?

Mr. Tipton. Well, I think that you have to examine the reason and the usefulness for the purpose of the subsidy.

My purposes here in worrying out loud about the subsidization for long-haul passenger transportation is that that is a service that airlines perform well and at this point are performing without subsidy.

I think that we may well find—and as you pointed out a moment ago, Pan-American had suggested the idea that by reason of the fuel price increases of such magnitude on that system that subsidy might well be requested by that airline; there is a special situation where there is really no surface transportation; in the overseas field it is no longer there. There you would have an example, I think, as to where subsidy probably should be considered.

I am not—the only question I am raising here, and I am merely raising it, is the concern about subsidy for long-haul transportation.

Mr. McFall. If I may I interject a moment.

We think your testimony is interesting and valuable. It goes to the importance and relevancy of the Secretary's statement and we want to make sure that if you have any further comments on the Secretary's statement that you will submit them for the record.

Mr. Tipton. I would appreciate that opportunity.

RECOGNITION OF CONSUMER INTERESTS

Mr. Tipton. I think in one final statement here I should say this: In appraising the national transportation system in analyzing possible changes in national policy, it is extremely important for everyone concerned to avoid impairing the right of individual travelers and shippers to choose the form of transportation they neeed and desire.

I was a little bit shaken by a statement made by Mr. Brinegar in his statement yesterday, in which he said that short trips should be diverted from aviation to other modes.

Now that is just a flat statement and the full significance of it of course is not clear. But it seems to me the traveler and the shipper

should determine what form of transportation he wants to use and that the Government should not exert itself to tell him that if he is going to take a short trip he should ride on something else.

If the railroads get so good that they take that short haul business away from us, well, so be it.

Of course, what that means is that the people have not voted that they do not want to ride in airplanes on short trips. But our short haul business has actually, I believe, had the most rapid growth now of any form of air transportation. So that what we worry about here is that in some fashion the Government will get the power to say that air transportation is not right for trips of 200 miles or less.

I think that would be a very bad policy. I think whatever we do in determining transportation policy, you or I or anybody, ought to be able to chose the form of transportation that he wants to use.

That concludes my statement, Mr. Chairman.

Mr. McFall. If any of you want to submit further comments with regard to the Secretary of Transportation's presentation of yesterday, you may submit them.

Mr. Tipton. Good. We are all, I am sure, glad to have the opportunity to do that, because we have not been permitted to study the very extensive statement.

Thank you, Mr. Chairman.

Mr. Conte. Mr. Edwards?

ORGANIZATION FOR TRANSPORTATION

Mr. Edwards. You were here earlier when Mr. Evans and Mr. Adams Testified. I guess you heard my questions or comments.

What do you feel about the need for the legislative branch to corral all of these facets of transportation into one committee?

Mr. Tipton. I heard your question. I made a mental note that it was a very hard one.

Actually, I think my feeling on that is that it is pretty presumptuous for us to comment on the organization of Congress.

Our industry is dealt with by, basically, the Interstate Commerce Committee of the House, by this committee, by the Post Office Committee, the Government Operations Committee, and I am probably leaving some out.

Having said it would be presumptuous, I am not at all sure that we will ever reach the point where one committee of Congress will have the supervision or policy determination function with respect to one industry.

The reason for that is that all of these issues are so completely interlaced. That is as good an answer as I can give.

Mr. Edwards. Maybe you do not want to offend any particular committee chairman that you have to deal with.

Mr. Tipton. I do not.

Mr. Conte. How would you enjoy having to answer our mail every day?

Mr. Tipton. I would not. I get enough of that myself.

Mr. Edwards. Let me put it to you another way. I am not trying to put you on the spot.

Without regard to the fact that you may have to appear before vari-

ous committees, would it be desirable to have one committee, with some concern over the whole transportation system?

Mr. TIPTON. This is right off the top of my head, and I am going to try to answer the question.

I do not think it is workable.

Mr. EDWARDS. You mean you do not think we can bring it off?

Mr. TIPTON. No, no.

Mr. EDWARDS. I have my doubts as to whether we can bring it off.

Mr. TIPTON. No; that was not my point. That may be true.

My point was that I would doubt if any one committee of the Congress could be assigned that broad a jurisdiction.

Mr. EDWARDS. You think it is too broad?

Mr. TIPTON. It is too broad.

I referred to the number of committees that deal with problems that are of great importance to us. I, of course, left out the Ways and Means Committee. I do not think it is really feasible to put into one committee the policy determination affecting transportation, because transportation covers such a wide spectrum of the total economy of the country.

I have heard someone say 21 percent of the gross national product is produced by transportation. They are affected by a vast number of pieces of legislation, studies, investigations, made by most of the committees of Congress, it seems to us.

Mr. EDWARDS. Yet you must concede that with the present setup we have not come up with what you would call a first-rate transportation policy?

Mr. TIPTON. I think that the Congress has not come up with an overall transportation policy affecting all forms of transportation, but I do not think that that can be cured by trying to consolidate all transportation decisions in one committee. I think the committee would have to deal with too many issues.

As far as the determination of transportation policy is concerned, it seems to me that the current effort now being started is a good way of going about it.

Now this is a case in which the subcommittee has taken the initiative. Over many years and through varied types of leadership, there have been many types of studies of transportation policy which have never been too successful, it seems to me. It is a good thing for this committee to launch that initiative. In the process, I would assume that this committee will work with the representatives of other commitees that have concern here.

Mr. Adams was here this morning and addressed himself to the question. I am sure committee chairmen dealing with transportation, or their members, will do the same thing.

This is as good a way of doing it as any.

Mr. EDWARDS. Thank you, Mr. Tipton. It is not often I get to call Mr. Conte "Chairman". So I will say thank you, Mr. Chairman.

Mr. CONTE. I think this is the only way we ever will get to power.

Does anyone else wish to make any comments on the questions raised by Mr. Edwards?

Thank you very much, gentlemen.

WEDNESDAY, MARCH 6, 1974.

WITNESSES

JACK R. GILSTRAP, VICE PRESIDENT, AMERICAN TRANSIT ASSOCIATION
THOMAS NEWSOM, PRESIDENT, LOS ANGELES RAPID TRANSIT DISTRICT BOARD
ARTHUR BALDONADO, LOS ANGELES RAPID TRANSIT DISTRICT BOARD
GEORGE TAKEI, LOS ANGELES RAPID TRANSIT DISTRICT BOARD
MR. EYRAUD, LOS ANGELES RAPID TRANSIT DISTRICT BOARD

Mr. MCFALL. Mr. Gilstrap, we are glad to have you before the committee. We will be glad to hear your statement at this time.

STATEMENT OF THE AMERICAN TRANSIT ASSOCIATION

Mr. GILSTRAP. I very much appreciate this opportunity.

I would like to take just 1 quick minute to introduce members of our Los Angeles Rapid Transit District Board who are here today.

Mr. Thomas Newsom, who is our president; Mr. Arthur Baldonado; Mr. George Takei; and Mr. Eyraud.

We appreciate you letting us testify in the morning session.

I am here as vice president of the American Transit Association, and also as general manager of the Rapid Transit District of Los Angeles.

The American Transit Association—I am sure most of you are familiar with it—it is the association whose members carry about 85 percent of all the transit riders in the United States. That amounts to over 7 billion rides a year.

We have members who come from over 250 cities across the country.

The urban transit industry, as you know, has been involved in the dollar debate here in Congress for a number of years now. We have heard capital versus operating assistance, trust funds versus general funds, contract authority, how much money, all of these questions are very difficult.

But I think the real question which you, Mr. Chairman, have very wisely identified, is, what is it we are trying to do?

We have found that debates on the dollars have been most difficult because we have not a good clear set of goals and objectives. So your suggestion of a national transportation plan is one that the transit interest very heartily endorses. We think it is right on target.

A few thoughts about that matter and how to proceed.

As you probably know, there is a great deal of local and regional planning that has been underway in many of the cities across the country. It varies in its level of sophistication. Some of it is coordinated, some of it is not.

But I would suggest to you and the committee that this is a good place to start. That would be the inventorying and analyzing, perhaps categorizing much of that planning in the urban areas which already is under way.

LOCAL URBAN PLANNING

I would say to you that the American Transit Association is underway now on a beginning in that direction, and we would think within

about 90 days we can submit to your committee what could be a starting effort on this bringing together and perhaps inventorying the local urban planning that is going on as it pertains particularly to public transportation.

Mr. McFall. We would like to have that, Mr. Gilstrap.

Mr. Gilstrap. I would like to pass on to you and to the committee some of the thoughts that we have had in this undertaking that we are starting on.

One of the major points is that the traditional cost-benefit analysis is going to have to apply, we think, some new approaches when we look at urban public transportation. It is very difficult, as I am sure you are aware, to put dollars and cents on many of the social impacts of public transportation.

For example, we are going to have to start to develop ideas and ways of putting values on such things as public transit's contribution as a tool in urban planning. That is not easy.

Another one that is difficult is transit's value to an area in terms of the mobility it offers the transit-dependent citizen; those who either choose not to or cannot own and operate a private automobile.

In addition, I think as we get into this, we are going to find the need to set some standards for service. So I will get into a couple of the kinds of questions we are talking about. We face them every day.

Our board of directors does, and the boards across the country do.

How far should we have to walk to a bus stop or a train station? How long should they have to wait for a bus or train? How clean should the train or the bus be? How do we approach the question of fares?

An example, something we are very proud of in Los Angeles, just in the last month or so we have tried a new program, where on Sunday we dropped our normal 30-cent zone fare to 10 cents; the reaction has just been phenomenal.

We increased our ridership 190-plus percent by giving a 10-cent rate on Sunday. The interesting thing to us has been not only the tremendous numbers of people we have carried, in fact exceeding the number of buses that we have on Sunday, but in interviews with people on the buses we found that there are families who are taking that Sunday trip who have never been to many parts of our county, simply because they do not own an automobile and cannot afford the normal busfare.

CONCLUSION

This is, in summary, some of the sorts of issues I think a national transportation policy, particularly as it bears on urban transit, we are going to have to give consideration to.

Now, maybe some of these questions can be approached by perhaps analyzing travel corridors in urban areas. That would be collecting information on job and residential density, by purpose, by length, time or trips; and this kind of general information might be used to develop criteria which could be used by local areas and at a national level to help us start to decide on transit mode, to help us start to decide among freeways or fixed rail rapid transit or buses or surface streets or buses on freeways; these various alternative modes which can be really brought to bear on the job that is there to be done.

I think we at the local level and at the Federal level need some help and some guidelines in those areas.

So I think all of this in summary brings us to the point that in our minds, in the transit industry, what we truly need is a long-term program of goals and objectives that I think will better identify the job we are trying to do, how well we are doing it, and what it might cost.

Within that context, we can really get down to the dollars.

Mr. McFall. Thank you very much.

Mr. Gilstrap. Thank you very much, Mr. Chairman.

Mr. Conte. Mr. Gilstrap, did you see the statement made yesterday by Secretary Brinegar before this committee?

Mr. Gilstrap. No, sir, I have not had the chance to.

Mr. Conte. We shall see that you obtain a copy of that. The committee would appreciate very much if after you've read it, you would supply this committee with your comments on that statement.

Mr. Gilstrap. Be glad to do that.

Thank you.

Mr. Conte. The next witness is Dr. Vuchic.

Doctor, would you rather testify now or this afternoon?

Dr. Vuchic. I can do it this afternoon if I am the first in line.

Mr. Conte. All right, at 2 o'clock we shall have you on first.

Dr. Vuchic. Thank you.

AFTERNOON SESSION

Wednesday, March 6, 1974.

WITNESS

VUKAN R. VUCHIC, ASSOCIATE PROFESSOR OF CIVIL AND URBAN ENGINEERING-TRANSPORTATION, UNIVERSITY OF PENNSYLVANIA

Mr. McFall. The committee will come to order.

We are pleased to have with us Dr. Vukan R. Vuchic, associate professor of civil and urban engineering-transportation, University of Pennsylvania.

We will be delighted to have your statement at this time, Doctor.

Statement of Dr. Vuchic

Mr. Vuchic. I want to thank you, Mr. Chairman, for the opportunity to be here.

I am coming here as a professional in the field of transportation, not representing anybody but myself. I have come because I hope I can make some contribution to this important topic you are discussing today.

Mr. Chairman, there is little doubt that our transportation is in an acute crisis. The fact is that large segments of our transportation systems are unreliable, inefficient, and wasteful. Their environmental impact is often harmful but, above all, one of the basic findings of the daily report from 1961 that our national transportation does not represent a system, is probably as correct today as it was at that time.

The fact is that transportation has a major impact on the total econ-

omy of the society which is not reflected necessarily in its financial structure in all cases. This was recognized long ago already in the 19th century but we have in many ways ignored this fact in practice. Business aspects of many transportation services wrongly play a dominant if not exclusive role in many Government decisions rather than being carefully weighed against other important factors.

In our exaggerated belief that a "free market" is the best regulatory method in all economic sectors we overlook the fact that if some modes of transportation are largely Government-owned and operated, others only partly so, and yet others have no governmental assistance—the situation does not resemble a free market at all! While in such a situation careful regulation and clear governmental policy are needed, our regulatory methods have been often rigid and obsolete and policy very vague. Then, during the recent sharpening of the urban, railroad and energy crises, instead of improvement of regulation—some voices suggest deregulation. Solution to inadequate organization is its improvement rather than its dismantling!

STEPS TOWARD SOLUTION

In most other advanced countries departments of transportation were founded several decades ago. The United States, however, retained different modal agencies and remained much longer without any national transportation policies. Moreover, not only lack of coordination, but actual "fights" among modal agencies were common. This was particularly damaging to the common carriers.

Several excellent studies clearly defined the current problems and emphasized the need for a different approach to transportation. Doyle's report (1961) on the national transportation system and the Institute of Public Administration's study of urban transportation were, for example, outstanding documents of this type. When the Federal Department of Transportation was finally founded in 1967, the intention and expectations were that the Department, incorporating all modes, would do what the uncoordinated, "negatively regulated" group of virtually independent modes could never do, namely:

Analyze all modes and work toward their integration into a single coordinated system;

Place primary emphasis on national, public interest rather than that of individual groups of governments, system operators, or users; and

Establish long-range goals and policies to guide planning and financing decisions rather than be governed by needs of immediate crises and shortrun survival only.

PRESENT STATE OF TRANSPORTATION POLICIES

There is no doubt that the Department of Transportation has undertaken a number of very interesting and useful studies and programs. An example of a thoughtful and constructive analysis of transportation policies was presented by the Department of Transportation in the document "A Statement of National Transportation Policy" in 1971. However, the progress has not been steady and, recently intensive opposition to clear policies and progress in developing more

efficient, modern transportation systems was initiated utilizing obsolete economic principles and technical misinformation. Thus, we see that already the 1972 National Transportation Report gives a rather shallow nonanalytical description of the existing systems, often extrapolating trends rather than deeply analyzing problem causes and carefully developing changes achievable by policies. Little questioning is found in it of the existing policies (or lack of them); no positive, clear definition of improvements in urban transportation is given. Investments into existing facilities, their expansion, and investments into new systems are explored as "alternatives" as if they were mutually exclusive.

The same indecisiveness and lack of direction is found in the document "Urban Transportation (Dilemmas at a Time of Decision)" by the House Public Works Committee (1973): The report quotes many more statements against than for improvements in urban transportation; it brings more confusion and misinformation than solutions; and it shows a total unawareness of the modern professional thinking, legislative and financing policies as well as the state of modern technology in urban transportation systems (rapid transit, light rail and bus) in the countries which have overtaken us in this area (for example, the Netherlands, West Germany, Switzerland, Sweden).

Reviewing in summary, the above-listed improvements expected from the leadership created by the Department of Transportation have so far brought the following results:

"Unimodalism"—a narrow orientation toward a simple "best" mode and often fighting against other modes continues to be strong. A search for simple panaceas, based on gross simplifications of problems, appears to be stronger than work on balanced multimodal transportation systems. For example individual groups argue for the following "solutions":

Deregulation as solution to our transportation problems. In urban transportation, the argument goes, deregulation would result in introduction of jitney and taxi services which are "more efficient" than conventional transit. Proofs for this are quoted from 1910–20 period and from present practices in cities like Caracas, Sao Paulo, and Damascus. The facts that this type of service is unreliable, creates chaotic street conditions, segregates "better" people from the "plebs" using regular buses, collects lucrative services leaving others to regular transit, and that it is used where wages are low—are not mentioned. Neither is it mentioned that all advanced countries have been improving their urban transportation through better regulation rather than deregulation; and that many cities with large jitney systems are now building rapid transit systems (for example, Mexico City, Sao Paulo, Tel Aviv and others).

Carpools as the "best alternative" for increased efficiency in urban transportation. There is no doubt that increased carpooling can be efficient and highly desirable for alleviation of peak hour congestion. But encouragement of carpooling does not negate the need for new rapid transit and bus services, improved traffic regulation on streets, coordinated parking policies, et cetera.

"New Modes" will be the only solution since "conventional transit

has lost the battle with automobile"—is another line of thinking contrary to facts. Our public transportation lost its patronage not only because of automobile competition, but also because it offers a very inadequate service. Ample evidence in this and other countries exists that modern transit service can divert a substantial number of automobile drivers. New modes can bring some improvements, but they cannot replace fully either conventional transit or private automobile.

Minimum cost solution and preservation of current practices are often more important goals than creation of an optimal transportation system from the public point of view.

Numerous studies have been undertaken searching for minimum cost solutions. Utilizing unrealistic assumptions and incorrect methodology, these studies often suggest that the lowest cost solution, even if it offers a greatly inferior service to other alternatives, is the "optimal one". The absurdity of this approach is obvious.

An example of considering existing practices as "taboo" is the problem of labor practices. Large deficits of our commuter railroad services should not be surprising when one knows that crews on those trains consist of 3 to 8 persons instead of the 1 to 2 required. It is not at all true that any change of obsolete labor practices would damage labor unions. With some initiative and imagination, it would be possible to increase efficiency and retain or even increase number of jobs. This step, however, also requires improved management in many cases.

Instead of long-range goals and policies, solutions of current crises still dominate many actions. Two examples:

The Federal Railroad Administrator declared that the basic goal of the Northeast Railroad reorganization is to bring the "bankrupt" railroads to the level of "solvent" ones. It would appear that, unless a more efficient total railroad system in the Region is created, it is only a matter of time before the next ones would become "bankrupt". Another question is whether the classification of "bankrupt" and "solvent" railroads, regardless of their physical and organizational condition, is correct; if the same approach were taken toward other modes and various subsidies ignored, would we not refer to Mohawk and Eastern Airlines, Sealand, and many other transportation companies utilizing public support as "bankrupt"?

In urban transportation, great emphasis is being placed on solutions with immediate results at the expense of long-range solutions. This approach has brought us into the present crisis; for decades, transit companies have had survival rather than progress as their main goal. We do not seem to have learned from that experience.

SOME EXAMPLES OF POLICY DEFICIENCIES

To illustrate by specific examples the problems created by these policy deficiencies, two examples will be presented: The planned reorganization of rail service in the Midwest and Northeast Regions, and some trends in urban transportation.

The DOT report on the reorganization of Northeast railroads deals with a multibillion-dollar railroad system vital to that part of the country. Yet, that report has a number of serious deficiencies, such as:

No precise definition is given of public need: what type and quality of railroad service in relation to other services should be provided;

It leaves the question whether "solvent" railroads will or will not join the Consolidated Rail Corporation unanswered; they will only be "urged" to join;

It puts more emphasis on preservation than on improvement and modernization of the railroad system. No mention is made, for example, about electrification which all modern railroads around the world have been rapidly introducing;

The need for improved management and labor practices is not analyzed;

Long distance passenger and commuter services are only mentioned in statistics; no discernible attention has been given to them in the plan development;

No consideration is given to utilization of abandoned rights-of-way which can be invaluable for such uses as public transportation in urban areas.

In light of the current problems and national needs for improved railroad freight and passenger services, these deficiencies are astonishing.

With respect to urban transportation some major problems are:

Little work has been done on formulating a total urban transportation policy which would incorporate all modes and facilities.

There is no definition or standard for the type and level of service which public transportation should provide in cities. Little national planning can be done without such a definition.

Minimum cost solutions regardless of their service are often considered to be "the best" ones. Experience from actual systems, that more costly but higher level of service systems attract more users than lower investment-lower quality ones, is ignored. There is a strong bias against all rail modes.

Serious consideration is given to a policy of "no new rail transit systems." The reasons for such a proposal have been based on studies performed by laymen in the field, false data, and distorted "theoretical analyses." At the time when more rapid transit systems are under construction around the world than ever before in history, when new light rail systems are being built in many medium size cities of advanced countries, stopping the progress in that direction in the United States is proposed.

Mr. Adams, who testified before you this morning expressed some views on this.

Very recently a report was done for the Department of Transportation with many of the deficiencies that I have mentioned.

That report is being distributed widely through the country and I see on the program you will have a report on it by one of its authors this afternoon, Dr. Boyd. I have recently written a critique of that report and I would like to ask for your permission to to have it in the record when I am in a position to release the critique.

Mr. McFall. We would like very much to have it, Doctor. We will insert the critique at the end of your testimony.

Mr. Vuchic. Thank you.

In most aspects of public transportation, as well as in regulation of

automobile traffic in cities, the quality of work from management through maintenance has not been improving. We could learn much in these areas from other countries. Ignoring their progress is commonly justified by the incorrect rationalization that their solutions "do not apply here." Abundant evidence exists that many problems are quite similar and that many policies different from ours have been applied elsewhere with much more success.

EXISTING PARADOXES AND THEIR SOLUTIONS

The following are some of the paradoxes of our present situation and the required improvements:

In many cities, parking cannot be enforced to free an additional lane for buses, but a blockwide right-of-way can be cleared for a 6- or 8-lane freeway;

Correction: Coordinate planning of new facilities with utilization of existing ones.

Highly mobile private automobiles lose their mobility in cities due to congestion.

Correction: Provide an acceptable level of service by transit on independent rights-of-way; and regulate peaking of traffic through parking rate policy.

We drive $3,000 to $5,000 automobiles over streets with potholes and obsolete traffic regulation (no maintenance funds).

Correction: Increase taxation on automobile use (e.g., gas tax), but provide efficient and safe facilities.

Millions of dollars are available for multilane highways, but thousands are not available for 5-foot walkways or pedestrian crossing markings (pedestrian safety probably comes out poorly in the benefit/cost analysis!).

Correction: Include pedestrians as not only equal, by preferred participant in urban travel.

Tens of millions are spent on development of new systems, while the basic characteristics of modern rail transit systems which have proved high efficiency and reliability are unknown in the United States.

Correction: Improve expertise and plan modes on the basis of their proved value rather than temporary "fashion."

Use of gasoline tax for other transportation—transit, parking, et cetera—was considered unjust until recently. If only a 5-cent per gallon tax was introduced and used for improvements of all urban transportation facilities, the available sum would be considerably higher than the funds proposed by the President. The outcry was that motorists could not pay that. Now they are paying 15–20 cents more than a few months ago, but without any benefit from the increase.

Correction: Stipulate that a portion of gallon-price increase be allocated to public facilities (streets, traffic regulation, transit, and pedestrian areas).

Contrary to some statements and these pessimistic reports that urban transportation is so bogged down it has no real solution, the fact is that we can have an efficient urban transportation and efficient

national transportation system. Our deficiencies at present are that we don't have sufficient leadership in terms of defined policy in our organizations as was testified to this morning several times. They are not coordinated adequately to provide a means for achievement of such a system.

The second deficiency is that we have little expertise in the field of transportation and a third problem is the opposition to progress.

SOME RECOMMENDATIONS

It is obvious that all these corrections are not unrealistic to achieve if a rational, specific, and progressive national transportation policy is formulated. Some of the most important steps in that direction should be:

Define realistic goals and objectives the national transportation system—consisting of all operating modes—should meet. Then devise methods how to get from the existing situation to such a system.

We have to have a goal in long distance to which we are going rather than to think just about immediate steps.

Consider policies as influential forces on systems: perform planning instead of trend extrapolation.

Adopt a positive attitude toward all modes. Develop each to its optimal potential and role, rather than some to maximum while others for preservation only—for example, the railroad restructuring plan.

Analyze experiences and practices in countries which are ahead of us. The following items deserve particular attention: Transportation policies; financing methods; approach to urban transportation; traffic engineering techniques; modern rail transit systems; and transit organization and operation.

The last, but possibly the most important step, should be the improvement of our expertise in transportation systems: engineering, economics, city planning, and other aspects. Transportation experts should lead toward public goals rather than spend most of their efforts in fighting citizen groups, as is the case with many today.

The major task of formulating a transportation policy is clearly achievable. But it requires leadership and determination. I am confident that the political leaders, Government officials, and we transportation experts, with dedication to this goal, can meet this task. We owe that effort to our Nation.

But we need stronger leadership and a well-defined transportation policy.

Mr. McFall. Thank you very much, Doctor. I appreciate your coming here and presenting this report.

CRITIQUE OF IDA STUDY

Mr. Vuchic. Thank you. I have constantly the feeling that much can be done, and much is around the corner. We don't need for all improvements tremendous sums of money, but we have to move faster than we are moving now and we have to have a stronger direction shown by the policy.

[Dr. Vuchic's critique of IDA study follows:]

A Critique of the Study

"EVALUATION OF RAIL RAPID TRANSIT AND EXPRESS BUS SERVICE IN THE URBAN COMMUTER MARKET"

by the Institute for Defense Analysis (IDA)

sponsored by the Office of Transportation Planning Analysis
U.S. Department of Transportation

Submitted to the
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The contents of this report reflect the views of its author, Dr. Vukan R. Vuchic, who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the views or policy of the Department of Transportation, the University of Pennsylvania or the Institute of Public Administration, which sponsored it. This report does not constitute a standard, specification, or regulation.

Purpose and Scope of the Critique

The recently released IDA Study discusses some important issues in urban transportation and its contents have already caused considerable controversy. The purpose of this Critique is to analyze the Study--its objectives, methods and findings--evaluate its implications, and suggest what stand UMTA should take toward it.

The Critique is based on a thorough review of the Study Report and related literature, as well as on a discussion with Mr. Weiner, the technical monitor of the Study. The Critique analyzes all main aspects of the Study to a depth which is considered necessary to evaluate its approach and findings.

Study Objective

The statement closest to a definition of Study objective is that "This project is designed to analyze capital alternatives for urban public transportation" (p. 1). Later, on the same page, it is emphasized that the distribution of trips between modes, between different origins and destinations, and by time of day are not analyzed.

The title of the Report states that the Study evaluates rail rapid transit and express bus service "in the Urban Commuter Market", which is a narrower objective than analysis of capital alternatives.

Statements in the Summary and in Section 6 (as well as the diagram on the cover) imply that the Study has conclusively evaluated rail and bus modes for corridors of any passenger volumes. Section 6 goes even further and uses the findings to discuss many broader issues such as the role of public transportation, policy, legislation, etc.

It is obvious that the objective of the Study is not clearly defined. The fact is that the only subjects the Study analyzes in some depth are the costs (including system and user costs) of rail and bus transit for commuting from a corridor area into a CBD during the peak hours, utilizing a hypothetical model and assuming that the number of passengers is constant on all alternative systems. Accepting an analysis of costs to be the objective*, three major questions must be raised:

1. Is minimum cost the correct objective in providing a transportation system, regardless of its characteristics, quality of service and number of persons it serves?

Since there have been other studies based on the objective of minimum cost, implying that the policy should be oriented to foster minimum cost solutions, some examples of this approach to other problems may clarify the issue.

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*Mr. Weiner emphasizes that the Study is limited to the analysis of costs only.

For example, applying the same philosophy to federal housing policy, one would develop the following procedure. To decide which type of housing the government should support, a study is undertaken comparing cost per dwelling unit of single family houses, row houses, public housing blocks, and high rise luxury apartments. To insure inclusion of "benefits", square footage differences among types of units are included in calculations with assumed monetary equivalents; differences in types of living, greenery, location in the city, neighborhood aspects, etc., are not considered; demand for each type is considered constant. Could Study findings imply that the type of housing which showed the lowest "total cost" should be the only one to be financed by the government?

Suppose in another example that a government office wants to foster minimization of energy consumption by private automobiles in urban travel. A comparative study of a Chevrolet, Mercedes and Subaru is made. To include benefits, different travel times are included, but comfort, safety and other differences among the vehicles are not: it is assumed that the demand for each mode is constant. Would findings of this study imply that the lowest-consumption make should be favored over the others?

Finally, the standard procedure in highway planning is to select a highway on the basis of cost and level of service characteristics (see, for example, both AASHO's design manuals*). The Interstate Highway System was not selected as the lowest cost alternative, and most properly so!

Consequently, the minimum total cost per passenger cannot be used as the sole objective in transportation system planning. The maximum number of passengers is usually the main objective of transit systems projects; the number of passengers directly influences benefits from the project, and only through analysis of both benefits and costs (quantitative and qualitative ones) is it possible to evaluate any transit system, or any public project for that matter.

2. Should the alternatives examined be technological modes--rail and bus?

Due to a traditional and long-obsolete orientation of individuals to either "rail transportation" or "highway transportation" there has been a strong tendency to approach transportation systems through these technologies, often emotionally proving that one is "better" than the other. One of the purposes in founding departments of transportation at the federal and state levels has been to eliminate such previous separate approaches through technologies and to avoid frequent modal disputes between different government agencies, creating a proper basis for the planning of coordinated urban transportation systems often consisting of several different modes.

The simplistic question of whether rail or bus is a "superior" mode (one which the IDA Study focuses on) can never be answered in such a manner due to the great complexity of urban transportation, variations in local conditions and drastic differences in types and levels of service. It will be shown below that the services provided by the two modes differ so much that no

*Ref. [1], pp. 98-110, 277-278, 305-307, and others; ref [2], pp. 131-134 and 141-143.

comparison ignoring these differences can be valid. One could get more sensible results by comparing modes grouped by type of service, rather than by mechanics of wheel and support. For example, bus on arterial streets is more similar by type of service to a streetcar than to bus on exclusive busway. Yet, the Study compares rail rapid transit not only with an express bus service, but also with bus on arterial and even jitney service. Following the same logic, suppose that the cost of streetcar service was compared with that of express bus service; if streetcars came out at lower cost (which is, with convenient assumptions, not at all impossible), would that imply that streetcar is superior to express bus service?

Each technology, rail and bus, offers a wide spectrum of level-of-service/cost combinations. The differences between the highest and the lowest level of service system within each technology are much greater than between comparable levels-of-service provided by different technologies. Consequently, the basic consideration in formulating a transportation policy should be given to the type and level of service, rather than technology. Level of service is related to the desired goals of transportation projects. For a given type and level of service alternative technologies should be compared with respect to the meeting of requirements, cost, etc.

3. Are the claimed Study findings justified by its objective and scope?

Regardless of the validity of the Study objective, methodology and assumptions, it is clear that a hypothetical model of a single-function system on the basis of a single parameter only (cost) provides no valid basis for an overall comparison of rail and bus technologies. Even less does it provide adequate grounds for general analysis of political, regulatory and institutional aspects of urban transportation. The cost of different technologies is only a minute part of these extremely complex issues.

The Underlying Concept of Public Transportation

The IDA Study raises another issue which is more basic than differences between rail and bus technology; that is the concept of the role of public transportation in cities. The Study presumes that commuting to the CBD is the dominant, perhaps the exclusive, task for public transportation. Several questions should be considered about this concept.

4. Does the Study assume the correct role of public transportation in cities?

During the 1950's and early 1960's, when virtually all urban transportation investments went into highways, some planners were of the opinion that transit will only represent a supplementary means to private automobiles for peak hour commuting to the CBD. With the realization that it is neither possible nor desirable to perform virtually all urban travel by private car, most of the medium and large cities' planning agencies as well as UMTA planning mannuals* define that the role of public transportation is to:

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*See, for example, ref. [3], pp. IIB-16, 17.

-Provide an acceptable level of transportation service throughout the metropolitan area;
-Encourage development of land use patterns desired by the community;
-Attract the maximum number of passengers to reduce highway congestion, parking area requirements and negative environmental effects of the automobile;
-Provide service for non-drivers and non-auto owners.

To meet these goals, public transportation must represent a system serving the whole city throughout the day, rather than a set of disconnected radial lines into CBD during peak hours only. Consequently, the IDA Study is not based on the correct concept of urban public transportation systems.

5. Would the rail and bus systems assumed in the Study model provide similar types of service?

The differences between the two systems in the model, as well as in reality exemplified by the Lindenwold Line and Shirley Busway, are very substantial in several respects. They will be illustrated by several sketches.

A rail line serves a set of stations along its alignment; thus, travel among all stations is possible, as shown in Figure 1(a). The Busway provides only for travel between different points in the served area and the CBD, as sketched in Figure 1(b). The difference is significant: the proportion of trips on the Lindenwold Line with neither end in CBD is 30%; these trips would not be served by the Busway. The regional implications of the contrasting two types of service is shown in Figure 2. Whereas the express bus service is highly CBD-oriented, the rail line serves not only those trips served during the peak hour by express bus, but also serves the same O-D's off-peak as well as many other trip end combinations not served by express bus at any time.

A rail line, due to its limited length, also provides frequent off-peak and weekend service, which cannot be economically provided on the extensive low-density network. Figure 3 compares hours of service on the two types of systems, based on Lindenwold Line and Shirley Busway: the former operates 24 hours a day; the latter during 4-6 hours per day on the Busway; during the remaining 12-14 daily hours some of its lines operate on arterials, others do not run. On weekends, there is no service on the Busway.

These differences in the type of service of the two systems are extremely significant; they make, for example, a major difference in the mobility of shoppers, residents of low income areas, reverse commuters, weekend visitors, etc.* This fosters a community habit of reliance on public transportation and assists in continually attracting new passengers. Yet, the model in the IDA Study ignores these important differences. In addition, the model makes two very unrealistic assumptions.

The first one is that buses would take every person door-to-door and provide adequate frequency of service. If it is assumed that the busway

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*The Lindenwold Line carries 12-14,000 riders on Saturdays, 4-6,000 on Sundays. The Study does not include this travel in computing cost per trip (pp. 84-85).

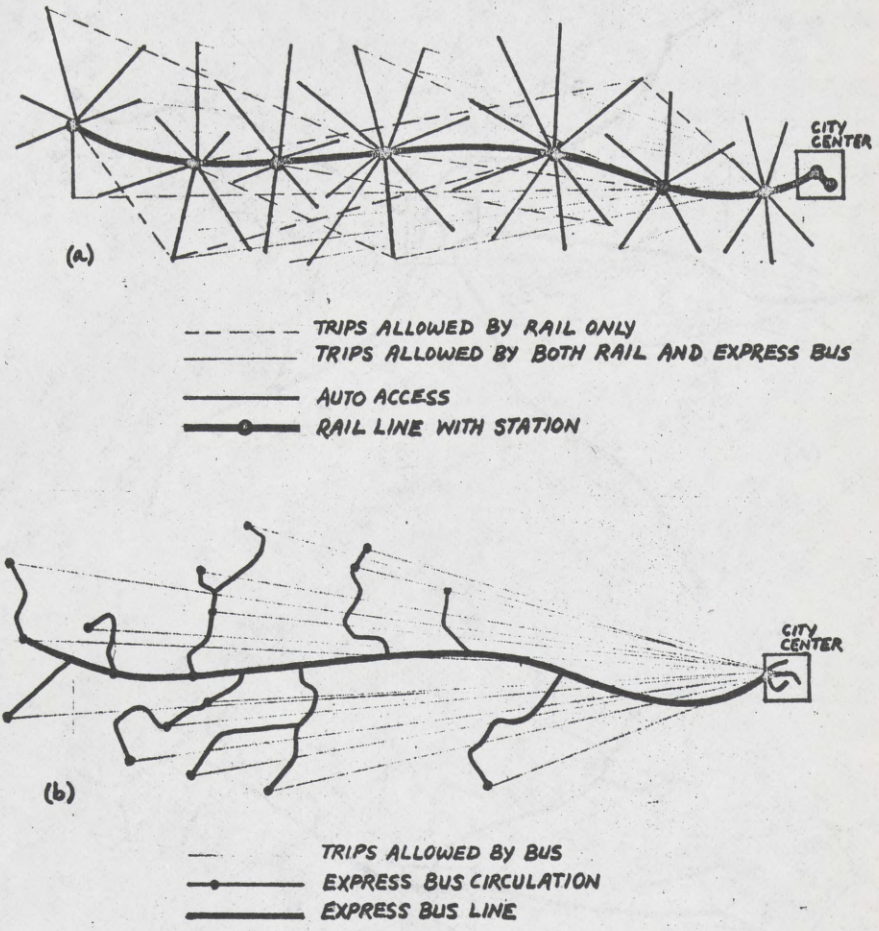

FIGURE 1. CORRIDOR SERVICE CHARACTERISTICS FOR RAIL RAPID TRANSIT AND EXPRESS BUS MODES

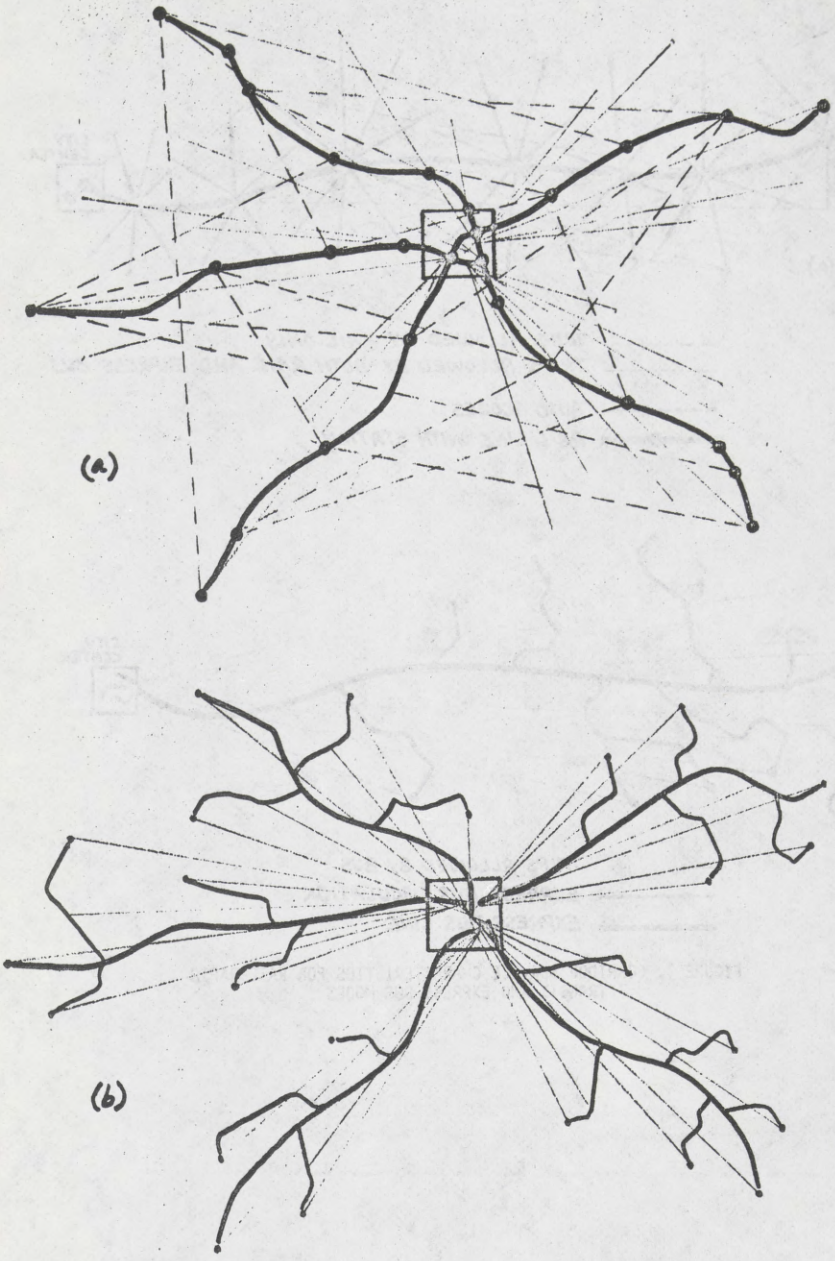

FIGURE 2. URBAN AREA COVERAGE CHARACTERISTICS FOR RAIL AND BUS SYSTEMS

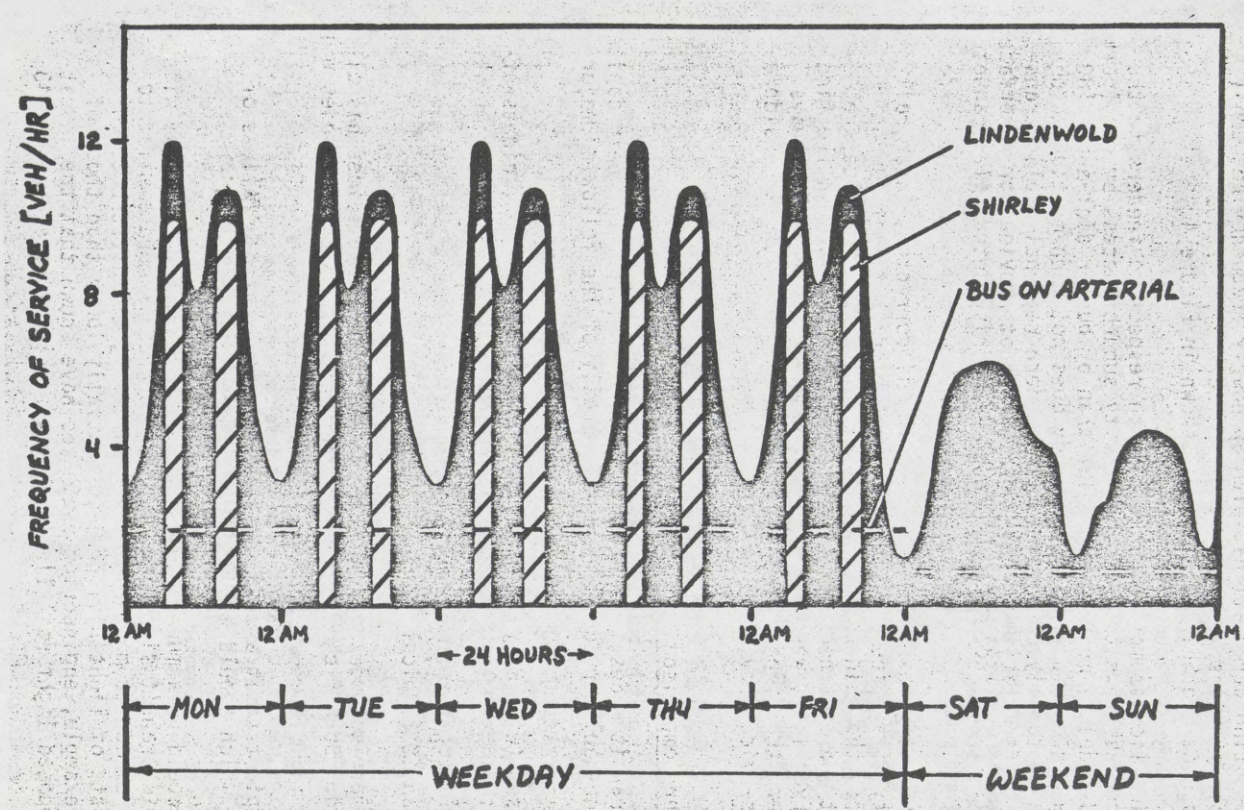

FIGURE 3. COMPARISON OF RAIL RAPID TRANSIT (LINDENWOLD) AND EXPRESS BUS (SHIRLEY) HOURS OF SERVICE AND FREQUENCES

carries 300 buses per peak hour (capacity of 15,000), coming from 30 branch lines in the suburbs (similar to Shirley system) and going into 4 streets in the CBD (as the Study model assumes), the average frequency of service from a given branch line to a given CBD street would be only 2-1/2 per hour, i.e. headway of 24 minutes--not a very satisfactory service. This is corroborated by the Shirley Busway which has 127 routing permutations, with an hourly frequency between 1 and 15 during the two peak hours. Comparison of network type/frequency of service on Lindenwold Line and Shirley Busway is shown in Figure 4.

The second invalid assumption was made with respect to feeders to the rail line. Experience has shown that in low density suburbs access by car (park-and-ride and kiss-and-ride) is much more popular than by bus or dial-a-bus (80 vs. 9 per cent on the Lindenwold Line). The Study does not even mention auto access to rail, which is totally unrealistic: no modern regional public transportation system can perform satisfactorily if it does not provide for interface with private automobile. The fact that people own and drive automobiles cannot be ignored.

Most of these omissions of the Study would, if corrected, favor rail mode since its quality of service has been underestimated; but that is not argued at this moment: the main point is that the two types of service are drastically different and that neglecting the differences invalidates the findings of the Study. Even if it were correctly proved that one mode is always cheaper than the other, that finding would not be meaningful without consideration of the type of service provided.

Selection of Modes for Comparison

The family of transit modes, listed in the descending order of their capital cost and level of line-haul service, consists generally of the following major systems:

-Rapid transit (with many variations in types of equipment, rights-of-way, etc.);
-Light rail;
-Express bus on busway;
-Surface transit (typical: bus on arterials).

The complexity of comparing modes providing different types of services has already been emphasized. Specific choice and definition of the compared modes will now be analyzed.

6. Are rail rapid transit and express bus "typical" representatives of the two technologies which should be compared?

Light rail would be a much more appropriate rail mode to compare with express bus than rapid transit since its level of service is more similar to that of buses. This choice of mode would have made a great difference in results since the costs of light rail are substantially lower than those of rapid transit. For example, engineering estimates have shown that the investment cost of the proposed light rail line in Dayton, Ohio would average $2.43

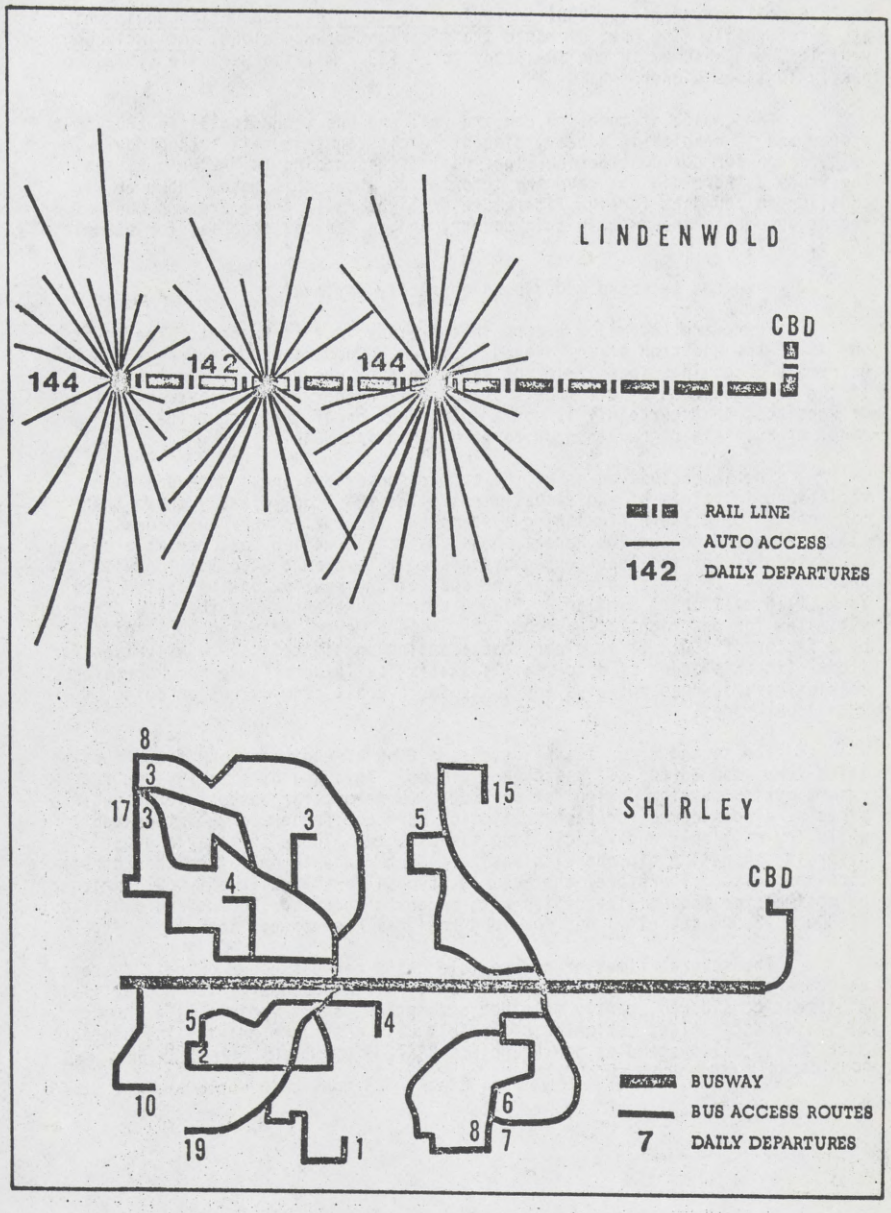

FIGURE 4. AVAILABILITY OF SERVICE: ROUTES AND DAILY FREQUENCIES

to 2.74 million per mile (1973) including the vehicles, supporting equipment, etc. (ref. [4]). The cost of rapid transit right-of-way alone, not including vehicles, was assumed in the IDA Study to be $23.2 million per mile (1972), or nearly 10 times higher!

The choice of modes to compare rail and bus technologies is thus improper and it results in a heavy bias of results against rail technology. The main reason for not considering light rail is, according to Mr. Weiner, that the Study authors did not have any information about this mode. However, in addition to abundant foreign literature on light rail, there are a number of recent documents about it in this country and in Canada, such as, for example, [4, 5, 6, 7, 8].

7. Have the selected modes been correctly defined?

There are two major errors in the Study in this respect. The first one is in the adoption of an "average" system. Comparison of averages can be extremely deceiving since it is not valid for any one real world situation. If the average price of all models of Buick is higher than the average price of Pontiacs, that certainly is not a sufficient proof that the price of any model of Buick is higher than price of any Pontiac model.

The inconclusiveness of the comparison of averages increases with variations in values of individual items. The IDA Study clearly shows that many costs for different existing systems and facilities vary quite drastically. Figure 6 in the IDA Report shows that construction cost per mile of rapid transit for the least expensive system (Cleveland, $4.4 million) is approximately 25 times lower than the cost of the most expensive system (New York, $110 million). Similarly, Figure 5 in the Report shows that two different estimates for bus right-of-way cost (by RMC and Meyer, Kain and Wohl) differ by a factor of 100! It is clear that adopting unweighted "average" values for items with this order of dispersal is statistically unreliable and, therefore, meaningless; it does not give any basis for overall conclusions on costs of individual modes.

The second error is that the same type of equipment and fixed facilities were assumed for all passenger volumes. This would, clearly, not represent optimum system design for any mode. However, for buses several vehicle sizes were considered for each section of service (feeders and "integrated") while for rail only one vehicle type was assumed. There is today a great diversity in rail equipment with a significant range in operating characteristics and costs. Therefore, the assumed "typical" rail equipment would neither be optimal for medium size cities with moderate corridor lengths and densities (2,000 - 12,000 capacity) nor for long regional high-speed lines.

The several times higher vehicle costs per passenger on rail systems as compared to that on bus systems is partly a consequence of the non-optimal equipment considered, partly of other assumptions about vehicle life, number of seats, etc. Also, estimates of vehicle unit costs are heavily influenced by such nontypical systems as San Francisco BART, which could have been designed considerably more economically.

Based on these facts, one must conclude that the definitions of individual modes are not correct and that the errors bias the findings in favor of buses. Formulation of "average" systems is so unreliable that they render results meaningless.

8. Have right-of-way costs for the two modes been correctly compared?

Cost of right-of-way depends mostly on its location and type. Existing corridor and at-grade construction is the most convenient case; tunneling for a new right-of-way is the most expensive (although sometimes functionally best) right-of-way. The Study confuses two different concepts: cost of right-of-way depending on its type (elevated, at grade or subway), and cost depending on the technology of way: pavement vs. track. Thus, the busway is assumed to be located in freeway medians and charged with shared costs only; the rail line is assumed to be placed along entirely new rights-of-way, such as in Montreal, San Francisco, Toronto, etc. While for the CBD the two modes justifiably have different alignments, that is not logical for the line-haul section. If a right-of-way in freeway median would be available for a busway, it could also be used for rail technology. Therefore, it would have been more appropriate to use the costs of rail lines in medians such as Dan Ryan and Kennedy in Chicago, which have, according to Figure 5 in the Report, costs of only 20-50% of the adopted "average" figure of $23.2 million/mile. Thus, the rail system has again been assumed at a cost several times higher than would be a realistic case of comparing the two modes for a given set of conditions--equal for both modes.

The Model and Evaluation Methodology

The IDA Study is not the first one to attempt a comparison of rail and bus technologies. For example, Meyer, Kain and Wohl compared these modes as well as the generically different private automobile [9]; Deen and James [10] compared costs (emphasizing, however, that their comparison was limited to this aspect only) of rail and bus for specific physical conditions, similar for both; Miller et al. [11] and Smith [12] made comparisons of the two modes based on a number of assumptions and average values. Although these studies vary in details of the models and utilized methodologies, the following basic features are common for most of them:

a. A hypothetical model is developed with different assumptions for each mode;
b. Only peak hour service is analyzed;
c. Comparison is based on average values;
d. Number of passengers on each mode is considered equal;
e. Evaluation is made on the basis of minimum cost; virtually all qualitative aspects are excluded;
f. Most of these studies (but particularly the IDA's, [9], and [12]) strongly imply that their results represent the main, or even exclusive criterion for determination of which mode is "superior" to others.

Since all these studies have caused considerable controversy and yet brought widely varying results (as Deen clearly showed in his discussion [13]), it is appropriate to briefly review each one of these features, thus systematically analyzing not only the IDA Study, but also its predecessors with respect to these common features. Each one of the features will be discussed in sequence.

9. What is the value of hypothetical transportation system models?

Valuable insights into relationships of individual characteristics of systems can be obtained through generalized models. Usefulness of such models is, however, conditioned by two factors. First, they must be correctly formulated; second, the findings and their validity must be carefully defined.

The serious deficiency of most of the models--and particularly that of the IDA Study--is that they assume a different set of conditions for each mode. The rail system is based on conditions typical for existing systems, while those for buses (and jitneys) is given many highly unrealistic features. Thus, while the rail system could be built in a corridor with "average" conditions, the bus system model is valid only if:

- A freeway exists in the analyzed corridor and either has two underutilized lanes during the peaks, or has extra space in which a busway can be constructed: highly unrealistic. Or:
- A new freeway is to be built in the analyzed radial corridor so that the busway can be included in the design: quite unlikely in U.S. cities in the foreseeable future.
-There are 4 parallel streets in the CBD in which one lane per direction can be separated for exclusive bus use. In how many CBDs can 8 lanes on parallel streets be reserved to guarantee smooth flow of buses? Finally, where would buses from other radial corridors be distributed?

No city even remotely resembles these physical conditions; realistic validity of the model is, therefore, practically non-existant.

10. Can systems be evaluated on the basis of their peak hour service only?

Peak hour service, however important, is only one of the system characteristics; it is not sufficient for total evaluation. Figure 3 shows how the two compared modes differ in off-peak service in real world.

Use of averages has been discussed under point 7.

11. Will alternative modes serving the same corridor have the same number of passengers?

There is today abundant literature about the impact of quality of service on modal split, and thereby attraction of passengers to individual modes; the Study,as well as most of its predecessors, ignore this, assuming identical numbers of persons on systems with different costs and qualities of service; this can be correct only if all passengers would be totally captive, which is not the case in any U.S. city today. Extensive evidence exists that such factors as high frequency of service, reliability, comfort, all-day service, weekend service, etc., have a major impact on passenger attraction. Intensive service on controlled rights-of-way is greatly superior in these features to extensive network with low frequency utilizing surface streets with mixed traffic. Passenger trends for different modes (see, for example, the ATA Annual Statistical Reports) also show much stronger passenger attraction of rapid transit than surface transit systems.

The strongest test of validity of hypothetical assumptions is, of course, the real world. The best real representatives of the two modern rail and bus transit systems serving very similar radial corridors are the Lindenwold Rail Line and Shirley Busway. A rather detailed comparative study of these two systems (results of which are summarized in [14]*) has shown that the Lindenwold Rail Line had attracted over 50% higher patronage than Shirley Busway even prior to introduction of any feeder bus services. With the feeders the patronage is approximately 70% higher. This significantly higher passenger attraction is explained mainly by the differences in the type and quality of service illustrated schematically in Figures 1, 2, 3, and 4.

The IDA Study also has a major methodological error in assuming constant patronage regardless of user cost which varies among the several modes. The problem is as follows:

Suppose that mode I and mode II are compared: I has higher system cost and higher level of service than II for any constant number of passengers. However, due to the higher level of service, its user costs are lower, as shown in Figure 5 below. (An example of this in the real world may be express buses (I) and surfaces buses (II).)

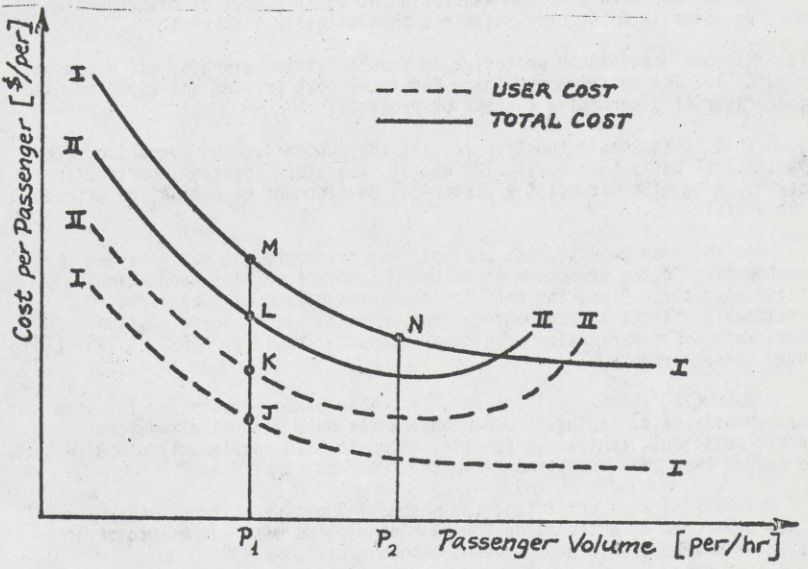

FIGURE 5. UNIT PASSENGER COST AS A FUNCTION OF PASSENGER VOLUME FOR TWO MODES

*This reference is not mentioned in the IDA Study.

Applying the methodology used in the IDA and in the quoted preceding studies, the diagram would indicate that for a given number of passengers (P_1) system II would be superior to I since it has lower total cost ($L < M$). In reality, however, since potential passengers choose modes on the basis of user cost only (disregarding total cost), and $J < K$, system I would attract more passengers on the same line than system II (i.e. P_2). Therefore, cost L of system II should be compared with cost N, rather than M, of system I. In this conceptual diagram $L > N$, which need not always be; however, comparison of L with N will always be more favorable for system I than comparison of L with M. In addition, and even more significantly, the additional ($P_2 - P_1$) passengers attracted by system I would result in direct and indirect quantitative and qualitative benefits, as pointed out in the discussion of objectives.

Another error is to assume that cost curves for all modes monotonically decrease to infinity. This is unrealistic, since each mode has a decreased level of service and diseconomies of scale when volume approaches capacity (this phenomenon in highway transportation is described in great detail in ref. [15]) and this increase in unit cost occurs for highway modes at much lower volumes than for rail.

It is concluded that the assumption of equal number of passengers on alternative modes is both unrealistic and theoretically incorrect.

12. Minimum cost as the objective in transportation planning was discussed under point 1. The question remains: Can total cost (system and user) be used for comparison of alternative systems or projects?

This is the basic question for all the quoted studies comparing modes on hypothetical basis [9, 10, 11, 12] and it, therefore, deserves particular attention. A brief review of the historical development of evaluation methods will be useful.

At the time benefit/cost analysis was developed, it was realized that the number of affected persons must be taken into account in computations of benefits and costs. Also, the need for the introduction of such direct but unquantifiable effects as user safety, convenience, etc., became obvious. The standard method for evaluation of highway projects issued by AASHO in 1960 [16] included these elements.

Kuhn [17] sharply criticized this dollar-based methodology for lack of comprehensiveness, saying: "Urban objectives have several dimensions--cultural, political, ethical, aesthetic, economic. To pursue only one dimension would indeed lead to a suboptimum from the total point of view."

Hill [18] also criticized the method: "Cost-benefit analysis, after all, was developed as a technique for examining plans with respect to their achievement of the single objective of economic efficiency."

Finally, let us quote Wohl who, in his book with Martin [19], criticizes this method (applied also in his book with Meyer and Kain [9]!). On page 227:

"Since any investment accrues benefits of concern to the investor (i.e., the "owner" or general public), a decision made without consideration of the benefits invariably assumes that the benefits from each alternative investment project are the same" (emphasis is authors'). Further, on page 228: "...thus, the total annual cost method [minimum annual cost=best] can give incorrect results and lead to improper decisions. Since the conditions under which the annual cost method always gives correct results would appear to be remote, this method is ruled out as a general economic analysis tool". And, finally, on pp. 234-235: "The annual cost method (is all but neglected in this presentation as an appropriate economic analysis method since it) fails to apply when the benefits of the alternatives being analyzed and compared are not identical; this almost always will occur when the user volumes for alternatives are not equal. Since any two alternatives being compared almost always will have both cost and benefit streams that differ, the annual cost method can hardly be judged a practical or suitable analysis technique."

In his paper which develops the basic framework for comparative analysis of transport technologies, Morlok [20] recognizes that Meyer, Kain and Wohl tried to make services by different modes comparable, but points out that this has "severe shortcomings" since different modes are inherently suited to provide different types of services.

Manheim [21] also specified to considerable detail the principles of transport system analysis emphasizing the need for a comprehensive approach rather than inclusion of quantifiables only.

Vuchic and Stanger [14] in their study of actual systems showed how many important characteristics systems have which analyses limited to costs would not be capable of incorporating. They pointed out that one system (Lindenwold) attracted 70% more passengers than the other (Shirley), the fact a hypothetical model such as IDA's would overlook.

This brief review of advances in theory and methodology of transport system evaluation shows that the methodology used in the IDA Study actually predates the AASHO evaluation procedure from 1960 which incorporated convenience and safety and recognized differences in quality of service between freeway and at-grade highway* . It is difficult to understand how such a discredited methodology can still be used in studies to analyze the complex problem of comparing urban transportation technologies.

13. Can evaluation of hypothetical models with average values on the basis of minimum cost produce valid, realistic results?

It is rather clear from the analysis of points 9 through 12 that only some overall insights of general cost characteristics of different modes may result from this type of study. However, in some cases, the results may not only be invalid, but misleading due to the inherent lack of comprehensiveness and inability to include local variations into single average values. Due to

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*There is a great similarity between the advantages of freeways over at-grade highways and rapid transit over surface transit operations.

these shortcomings and many obvious discrepancies between the models and study results on one side, and real systems and experience on the other, this methodology can certainly not be used as an adequate basis for concrete, realistic evaluation of transit modes, nor for policy formulation.

Environmental Impact Comparison

The Study compares energy consumption and air pollution impact of the alternative modes by computing the total energy required by each mode and pollutants created in its production.

Is this method of comparison of energy consumption correct?

With respect to total energy consumption, the method of estimation is basically correct, but the actual numbers are, naturally, only as reliable as the model is.

14. Is the procedure for estimation of air pollution correct?

The procedure used in the IDA Study suffers from two major deficiencies. First, the impact of air pollution depends on the quantity of pollutants as well as location of their release. Electricity is usually generated at a few power plants far from centers of human activities. Bus emissions, particularly on urban streets, are emitted directly in the areas of largest human concentrations. Consequently, even if bus emissions are lower in terms of total amount, their impact on human health is doubtlessly many times as severe as the impact caused by electric vehicles. And second, if pollution from the generation of electricity is included, should not the pollution from refining and storage of Diesel fuel (see, for example, ref. [22], pp. 4-106 to 4-109) also be considered?

It should be mentioned here that the same incorrect evaluation of air pollution impact caused by different modes disregarding location is prescribed in some DOT Manuals*, although they do not attempt direct comparison among modes in this feature; the IDA Study implies that such comparison is conclusive and only mentions the difference in location at the end without discussing its significance.

15. Have all major environmental impacts of the compared systems been considered?

One alternative system in the Study (rail) is assumed to be operable in subway through CBD; the other (bus) is assumed to have hundreds of buses (up to 576 per hour) on CBD streets. The difference in environmental effects between no vehicles on surface and hundreds of buses per hour is quite drastic. In the Study, only a highly speculative analysis of impact of the buses on other traffic is given which would apply to open highways. The computations

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*See, for example, ref. [23], pp. III-27 to III-31.

are based on "average" congestion levels, although impact is highly sensitive to its degree. Environmental impact on the CBD in terms of pedestrians, accessibility of buildings, form and character of streets and public areas--which is recognized in professional literature as extremely important and required for detailed analysis in environmental impact statements--is not even mentioned.

Sensitivity of Results to Numerical Assumptions

16. Are study findings sensitive to individual numerical assumptions?

The described deficiencies in the concepts, model formulation and methodology utilized for analysis in the Study are so serious that its findings cannot be considered valid in any respect. These deficiences are so basic that the question how realistic assumptions about individual technical details are is actually irrelevant: the results cannot be valid regardless of the quality of numerical data.

The authors claim that the results of their Study are quite insensitive to individual assumptions. However, it has been shown in the preceding analyses that several assumptions are not only 20-30%, but as much as several hundred percent off real values for conditions which exist in many cities (e.g. right-of-way costs; light rail instead of rapid transit; environmental impact analysis). It has also been shown that some numerical values used may vary as much as 10-100 times. Without tracing detailed computations, it is clear that no model can be insensitive to this order of inaccuracy and variation; if it is, then it certainly is not a very realistic model.

Specific Values Used in the Study

17. Are numerical values in the Study realistic?

Many assumed numerical values in the Study deviate considerably from realistic values based on experience in public transportation systems design and operations, and most of them are heavily biased against rail; on the other hand they are extremely favorable for cost of jitneys (unrealistically low). Since these values are, as mentioned, irrelevant due to much more basic errors in methodology, only a few will be mentioned here for illustration.

-Capacity of bus service on CBD streets is concluded to be 7200 persons per street, or 28,800 for the four parallel distribution streets—based on the data from the Highway Capacity Manual (HCM). On the busway it is claimed that buses have higher capacity than rail. The errors are:

1. HCM considers only traffic aspects of bus movement, not boarding/alighting operations. More accurate (and generally much lower) capacity values can be found in literature on transit systems rather than highway operations. The capacity of 7200 passengers would require special traffic engineering measures and it could be achieved only in exceptional cases, not on four parallel streets in one CBD.

2. Two different concepts are confused: line capacity of buses is compared with station capacity of rail, to the detriment of the latter. Under the assumptions of the Study model rail rapid transit could operate in several

ways without stopping at all stations (express, skip-stop, zonal) so that its speed would increase and cost decrease. Its capacity could be approximately doubled if, for example, a full skip-stop (without AB stations) was introduced, still retaining superior line haul service in the corridor to that of buses.

-The Study does not consider any of these possibilities of rail and arrives to the conclusion of bus superiority in capacity. This claim is considered unrealistic by all experts with operational experience in modern transit systems.

-Due to the confusion between the concepts of operating and commercial speed the Study assumes (p.A-6) that typical operating speed of buses on conventional streets is 15 instead of 12 mph: a 25% overestimate.

-On p. S-3 it is said that to insure the same comfort "..the number of seats per unit of floor area has been equalized for both the bus and rail car". If this ratio based on modern rail cars (Lindenwold Line, commuter lines) was applied to buses, one would either have a 50-seat bus with 10'6" width (2' over legal width limit), or a legal-size bus with 39 seats. The assumed 50-seat capacity is thus physically impossible to achieve: a 28% overestimate.

-Rail system is assumed as "highly automated". This assumption increases system cost substantially without any benefits that the model is capable of taking into account. Another bias against rail.

Discussion of the Political, Regulatory and Institutional Environment

Section 6 of the IDA Report represents an emotional, debate-type venture into an extremely broad range of issues regarding urban transportation systems, policy, economics, regulation, population needs, etc. Briefly, the flow of contents is as follows.

The section starts with a quote from a study of jitneys and taxis. Then it is stated that the IDA Study found that jitney has "generally lower full costs than conventional transit buses for low density residential collection". Further in the same paragraph: "By inference, bus-wagons operating as jitneys are likely to have lower full costs than bus transit for inner city circulation services (emphasis added), those bus operations within the city other than peak-hour CBD commutation" (p.123).

The logic of this inference from low density residential areas to CBD of a large city is difficult to accept. Yet, that inference is used as a basis for highly critical statements about bus services and transit in US cities in general.

Further proofs about efficiency of jitneys are based on arguments about conditions in 1914-1915 and 1920, role of Model-T Ford and ideas of the automobile inventor from 1890's, Dureya. A 1-1/2 page discussion of "Political Arithmetic of Economic Regulation" then leads into arguments that need for

conventional transit is actually artificial, imposed by "transit industry and others.." UMTA's capital grant program is accused to lead to "uneconomical substitution of capital for labor". Actually, the whole current policy of DOT, most of the states and cities, is sharply criticized. The only basis for this are the findings of the Study on costs of radial commuter transit lines during the peak hours!

One would expect that such a sharp criticism would lead to proposals of some innovative and well-defined alternative solutions. However, after quite intensive glorification of jitneys and taxis, the section closes by merely suggesting that DOT should "encourage jitney service in one or more cities without organized bus services" (i.e. in a city with population below 100,000).

This 9-page discussion of the whole urban transportation problem, without any scientific basis and with minimal connection to the Study objective and scope is truly so weak and full of unfounded sharp criticism (first of rail systems in favor of buses; then of buses in favor of jitneys; finally of all public transportation and current policies) without rational suggestions for significant improvements, that a thorough discussion of all issues it touches is not considered necessary and justified:it would have to be much longer than the text itself. Instead of a detailed analysis therefore only some comments on the most important points raised in this section will be given here.

-Each mode of transportation must be selected and designed to fit the conditions under which it must provide service. Due to inherent major differences among such modes as rail rapid transit, surface bus and jitney each one is obviously suited to a different role in urban transportation. Finding that one mode is superior to another for one type of service does not imply the same relationship for a completely different set of conditions. Findings about commuter service in a corridor (regardless of their nature) cannot be generalized for all transit systems.

-The major point of Section 6 of the Report is to degrade all types of "conventional transit" (admitting only its superiority for line-haul service) and advocate introduction of jitneys and greater use of taxis.

There have been a number of other reports of similar nature in the past: based on individual cases or system characteristics, they attempted to prove that one single mode is "superior" to all others. Such unimodal advocacies have been done at different times suggesting that trolleys, monorails, private cars, PRT, car-pools and many other modes are actually "ultimate solutions" to urban transportation. Experience has clearly shown that most cities (and certainly all medium and large ones) should optimally use several modes in a coordinated manner. Strong support for introduction of, say, dial-a-bus does not negate the need for regular and express bus; nor should it be believed that planning of a rail system will diminish the need for intensified car-pooling. A study which will produce an unbiased evaluation of positive and negative features of each mode should therefore substitute unimodal advocacy-type approach.

-Jitneys and taxis should be analyzed in a broader perspective. They certainly should be increasingly used in certain types of applications. But they should not be understood as efficient alternative modes to modern line-haul transit. The two must be complementary, the former serving generally low density areas and higher priced trips, the latter serving lines with steady passenger volume of travel. In practice jitney and taxi fares or costs, if subsidized, are typically several times higher than those of transit; their introduction instead of transit would therefore present a serious economic hardship and reduction of mobility of the population which can least afford it.

-Jitneys are widely used in a number of Latin American and Middle Eastern cities. Their characteristics in those cities are:

1. Their services are generally frequent and available at all points along served routes;

2. Vehicles move in mixed traffic without schedule so that service is not always reliable.

3. Fares are moderate but often subject to bargaining.

4. Traffic conditions in these cities are chaotic, jitneys being contributors to such situations.*

5. In some of these cities, jitneys are used predominantly by "decent" people; buses, having lower fares, serve the "plebs" . The segregation effect is often quite distinct.

6. Labor cost in these countries is much lower than in the United States.

Another fact not to be overlooked is that many of these cities with extensive jitney services (whichever have found capital) have built or are planning construction of rail rapid transit. New systems have been opened or are being constructed, for example, in Mexico City, Caracas, Santiago, Sao Paolo, Rio de Janiero, Tel Aviv and Calcutta.

-No mention is made in the Study about the trends in progressive countries which have public transportation systems greatly superior to ours (this is generally known and can be easily documented). The fact is that such countries as Switzerland, West Germany, The Netherlands, Sweden, Canada and many others are involved in intensive construction of rapid transit and light rail systems; in modernization and expansion of bus services; in development of numerous technical and operational innovations, etc. Many of these innovations are unknown even to many professionals in this country. Particular lag is found with respect to rail systems: characteristics of service, understanding of concepts and technical expertise in rail technology in the United States are far behind those in Western Europe and Japan. That is the

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* Webster [24] analyzed efficiency of different bus size in London. Decreasing size increases frequency and reduced travel time; but when bus capacity gets below 20, their congestion increases so that 10-passenger vehicles would provide nearly 100% longer travel time than those with 20 passengers.

main cause of many extremely sharp criticisms of rail in transit planning; it also causes relative inefficiency of existing systems, and low reliability of components of new rail systems. However, the lag in expertise is not limited to rail. Even our most modern bus systems could be significantly improved, as was suggested for Shirley Busway in ref. [4] (p. 29).

It appears logical that in our attempts to modernize urban transportation we should look for possible solutions in cities with conditions similar to our cities but which have much better urban transportation systems (such as Hamburg, Gothenburg and Rotterdam), rather than at those which have little similarity and much more serious problems than U.S. cities (e.g. Lima, Istanbul and Damascus).

Summary of Critique Conclusions

1. The IDA Study focuses on the extremely important area of evaluation of urban public transportation modes, which requires a much greater professional attention than it has received so far. Improved understanding of issues is becoming increasingly urgent due to the sharpening of the progressing transportation, environmental and energy crises in our cities.

2. The main objective of the Study is to analyze costs of rail and bus transit for commuting from a corridor area into a CBD during the peak hours; much of the Study's discussion and many conclusions, however, go far beyond this issue and imply that the Study has proved superiority of buses over rail for virtually all conditions. Objective and scope of the Study (as well as its technical features) give no basis for such a conclusion.

3. The objective of finding the transit mode with minimum total cost per passenger (disregarding the number of passengers attracted) used in the Study is incorrect. The maximum transportation work performed (number of passengers or passenger-miles per unit time) is the main objective in providing transit systems; their effectiveness must be measured through total benefits and costs, including quantitative as well as qualitative factors.

4. Comparison of different technologies on the basis of hypothetical cost models (with "average" values) cannot be used for the formulation of policies in urban transportation: type and level of service are the main functional features of transit systems, not the mechanical form of their wheels and running surfaces.

5. The Study assumes that public transportation should perform only commuter service into and out of the CBD, mostly during the peak hours. This type of service is incapable of meeting the basic requirements for public transportation, such as providing mobility throughout the urban area, producing desirable land use and environmental impacts, and securing a given level of mobility for the total population. The Study model is thus contrary to the goals of DOT and of most states and cities planning urban transportation systems.

6. The services provided by the two compared modes-- rail and bus-- would be substantially different, as Figures 1-4 in this Critique illustrate. Studies of real world systems of these two modes, Lindenwold Rail Line and Shirley Busway, show that these differences result in rather significantly higher passenger attraction by the rail mode. A proper comparison of the two modes cannot be made without considering these differences. The Study ignores them.

7. The compared modes were incorrectly selected and defined. Instead of rapid transit, light rail should have been compared with the express buses, due to the greater similarity of the latter two modes. Use of fixed average values makes the study inapplicable to any system and its results unreliable due to great variations of those values in the real world. Local conditions may have values greatly deviating from the averages, thus resulting in completely different relationships of modes than the averages would indicate (e.g. cost of rail right-of-way may be 5 times higher or over 10 times lower than the adopted "average" values).

8. The methodology utilized for comparison predates early methods of benefit/cost analysis and it is considered obsolete and incorrect in the profession. It is not possible to compare modes with different levels of service without considering the impact of modal split factors on passenger generation. Several preceding studies of the same topic (ref. [9-12]), however, suffer from the same deficiencies in methodology. There has been a tendency to believe that their results have a much greater validity than their scope and methods justify.

9. The Study collected several sets of very valuable and interesting cost data. The assumptions for the model and specific values adopted are, however, unrealistic in many ways and strongly biased against rail (several examples in this Critique illustrate this clearly).

10. Environmental impact of analysis of the two modes is incorrect and incomplete. Its results are slanted heavily without foundation against rail, or rather, against all electrically powered vehicles.

11. The last section (6) of the Report unjustifiably exceeds the scope of the Study and gives an emotional and self-contradictory sharp criticism not only of the rail mode, but also of all "conventional" transit and the stated current DOT (and specifically UMTA) policies of improving public transportation in U.S. cities. Opinions expressed in this superficial discussion (9 pages of text) on many broad aspects of urban transportation are in direct conflict with professional experience, theoretical knowledge and the latest urban transportation policies in virtually all West European countries, Japan and Canada: their major efforts toward improvements of urban public transportation have been further intensified during the last two years. Their investments for transit improvements are proportionally much higher than those in the U.S. The tendency of those unfamiliar with trends in other countries has been to disregard these trends with the explanation that "U.S. cities are different." There is abundant evidence that this is not the case and that we can learn very much from the countries which have, under similar conditions, developed much more advanced urban transportation systems.

12. The only positive suggestion in the Study conclusions is that jitney and taxi services should be fostered in our cities. The main support for this proposal is based on historic facts from 1914 - 1920. No comprehensive evaluation of advantages and limitations of these modes is presented, nor does the Study show awareness of the progress in those countries which have much greater experience than the United States in urban transportation and which, after careful studies, have adopted strong policies of expanding their commuter rail, rapid transit and light rail systems, as well as different types of bus services and various technical and operational innovations.

Recommendations

Since the IDA Study discusses a strongly and emotionally debated issue of relative merits of different transportation modes, it is most probable that its results will be misinterpreted as a strong "proof" that "bus is better than rail" (the cover of the Report clearly implies that). Cases of this already exist: the British press ("The Times" and "The Economist") have recently reported that the IDA Study "calculated that for town commuting, buses were faster, a third cheaper, used less fuel and produced less pollution than any form of train." The short report goes on to assail the central governments who "give lavish grants for construction (of transit systems)". It should be clear from the analyses in this Critique that the IDA Study provides no valid ground for any of these conclusions whatsoever. A great danger lies in allowing such conclusions to go uncorrected.

At the time of the urgent need for short and long-term improvements of our urban transportation systems, aggravated by the advancing environmental and energy crises, misinformation and confusion of this nature is extremely damaging. In addition to incorrect technical results of the Study, its unfounded criticism of the current DOT policies and UMTA's activities may seriously damage the reputation and effectiveness of these organizations. Imposition of choice of mode based on this type of hypothetical analysis would most probably arouse dissatisfaction and opposition by local governments and citizen groups.

Consequently, it is recommended that a strong rebuttal of the IDA Report, clearly indicating its extremely narrow scope, serious shortcomings of its concepts and methodology, and errors in numerical analyses, be prepared and distributed as widely as the Report has been.

* * *

It is apparent that the search for a clear, simplistic answer to which mode is "better" than others should be discontinued. Instead, a comprehensive study should be undertaken which will:

- Be based on a correct underlying concept of public transportation;

- Focus on type and level of service, and within that framework analyze different modes;

- Apply modern methods of system evaluation, provided by leading specialists in the field;

- Collect and utilize the latest knowledge about actual transit systems planning, technology and operation, which should be provided by professionals with experience in the field.

A study of this nature should analyze a number of parameters which influence the suitability of each mode to different sets of conditions and attempt to define the ranges of several parameters under which individual modes should be favored.

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COMMENTS ON STATEMENT OF THE SECRETARY

Mr. McFall. If you have any comments on Secretary Brinegar's statement after you have read it, we would be glad to have them for the record.

Mr. Vuchic. I will get the statement.

[Comments on Secretary's statement follow:]

COMMENTS BY DR. VUKAN R. VUCHIC ON THE STATEMENT OF CLAUDE S. BRINEGAR, SECRETARY OF TRANSPORTATION

These brief comments are written on the request by the subcommittee chairman, Representative John McFall, and in response to Secretary Brinegar's invitation for comments on his statement.

Secretray Brinegar's statement contains an interesting and very useful analysis of various aspects of transportation policy, a review of previous efforts toward its formulation, its advantages and limitations. The statement contains a number of well-stated, progressive observations, definitions of existing problems and basic goals for our national transportation system. However, most of these statements remain without any relationship with the actual policies and actions described in the same document. As a matter of fact, most of the specific analyses and guidelines for action are in direct conflict with the stated desirable approaches and goals. Some of these internal contradictions of the statement will be presented in the following seven points. The last three points refer to additional serious deficiencies in the statement which deserve particular attention.

1. "Transportation is not an end in itself. It is a means to contribute to the well-being and quality of life in our Nation" (p. 1 of the statement). This should clearly imply that the transportation system should not be treated primarily as an independent industry which should, above all, operate in a financially satisfactory manner; rather, it should be analysed first as a service which must adequately satisfy the transportation needs of the economy, movement of persons for business, recreation, etc. After adequate service is defined, it is important to insure that the service is performed in the most efficient manner.

Contrary to this, the statement bases its entire analysis of the transportation systems on individual modes—their network, costs, etc., as if the main goal in our Nation's transportation was to have financially successful independent companies operating different modes of transportation.

In conclusion, the basic approach to transportation policy should be changed from the view through individual technologically defined sectors to the functional approach through needs for different types of transportation service.

2. "The overriding thrust of Federal policy is to see that the Nation has an overall transportation system that reasonably meets its essential needs" (p. 45). Few would take issue with this statement. The discussion in the statement, however, does not examine the major existing deficiencies in this respect, such as:

Our public transportation on short-to-medium distances (up to 300 miles) is in most cases severely inadequate.

Our largest freight carrier (railroads) is in many areas literally falling apart due to totally obsolete management, technology, and operating practices;

Lack of modern traffic engineering measures, poor condition of our urban public transportation, and neglect of pedestrians make travel in our urban areas by any mode much less efficient and safe than it should without resources be, and far worse than in many foreign cities.

The statement fails to define these deficiencies and develop actions toward their solution. A comprehensive analysis of such deficiencies in our systems and definition of functions not served by present services or modes is needed.

3. "Policy tends to be confused with programs" (p. 5) is another valid statement. A tendency to confuse goals and means is also correctly criticized. Throughout the statement, however, there is a clear tendency to treat private ownership and operation and a "free market" in transportation as the main goals (e.g., item 2 on p. 45), rather than means to achieve the goal of creating an efficient transportation system. This heavy emphasis on private ownership and "free market" is particularly strange at this day and age when it is well known that some sectors of transportation present classic examples of

market failure due to the interweaving of private and public interests which are not reflected in the pricing of services. Thus the concept of free market should apply only to some sectors of transportation (e.g., some categories of long-distance freight). A flat statement that private ownership and free market should be the basic principle applied to all transportation is misleading.

On the other hand, in the cases where forces of the free market are most desirable to prevail, the Government should make sure that a free market is created. Our present system with totally different policies, ownership patterns, and financing principles of different modes certainly does not provide those conditions and the statement does not have clear enough policies to restore them; it focuses more on preservation of existing positions that on development of a desirable multimodal system.

4. "The Federal Government should insure that * * * timely action is taken to solve (those) problems (which threaten) privately operated transportation services essential to the national well-being" (p. 46). Again, this is certainly a highly desirable principle. However, the existing condition of railroads is one of the examples of failures to operate with that principle. Their reorganization with the goal of achieving a modern railroad system which would adequately serve certain defined national needs some 20 years ago would have been much more in the national interest than mere "preservation" and "cost reduction" suggested in the current reorganization plan for Northeast railroads.

While the Department of Transportation, being a relatively new organization, should by no means carry the entire blame for this long delay in an obviously needed reorganization, it is highly disturbing to notice the Secretary's emphasis of near-term solutions (p. 49, bottom) without even mentioning planning and financing of long-term solutions. Our current serious problems in urban transportation, lack of balance between private and public components of systems, discrepancy among regulations of different modes, distorted competition, etc., are primarily the result of weak or nonexistent long-range planning and transportation policy in general. Ignoring long-term planning and programs today means facing compounded ones in the future.

5. "It is of national importance that we deal aggressively and equitably with transportation issues involving conservation of scarce resources, the provision of safe transportation, protection of the environment, * * *" (p. 47). This laudable principle should be followed by such actions as introduction of taxation on inefficiency (e.g. progressive tax on excessively powered automobiles); favoring of railroad passenger and freight transport on trunk lines, trucks and buses on less loaded routes; strong favoring of public transportation in cities, particularly through provision of exclusive rights-of-way for it, which are a prerequisite for massive attraction of patronage; et cetera.

None of these measures can be found in the Secretary's statement. On the contrary, the more efficient modes for high volume travel demand are mentioned only in moderate or even "negative" terms (for example, "We will closely examine any proposal for construction of totally new fixed-guideway transit systems to determine whether it is the most reasonable cost-effective solution to that specific urban situation" (p. 48); other measures, involving often less efficient modes, are not given such a cautious "endorsement"). On the other hand, increased energy efficiency of automobiles is particularly emphasized without explanation how this will be achieved.

6. "A major cause of inefficiency in both passenger and freight transportation is the lack of close coordination among the various modes." This is certainly true, and lack of significant improvement in such cooperation and change of the present "unimodal" approaches by individual agencies has been a major failure of the Department of Transportation in its 7-year existence. The approach taken by the Secretary in his statement—treating each mode by itself rather than through a systematic review of functional needs—does not appear promising toward correction of this deficiency.

7. "* * * We must advance the overall level of knowledge about the nation's transportation system and * * * raise technical capabilities of planners * * *" (p. 50). This statement defines the problem which is probably the most serious single one; lack of professional knowledge and expertise which is felt at all levels of government and in all sectors of transportation organizations. Significant progress in this direction would be made if some attention would be given to the trends and achievements in transportation policies, financing, organization and technology in some foreign countries. A number of countries have overtaken

us in these areas, but their advances are largely unknown and generally ignored in our country. In many respects our policies are directly opposite to those of a umber of countries with more advanced transportation.

Another important step in improving professional expertise could be made by the Department of Transportation if it would begin to screen more carefully the professional qualifications of its consultants. Present procedures in this respect are certainly not satisfactory.

8. Directly related to the preceding point is the quality of analysis of individual modes in the Secretary's statement itself. Analysis of each individual mode is focused on its "capacity". It is found that all modes have capacity in excess of actual needs. This is said for highways on page 20, for railroads on page 28, waterways on page 32, and air transport on page 36. It is difficult to understand what is meant by these statements for two reasons. First, the term "physical system capacity" has no meaning. Is the capacity of our national highway system the volume of vehicles which would travel on it if each highway and street were used to capacity at the same time? Obviously, an absurd concept even in a hypothetical context. Second, overall average system adequacy need not imply that the system is satisfactory at all. If only 2 percent of the highway network by length suffers from inadequate capacity, that may affect, 40, 50 or 60 percent of all automobile trips in the country. For these two reasons the concept of "physical system capacity" does not exist (unless defined for a special purpose) in professional work and literature. Many evaluations of our present transportation system in the statement are therefore unclear and inconclusive.

9. The most serious deficiency in the statement is, in my opinion, found in the discussion of urban transportation. The Secretary has obviously been misled by inaccurate and biased opinions and reports some of which are openly aimed at prevention of improvements of all transportation in our cities. The statement that "except for our largest cities, the urban transportation problem is principally one of peak-hour capacity" (p. 25) is simply incorrect. Every large, medium and many small cities must have an adequate level of public transportation for their economic prosperity, operational efficiency and social service (for one, only 50 percent of our population are licensed drivers) ; such a system must perform many more tasks than provide peak hour capacity. Also, the quality of automobile travel in many cities leaves much to be desired ; parking and other facilities cause serious esthetic damage to cities. These are merely examples of serious problems in addition to peak hour capacity.

Apparent unfamiliarity with modern transit system planning principles and bias against rail systems (jitneys got a more favorable treatment than rail systems) may be a direct result of such studies as the recently released report by the Institute for Defense Analyses comparing rail and bus systems. Extremely serious deficiencies in approach, methodology, use of incorrect figures and derivation of unfounded conclusions of this report are discussed by this author in a "critique" which is also included in the record of this hearing. It is difficult to understand how the office of the Department of Transportation in charge of policy and planning could sponsor a report of such low quality and with such a harmful effect on all urban transportation policies and planning.

It is obvious that policies in urban transportation required major revisions if any progress is desired in the presently serious crisis.

10. It should be mentioned also that the statement displays a very strong bias toward highway transportation at the expense of modern solutions for urban transportation (consisting of modernization of auto travel on streets, public transport, and encouragement of pedestrian traffic), all forms of public transportation, and railroads. This can be observed in statements throughout the text. Let us mention only one clear illustration of this attitude.

It is stated that completion of the Interstate Highway System will mark the termination of construction of the major national federally sponsored freeway network (pp. 18–20). How can then a projection show that, despite the end to this large spending, Federal funding for Interstate/Rural/Safety/other highways remains at present levels (p. 52)? On the same page a reduction for support of Amtrak and no expansion for this desperately needed and badly neglected service is foreseen!

While most other countries (for example Great Britain, West Germany, Italy, France, Canada) have recently increased their funding of public transport systems, and railroads thus further strengthening their support to these systems,

we are apparently going in the opposite direction despite the energy, environmental and the overall urban crisis.

In conclusion, it can be said that Secretary Brinegar's statement shows a number of deficiencies in our transportation policies, many of which are discussed in this author's statement at the same hearing. The Secretary presented many self-contradictory statements, as shown above. The present directions outlined are obviously inadequate for current needs; in some ways they are regressive, returning us toward one-sided policies which created citizen dissatisfaction and subject transportation professionals, organizations and governmental units to severe criticism.

I hope that these comments, written with the intention to contribute toward a formulation of an improved transportation policy and organization, will be useful.

If desired, I will be glad to elaborate on any of the above brief comments. As Secretary Brinegar says, much remains to be done in this direction.

WEDNESDAY, MARCH 6, 1974.

WITNESS

HARRY N. COOK, EXECUTIVE VICE PRESIDENT, NATIONAL WATERWAYS CONFERENCE, INC.

Mr. EDWARDS. Our witness now is Harry N. Cook, executive vice president, National Waterways Conference, Inc.

Mr. Cook, it is good to see you here. You may proceed.

STATEMENT OF NATIONAL WATERWAYS CONFERENCE, INC.

Mr. COOK. Mr. Chairman, I wish to commend your subcommittee, for tackling an enormously complex problem, and one which is in great need of priority attention—national transportation policy. The National Waterways Conference, Inc., is especially grateful to you for letting us be heard on this vital subject. The Conference is a membership organization, now in its 14th year, of more than 500 waterway-related businesses, industries, agencies, and individuals. Included are shippers, carriers, waterway services, port authorities, water management districts, State water boards, water resources associations, development commissions, financial institutions, agricultural groups, and other waterway interests. It is the Conference's purpose to promote a wider understanding of the public value of the American waterway system and of sound, multiple-purpose management of our water resources.

The Conference is not a trade association of water carriers. Indeed, most of our members are shippers—companies which ship or receive commodities by water. Since its founding in 1960, the Conference has been primarily involved in national waterways policy issues—proposed waterway tolls and user charges, water project cost sharing, evaluation criteria, interest/discount rates, et cetera. In view of the Conference's navigation orientation, we are quite involved in—and concerned about—broad transportation policy questions, because of their impact on water transportation policy. It is from this perspective that we seek to contribute to your deliberations.

ENERGY CONSIDERATIONS

The energy crisis, as we all know, has focused new attention on transportation policy. In his message entitled Transportation Initiatives for the Nation transmitted to the Congress on February 13, 1974, the

President urged development of national transportation policy promoting maximum efficiency. He specifically called for achieving, as a national goal, "efficiency in the use of our energy resources." In a radio address on the same subject a few days earlier, the President stressed the same theme:

"In the last 10 years, we have become increasingly conscious of the effects of our transportation systems on our environment. We must now give 'equal attention to the need for energy conservation's as we design and utilize those transportation systems. * * *" (Emphasis supplied.)

It was puzzling to us that while the President recommended a number of worthwhile proposals for increasing the efficiency of our transportation system—such as improvement of mass transit and revitalization of the railroads—he ignored the most efficient mode of all: modern, economical, fuel-saving inland waterway transportation. We believe this omission signals a serious flaw in the current development of compresensive national transportation policy.

Thus, while we strongly support the development of such a policy, we must couple this support with a vigorous plea that the positive contributions of all modes be carefully and fully examined as this policy is developed. It is our experience, for several years and under both Republican and Democratic administrations, that executive branch policymakers have tended to take for granted the 25,000-mile inland waterway system.

Even though the energy crisis has created new interest in considerations of fuel efficiency, we still don't find among official policymakers the desired level of understanding of the important role which inland water carriers can and do play in a more efficienct, productive and flexible national transportation system.

PILLAR OF THE ECONOMY

For some 30 years, between the World Wars, the Federal Government operated its own bargeline in order to encourage interest in this particular mode. Today, inland barge carriers—all privately owned—move about 11 percent of all domestic intercity freight. Great Lakes carriers transport another 5-plus percent. These water carriers haul the raw materials and fuels which power America's basic industires—industries which form the infrastructure of the economy. The water carriers are equally important to the viability of American agriculture, our world trade and balance of payments positions, and the supply and distirbution of energy resources.

Like other modes, waterways have both advantages and disadvantages. Before enumerating the strong points, let's consider some of the limitations to the water mode:

It is slow. On practically all hauls, barge tows take longer than overland modes and arrival times are only roughly predictable.

It is severely constrained by geography. Inland barges can only go where there are water courses maintained at certain minimal depths and free of obstructions.

It is often at the mercy of the weather. Both high water and low water can wreak havoc with inland navigation, as we saw during and

after last year's floods on the Mississippi and Ohio Rivers. Similarly, ice during winter months can interrupt navigation as it does annually on the Upper Mississippi, the Missouri, and the Great Lakes.

Finally, barges are somewhat restricted in what they can carry. Barge transportation is best suited for bulk commodities—things like grain, ores, coal, petroleum, building materials, and chemicals—carried in massive quantities over long distances. Barge lines will never compete with United Parcel Service, for example.

Now, for some of the advantages of water transportation:

Barge transportation is extremely inexpensive, averaging about 3 mills per ton-mile of freight moved. To give you a realisic comparison, it was recently calculated that the cost of shipping a bushel of wheat from Minneapolis to New Orleans by river barge was no more than required to mail a first class letter between the two cities. And this calculation was made before the recent postal rate increase.

Barge tows are extremely stingy with fuel. Although great attention is currently being focused on revival of the railroads, and we believe governmental action in this area is long overdue, it is nevertheless a little known fact that barge lines are about one-third less energy-expensive than railroads.

Inland navigation is quite well equipped to help the Nation solve its energy supply and distribution problems, since it is in the field of movement of energy resources that the barge industry has its greatest experience and physical capability. Approxiamtely 60 percent of all the cargo currently moving in domestic waterborne commerce consists of coal, crude oil, and refined fuels.

Now, let's examine some of these characteristics of waterborne transportation in a little more detail.

COST ADVANTAGE

Against a general pattern of inflation in the rest of the economy, water carriage has tended to hold down rates throughout the transportation sector. Because of innovative technological improvements in tow boat power, equipment and operation and continual advances in barge capacity, design and utilization, average barge rates in 1973 were lower than the ceiling rates of World War II. I doubt that this is true for any other sector of the economy. Congresswoman Leonor K. Sullivan—Missouri—recently pointed out that the inland water transportation industry, while carrying more than 16 percent of the total ton-miles of intercity freight, collected only 2 percent of the Nation's freight bill. Generally speaking, $1 will move a ton of freight 5 miles by air, 15 miles by truck, 67 miles by rail, and 330 miles by barge.

While rising fuel prices are certain to affect this situation—the fuel which tow boats use has doubled in price in the past year—water carriers are still likely to remain the least-cost mode for the simple reason that higher fuel costs will affect with even greater adversity the more energy intensive modes such as airplanes, railroads, and trucks. Further, the low rates charged by the inland water carriers affect many consumer products which never move by barge. This is because waterways, being the lowest cost mode, tend to restrain rail rates.

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The lower rail rates, in turn, help to hold down truck rates where those two modes are in competition. Inland waterways form a heavy anchor against inflationary pricing throughout the transportation industry.

In addition to the rate advantage, waterways possess a unique advantage—low capital cost requirements for capacity expansion—which should bear on future decisionmaking to provide needed new national transportation facilities. The Department of Transportation estimated that a capital investment of $8.9 billion in expanded rail facilities from 1970 to 1980 would be needed to permit an increase in capacity of 221 billion ton-miles during the decade.

But, according to the same estimates, waterway traffic could be increased by 215 billion ton-miles, nearly the same amount, for a capital investment of only $1.6 billion. Dividing out the aggregate figures, we find that the capital cost per 1,000 ton-miles of capacity expansion by rail is $39, while the capital cost per 1,000 ton-miles of waterways capacity expansion is less than $7.50. In other words, the boxcar shortage might be overcome with barges much less expensively than with boxcars.

FUEL ADVANTAGE

In 1973, Dr. William E. Mooz of the Rand Corp. completed a study, the most authoritative one to date, of the energy efficiency of the various transportation modes. He concluded that, on the average, water carriers consumed 500 British thermal units (Btu's) of energy per ton-mile of service, the lowest of any mode. Rail was next lowest with 750 Btu's per ton-mile, followed by pipelines at 1,850 Btu's, trucks at 2,400 Btu's, and air carriers at 6,300 Btu's per ton-mile.

Conversion of these figures from Btu's to gallons of fuel would show that water carriers burn about 3.6 gallons of diesel oil per 1,000 ton-miles of cargo moved. This figure is somewhat higher than studies conducted by the National Waterways Conference, Inc., indicate. In 1961, water carriers moving about one-fourth of all the commerce transported that year on the inland rivers and waterways reported consumption of 2.92 gallons of fuel per 1,000 ton-miles of freight service. In 1968, a survey involving water carriers moving about one-third of the total inland waterborne commerce reported fuel consumption of 2.99 gallons per 1,000 ton-miles. These studies would indicate that water carriers require only about 410 Btu's to move a ton-mile of freight—significantly lower than Dr. Mooz's findings.

The fuel economy of inland barge carriers, however, has been completely overlooked by the U.S. Department of Transportation. DOT recently published a booklet entitled, "Energy Statistic, a Supplement to the Summary of National Transportation Statistics" which declared—without adequate investigation—that rail transportation was more energy-efficient than water transportation. Despite its knowledge of Dr. Mooz's research, DOT chose to rely upon questionable data. The data were so unreliable, in fact, that researcher Eric Hirst of Oak Ridge National Laboratory admitted that his calculation of the fuel efficiency of water transportation was "particularly open to question." However, DOT made no mention of these reservations, and indeed reported in its publication that water carriers burn 680 Btu's per ton-mile, compared to only 670 Btu's for rail transportation.

DOT used Dr. Mooz's figure as to the fuel efficiency of truck transportation—2,400 Btu's per ton-mile—rather than that of Dr. Hirst, who found truck transportation requires 2,800 Btu's per ton-mile. Why DOT published Dr. Mooz's findings, in this instance, rather than those of Dr. Hirst was not explained. Neither was it explained why Dr. Hirst's figures on rail and waterways fuel efficiency, rather than those of Dr. Mooz, were cited in the DOT publication.

The National Waterways Conference, Inc., called this matter to the attention of Transportation Secretary Claude S. Brinegar and requested that DOT circulate a clarification presenting the complete findings of both researchers and including Dr. Hirst's reservations as to the accuracy of his findings. DOT responded that it hoped to meet shortly with our and other associations in order to develop substantive information as to the fuel consumption efficiency of the various modes. Meetings between DOT and transportation-related associations should be fruitful, but I submit that such discussions should have taken place before publication of DOT's misleading report.

If DOT is to be instrumental in the development of transportation policy responsive to the President's interest in maximizing fuel economy, it would seem imperative that we have a Department of Transportation whose objectivity and command of the facts is unquestioned. In a matter of such vital importance as the national transportation policy development, we believe DOT should exercise care to insure that its policy recommendations are accurately and completely documented.

TRANSPORTATION POLICY

When the Transportation Department was established in 1966, it was principally for the purpose of achieving a unity of direction among transportation modes and programs. After prolonged departmental debate and numerous delays, "A Statement on National Transportation Policy" was brought forth in September 1971. With respect to the inland waterways system, DOT took a very negative view:

> By generally accepted standards, most, if not all, of the economically justifiable opportunities for significant extensions of the Nation's inland waterways system have been exploited * * *. * * * First, the method used to measure [waterway] costs and benefits tends to overstate benefits; second, the discount rate prescribed by law is unrealistically low. One recent study shows that even where projects were recommended as economically feasible, they were with one exception, not economically justified because the benefits typically occurred so late in the project's life that it was worth postponing the investment. The net result has been that a water project has often been built where a railroad could have provided the needed transportation service at a lower total social cost. * * *"

Does this sound like a policy statement which seeks to fit waterways into the context of a coordinated national transportation system? It smacks of an intense prejudice against inland waterways. It infers that the Nation has over-invested in domestic water transportation and that the proper course of governmental policy should be to correct this grievous error of the past.

The Department of Transportation is not correct in claiming that present investment criteria overstate the benefits of inland navigation projects. There is strong evidence that the opposite is true. Under present policy, only national income efficiency benefits of proposed river and harbor projects are taken into consideration. All secondary, in-

direct and developmental benefits are totally ignored. At any rate, numerous Federal agencies have been trying for decades to develop adequate investment criteria. DOT's lack of objectivity is demonstrated by its cavalier attempt to reduce the whole problem to a single unqualified phrase which rejects presently used waterway criteria as inadequate. It is to be inferred that DOT resents the fact that Congress expressly refused to delegate to its unlimited authority to set standards and criteria for investment in new waterways?

Also, DOT's so-called policy statement charges that the discount rate for waterway projects is "unrealistically low." This is hard to understand in view of the fact that waterway projects are virtually the only governmental program subjected to benefit/cost analysis in which future benefits are discounted as a specific rate to present-day values. Investment in other transportation modes certainly is not based on application of any discount rate. Every mile of U.S. highway is, in fact, evaluated on the basis of a zero percent discount rate. So, again it seems ridiculous for the U.S. Department of Transportation to set transportation in meeting America's natural resources and energy needs. In its report, "Material Needs and the Environment Today and Tomorrow" the National Commission on materials policy said last summer:

> Since much of the raw material required by industry is heavy and bulky, water transportation is of unique importance to the Nation's materials system. The most efficient way to move such material to factories, and in some instances to transport finished products, is by barge on inland waterways or by deep draft vessels on the Great Lakes and oceans. No little share of the success of American industry is due to the great system of harbors and waterways available to it. * * *
>
> The possible effects of the imposition of waterway user charges upon the Nation's materials system could be serious. So little is known about the nature and magnitude of these effects that it would be unwise to change existing policy until an in-depth study is available.

The National Petroleum Council's Industry Advisory Council to the U.S. Department of the Interior has just issued a report titled, "U.S. Energy Outlook: Coal Availability," which emphasizes the importance of water transportation if the Nation is to achieve energy self-sufficiency through greater reliance upon coal. That report said:

> Water transportation of bituminous coal is especially valuable to the U.S. energy supply because it permits economical long-haul movement. On the one hand coal is the only primary energy source available in abundance. Reserves of petroleum and natural gas are relatively more limited, and large quantities are imported. * * *
>
> Costs for water carriage of coal are much less than for rail or truck. The 1965 average rail charge for coal haulage was 9.9 mills. Large-volume, steady coal movements on the inland rivers, by contrast, commonly cost only 2.5 mills per ton-mile, and the average is probably about 3.0 mills. * * *
>
> The long-haul service of waterway transportation, of course, is limited by the extent of the system. In other words, only coal fields and markets which have waterway access can be served, and some of these are less accessible because of the circuitry of the present navigation routes. This is a forceful reason for expeditious progress in the construction of new waterway connections and extensions. * * *

NAVIGATION HAS FALLEN "WOEFULLY BEHIND".

Whatever national transportation priorities are adopted for the coming years—those recommended by the administration, priorities

developed independently by Congress, or a combination of the two—we feel it is important that the Nation get on with the necessary investments and construction to provide adequate movement of people to and from their places of employment, and the safe, dependable flow of the cargo vital to maintenance of our economy.

Inland waterways, despite the fact that their worth has gone largely unnoticed, make a substantial contribution to this flow. If we are to meet our future transportation needs, we must make even greater use of the waterways. I would like to share with you the observation of Dr. Arthur Maass, professor of government at Harvard University, who appeared just last week before a Senate subcommittee concerned with Government reorganization proposals. Dr. Maass said:

> The navigation program, for example, has in my view fallen woefully behind national needs in recent years. The present energy crisis is only an illustration of this. We probably should have better facilities for transporting petroleum products, coal, and other commodities on the inland waterways. In all likelihood, adverse environmental effects of water transportation are less than those of moving the materials by highway and truck. Yet the navigation program has not been examined seriously in this context. It has been in the Executive's doghouse.

Considering DOT's statements regarding water transportation in its 1971 policy statement, it would appear that the Department of Transportation may be at least partially to blame for the executive department's shortsightedness with respect to the tremendous national potential of inland waterways. In the future, we hope that DOT and other executive agencies are able, in fact, to focus on the positive advantages of water transportation and can capitalize on these strengths to help develop a stronger, more viable national transportation system. The waterways, by all fact and reason, should be a vital segment of the total transportation complex.

NAVIGATION POLICY

Navigation is unique among the transportation modes in that it is tied to both water resources policy and transportation policy. Unfortunately, just as the Nation seems to have been neglecting transportation problems over the past several years, we have also failed to adequately meet water resource needs. The National Water Commission spent 5 years studying this situation but its report, issued last summer, reflected a disappointing obsession with application of marketplace model pricing theories to public investment policy. Its recommendations included, for example, mandatory marine fuel taxes and lockage fees imposed over a 10-year period which, if implemented, would—by the administration's own estimates—so disrupt the rate structure of inland water carriers as to divert 60 percent of barge traffic to other modes.

Even if the alternative modes could absorb the diverted traffic—which they don't have the equipment to handle at the present time or in the foreseeable future—such a shift would result in an enormous increase in fuel required to move the same amount of cargo. That, in turn, would mean more particulate matter pumped into the air, more congestion on the overland routes, and even more noise. Much higher consumer prices would, of course, be necessitated. Fortunately, Con-

gress has so far shown little interest in implementing the National Water Commission's recommendations in this regard.

Finally, the purpose of a national transportation policy should involve more than simply building vehicular systems to move people and goods. A transportation policy should promote achievement of social and economic goals as well. Indeed, waterways policy has been vigorously employed by the Congress down through the years to attain a variety of national policy objectives: unification of the Nation, furtherance of westward expansion, defeat of sectionalism, and in more recent times, regional development, aid to agriculture, income redistribution, export expansion, et cetera. Moreover, navigation has often been the central element of farsighted multiple-purpose water resources development involving such features as flood control, water supply, recreation, reclamation, and fish and wildlife enhancement.

One problem with our current transportation system is that it was largely built in response to—rather than in anticipation of—demographic patterns. For instance, we always widen a street after buildings and people are crowding the edges of it, rather than beforehand. We embarked on Interstate Highway System to connect population centers already in existence, rather than fashion a highway system that might serve population dispersal and distribution goals. We have failed to make full use of the transportation system in achieving policy objectives.

One of the most pressing social problems of the day is population imbalance resulting from the large-scale migration of farmworkers to metropolitan areas. While the railroads at one time served to generate new development and stimulate new population patterns, the era of major rail service expansion is now passed, and only the waterways offer much potential for contributing to the correction of this imbalance. New navigation systems invariably serve rural and underdeveloped areas and, through the magnetism of new industrial job opportunities and other incentives for a better life which follow, draw people into these regions. This permits orderly development while, at the same time, relieving the strain on already crowded areas.

An example of this may be seen along the McClellan-Kerr Arkansas River navigation system which has been in operation for only a few years. Columnist Joseph Kraft visited the area last year and observed that the waterway had already transformed the Arkansas River from a silted stream to a scenic and lifegiving river, while turning such cities as Tulsa, Okla., into world trading centers. Mr. Kraft wrote:

> Ecologists and environmentalists cannot on their own check forever the pressure for more and more development along the coasts. At best they can slow down the headlong growth. They can achieve full success only if the pressure for growth which comes from individuals and families and companies is channeled elsewhere, as has been the case in the Arkansas River Valley. * * *

USING WATERWAYS TO ADVANTAGE

In addition to attracting people, waterways can also be useful in moving people within urban areas. The waterways are well adapted to passenger transportation in metropolitan New York, San Francisco, Seattle, New Orleans, et cetera. The fact that most large cities are situated on waterways would seem to give added importance to ferries,

hydrofoils, and other watercraft in alleviating urban mass transit problems. But, as in the case of freight transport, the waterways are largely overlooked by passenger transportation planners.

Just a few months ago, Lulejian and Associates, Inc., a consulting firm of nearby Falls Church, Va., completed a Government-commissioned study of the urban commuter possibilities afforded by water transportation in the Washington, D.C., area. The study noted that such complexes as Rosslyn, the Pentagon, L'Enfant Plaza, Crystal City, and Old Town Alexandria were either located on or near the Potomac River and concluded:

> The one method of commuter transportation that requires the least new construction and interference with existing roadways, residences and businesses is water transport. It also has received the least emphasis in the United States in the past 20 years. * * *

Many large urban areas lies along commercially navigable water, but totally overlook its transit possibilities. The Lulejian consultants advocated a pilot project here in the Washington metropolitan area aimed at correcting this oversight. The consultants recommended a system of high-speed passenger ferries moving commuters up, down, and across the Potomac River at rush hour, and conducting leisurely sightseeing excursions for tourists in the middle of the day. "There would be no interference with existing or projected land transportation systems, residences, or businesses," the report said. "The waterway is already in existence and no private owners would have to be evicted, thus eliminating legal problems involving right-of-way acquisitions." They also estimated that the system would pay for itself at fares comparable to what Washington Metrobus riders currently pay.

To our knowledge, the study has attracted little interest in either the appropriate Federal or local jurisdictions—despite the growing Metrobus deficit, large-scale cost overruns on the subway under construction, and the almost constant public uproars over thoroughfare plans, parking problems, and the like. I do not know if Potomac River ferries could help relieve the Washington area's commuter problems. I do know that despite successful experiences in mnay other countries—Russia, for example, has more than 1,000 passenger-carrying hydrofoils in use daily—we in America have not given serious consideration to expanded passenger movement by water since the day of Tom Sawyer. That is a tragedy.

NEEDED: AN ASSISTANT SECRETARY FOR WATERWAYS

In view of the repeated failures on the part of the Department of Transportation to take accurate account of the important role of inland waterway transportation, we recommend the establishment of a new top-level position within DOT—an Assistant Secretary for Waterways. It should be his responsibility to encourage the development of water transportation to its utmost potential so as to maximize its inherent efficiencies and to integrate the waterways fully into a coordinated, unified national transportation system.

A proper function of the Department of Transportation should be, we believe, to exploit the unique advantages of each mode of transportation to the maximum extent possible. The waterways, we con-

tend, has not yet attained their potential. Not only has water transportation been one of the great success stories of U.S. national policy; it can be just as vital in the uncertain months and years ahead.

Waterways policy can be instrumental, in the future as in the past, in the attainment of social and economic goals. Waterways' relationship to energy matters and the retail prices of goods has already been discussed. Waterway development is likewise vital to increased food production for domestic consumption as well as for export. Indeed, our ability to export grain and other foodstuffs cheaply may turn out to be the most potent instrument of foreign policy we have. Our exports affect our balance of trade, and the value of our dollar, and the inland waterways are playing an even more important role in foreign trade.

In short, we believe the Nation must develop a full-fledged, coordinated national transportation policy, emphasizing efficient utilization of each mode for the tasks to which each is best suited. We trust that water transportation will be recognized as a full partner in this system—as we strongly contend has not been the case in previous transportation policy deliberations. If these things occur, we are convinced that the inland waterway system will have much to contribute to the Nation's future well-being.

WATERWAYS USER CHARGES

Mr. EDWARDS. Thank you, Mr. Cook.

I should have said that we are old buddies, went to college together, and a few other things.

We come from a part of the country where waterways are very important. The budget each year contains quite a few million dollars for waterways development. There is always this continuing talk about user charges on the waterways. I think it is fair to say the waterways users are opposed to user charges. Yet we are involved with trust funds on highways, where there is a fuel tax for highways, and we have a trust fund having to do with airways, to build airports and so forth. What can you say about user charges as far as the waterways are concerned?

I am thinking in terms of a trust fund or as it has een proposed, a single trust fund for all forms of transportation.

Mr. COOK. You are absolutely right in pointing out the administration spends hundreds of millions of dollars on ports and harbors, operation and maintenance, construction of new facilities. There is an ongoing program which had its beginning in 1824 and has been continuing up until the present time. With regard to user charges, I tend to support the view of the Commerce Department which maintains that before serious consideration is given to the assessment of charges and the establishment of the trust fund, out of which to fund future waterway improvements, that an indepth objective study should be made of the economic impact of user charges.

As you just may know, the Department of Transportation, on many occasions, including the 1971 national policy statement, has recommended the imposition of user charges on water carriers—usually a fuel tax and in some instances a lockage fee. To my knowledge, there has never been an impact study of the implications of

user charges. The studies conducted by the Department of Transportation have dealt with the various user charge mechanisms, devices, taxes, tolls, levies, fees, which might be imposed, the difficulty in collection, the amount of revenue and this type of thing.

The Department of Commerce thinks that user charges would have a very serious impact on the volume of waterway commerce. The diversion of commerce to other modes might have adverse effects on the environment, on fuel consumption, and on the economy in general, including balance of payments on exports, foreign trade, as well as trade and commerce in the United States.

I think before there is any serious discussion about the application of user charges and the establishment of a trust fund that there should be a very detailed look taken at what all this means as far as the improvision of waterways go.

As you know, the waterways had tolls since the earliest days of the Republic. This is one element of policy consideration, as far as waterways go. It is the feeling of the National Waterways Conference that waterways have much to offer, whether or not there is a system of tolls and user charges. They are low cost, they are fuel-efficient, they do serve national goals and objectives, and those positive aspects of water transportation, its attributes, should be taken into account at the highest policy levels and the waterways should be integrated into a national transportation system, a system that is truely national in scope and serves the national interest.

GOVERNMENT WATERWAYS ORGANIZATIONS

Mr. EDWARDS. I am interested in your suggestion that there be an Assistant Secretary of Transportation for Waterways.

Is there such a function now being performed in some other branch of Government? What do you come under other than the Interstate Commerce Commission?

Mr. COOK. The Interstate Commerce Commission regulates only the certificated water carriers which account for the movement of 14 to 20 percent of the commerce that moves by water. Most waterway commerce is private contract carriage and is not regulated by ICC.

As you may remember when the Department of Transportation was established in 1966, the Congress did not see fit to include the Maritime Administration. The Maritime Administration, only about 2 or 3 years ago, has activated an Office of Domestic Shipping, which now becomes something of a promotional agency for the inland waterways.

Prior to the establishment of the Office of Domestic Shipping in the Maritime Administration, there was in fact no promotional agency for the waterways other than perhaps the Army Corps of Engineers, which is really a construction arm, a construction agency.

The Department of Transportation does have the U.S. Coast Guard and another agency of the Department of Transportation is the St. Lawrence Seaway Development Corporation. Outside the Coast Guard and the Seaway Corporation, there are no water functions.

I think this may explain one of the reasons why waterways have come out on the short end as far as the development of national transportation policy is concerned.

The other modes—railroads, highways, airways—have promotional agencies with the Department of Transportation who are looking after their interests. I would think it would be in the interests of the waterways and the Department of Transportation, in view of its overall interests in national transportation matters, to establish an office which would have jurisdiction over waterways.

DOT WATERWAYS JURISDICTION

Mr. EDWARDS. Are you saying the Department of Transportation has no concern, no legal concern, as far as waterways are concerned, the inland waterways?

Mr. COOK. I don't know about "no concern."

Mr. EDWARDS. Concern is probably not a good word. Are you under their jurisdiction in any particular way?

Mr. COOK. The Department of Transportation has an Assistant Secretary for Policy or Policy Development, or Policy and International Affairs. The title has been changed several times. They have attempted to develop policy involving waterways. The act creating the Department of Transportation specifically prohibited the Department of Transportation from setting investment standards for navigation improvements. The Water Resources Management Act of 1965 vests this authority in the U.S. Water Resources Council, a Federal Government interagency coordinating group.

I suspect that the Department of Transportation has some overall interest in the waterways by virtue of inclusion of the Coast Guard and the fact the Coast Guard has aids to navigation and search and rescue and certain other missions on the inland waterway system.

However, I maintain that the department does not have a sufficient office to cover the function; that its responsibilities should be enlarged to take a look at the full scope of waterways in the context of national transportation policy.

ADDITIONAL COMMENTS ON STATEMENT OF THE SECRETARY

Mr. EDWARDS. If you will, submit some comments on the Secretary's statement yesterday. I would like to have your assessment of what he said. You can submit that to the staff and it will be put in the record.

[Comments on the Secretary's statement follow:]

It was gratifying to note that the U.S. Department of Transportation has revised its figures on the fuel consumption effiiciency of the major transportation modes. Secretary Brinegar, in his testimony before the subcommittee, stated that a gallon of fuel would move 300 ton-miles of freight by water, 180 ton-miles of freight by rail, and 50 ton-miles of freight by truck.

Just a few weeks ago, DOT published energy statistics, which asserted that waterways required 680 Btu's to move a ton-mile of cargo, while railroads needed only 670 Btu's to move the same payload. As pointed out in my statement to this subcommittee, I protested DOT's assertion that rails were more energy efficient than waterways .The fact that DOT has now changed its tune is significant. and Secretary Brinegar should be commended for correcting DOT's serious blunder in this area.

It is still our contention, however, that DOT should issue an addendum clarifying its earlier, misleading publication which has now been widely circulated and is being continually quoted as an authoritative source for statistical information on energy usage for transportaion purposes.

Secretary Brinegar's testimony as to national transportation policy is little more than a warmed over version of DOT's 1971 national transportation policy statement—particularly with regard to waterways. Despite the fact that the Transportation Secretary said fuel consumption data "shows the strong need to promote additional carriage by water and rail where feasible" the view is again expressed that "most, if not all, high-priority opportunities (in a benefit/cost sense) for developing our rivers and coastal areas have already been exploited."

The National Waterways Conference, Inc., has to take exception to this assertion.

Many high priority opportunities remain for the further development of America's inland waterway system. Consider, for example, the following categories of improvements:

1. Replacement of outmoded locks and dams built between the early 1900's and World War II on the Upper Mississippi, Illinois, Monongahela, Kanawha, and other rivers.

2. Construction of connecting channels between major river systems. The just-started Tennessee-Tombigbee Waterway will link the Tennessee Valley and the eastern gulf coast. Other waterways connecting separate river basins should be given full consideration in the future.

3. Deepening of inland navigation channel from 9 to 12 feet wherever feasible would add to the efficiency of the entire waterways system while decreasing costs of water carriage. A basic 12-foot waterway depth, at least on the mainstem Ohio-Mississippi system, would be highly desirable and in the national interest.

4. Maintenance of authorized channel depths is a problem in itself. Environmental restrictions on dredge spoil disposal are creating massive problems for waterway shippers on the Great Lakes, Upper Mississippi and coastal channels, as well as in numerous harbors.

5. Extension of the navigation season offers large-scale benefits to the American economy. Winter navigation, therefore, should be a high priority item for improving the potential capacity and efficiency of the Great Lakes and Upper Mississippi waterway systems.

The contention that the waterways are today fully developed—or almost fully developed—does not take adequate account of projected increases in the volume of waterborne commerce. The recent report of A. T. Kearney Associates for the U.S. Maritime Administration forecast a three-fold increase in water carriage by the year 2000—if improvements and extensions of the waterway system can accommodate traffic increases of the projected magnitude.

Whether such improvements and extensions of the inland navigation system can in fact be made in the future depends on the justification criteria. In its 1971 policy statement, DOT contended that potential benefits of proposed navigation projects were frequently overstated and the discount rate was too low. Secretary Brinegar appears to agree, since his recent statement identifies as a key issue the current procedure "for evaluating the need for proposed inland waterway investments." He apparently has reference to section 7(a) of the Department of Transportation Act, which prescribes the procedure to be used in determining the navigation benefits of water resources projects.

Section 7(a) stipulates that navigation savings be computed by comparing present water carrier rates with prevailing rail rates. This requirement must be reaffirmed. If navigation benefits were to be derived on the basis of marginal costs of competitive costs, the proposed project would—in all likelihood—be doomed, thus eliminating the only sure means by which rail freight rates could be reduced. It is essential, therefore, that waterway feasibility studies utilize current rates, not projected water-competitive rail rates or marginal rail costs.

Secretary Brinegar stated, in his testimony, that transportation service should be provided, as much as possible, "through the competitive forces of the private sector, or, if the private sector is inappropriate, by State and local governments." Such a policy would hardly be workable for inland waterways. Because of the nature of the river system, it would be absurd to turn the provisions of waterway rights-of-way over to private interests. There is, after all, only one river system in each river valley. The river system is owned by everyone, and it should be publicly developed for the general betterment of all the people.

If waterway development were undertaken on the basis of private considerations, it would shrink projects to commercial scale. Locks and dams would be built and channels dredged purely on the basis of short-term factors.

Optimum site utilization is a governmental decision which allows for the design of comprehensive river basin programs serving multiple public purposes rather than a single purpose oriented toward private interests. This points up the difference between the behavior of the Federal Government which has responsibility to all the people and private industry which is directed toward profit maximization.

If commercial interests had to bear most of the investment costs of navigation projects, then it is reasonable to assume that commercial interests would have a much larger voice in the kind of projects which would be built. Given the private sector's necessity for almost immediate benefit payoffs, this would preclude the construction of large-scale programs like the Arkansas River navigation projects which are characterized by their long-term, region-building features. If we want development that is meaningful to future generations, Federal responsibility is absolutely crucial.

In his statement, Secretary Brinegar said that Federal expenditures for navigation investments or operations "should be recovered from the users and other beneficiaries in a manner that is appropriate to the degree of benefits received." In other words, he supports waterway user charges.

To burden the Nation's most economical and fuel-efficient mode with user charges at this time—when toll-free waterways have been national policy since the Republic's earliest origins—does not make sense. To add to waterway costs by the imposition of tolls when all other costs are rapidly escalating would be the height of folly. The continued availability of low-cost, toll-free water transportaion is one of America's most valuable tools in fighting inflation.

The potential adverse impact of waterway user charges on energy conservation was illustrated in a paper prepared by economist Marvin J. Barloon of Case Western Reserve University and submitted last fall to the U.S. Office of Management and Budget. The paper, Shallow-Draft Inland Waterway Fuel Consumption and Cost Sharing, projected that user charges sufficient to recover the full costs of Federal navigation services would divert enough traffic from water carriers to less fuel-efficient modes to require the additional annual consumption of 163.7 million gallons of fuel. That is to say, 163.7 million additional gallons of diesel fuel would be required with no addition in the amount of cargo moved.

The magnitude of traffic diversion—and the resulting increase in energy consumption—would of course be less in the case of user charges aimed at recovery of less than full costs of navigation services. But the question must be raised, especially in today's energy situation, of why any transportation policy would be entertained whose net result would be a decline in the overall energy efficiency of the Nation's transportation system. The goal should be precisely the opposite.

DOT, since its inception, has campaigned for waterway tolls without bothering to investigate the economic impact which would certainly result. Had it not been for the concern of the U.S. Department of Commerce, inland waterways might today be subject to tolls or similar levies. Twice within the last 4 years, the Commerce Department has stopped tolls proposals advanced by DOT. Just last fall, the Commerce Department questioned DOT's latest waterway fuel tax plan in a position paper which, according to Traffic World, said in part:

"We * * * believe it is particularly important at this time to assert a strong position in opposition to navigation user charges pending a full assessment of their impact on domestic and foreign waterborne commerce and a comprehensive evaluation of long-term national transportation requirements. * * * With respect to foreign commerce, U.S. commodities compete in the world marketplace and foreign commodities compete with domestic products, many of which move by the inland waterways, in the U.S. marketplace. It would seem inappropriate to increase the cost of inland waterway transportation without assessing its effect on the internationally competitive position of domestic commodities in U.S. and foreign markets, and on balance of payment considerations.

"* * * Any study of the impact of cost sharing for water resources investments on inland waterways navigation projects must also consider the effect on the Nation's deepwater port system as well, particularly with respect to diversion of inland waterway cargoes to other modes and resulting alterations to existing trade and traffic patterns in the case of deepwater inland waterway ports located along each coast and the Great Lakes where the shallow-draft inland waterways merge with deepwater harbors, navigation locks, and channels. * * *"

An objective, detailed study of potential impact should be the first step in any

tolls inquiry. However, we believe that an in-depth, unbiased investigation would show that the damage to the domestic economy, to waterway-oriented industries and communities, to export expansion and international trade would exceed the revenue which might be derived from tolls collections. Toll-free waterways provide public benefits far greater than the Federal costs involved. And besides, waterways are not the only transportation mode receiving Federal assistance.

The national interest should lie in assuring the provision of an efficient transportation system, including inland navigation. The need for additional water transportation service is so great that any obstruction to its full utilization would be counterproductive. Tolls would, in all probability, impede the capability of the U.S. transportation system.

Water transportation clearly has a key part to play in the alleviation of some of the more painful considerations of the emerging energy crisis. About 60 percent of all waterborne commerce consists of fuels—coal, petroleum, and refined petroleum products. The cheaper the transportation element the less the energy is going to cost the public. In addition, water transportation has other timely virtues:

—It requires less fuel per ton-mile of cargo moved. According to Secretary Brinegar's latest figures, water transportation is 67 percent more efficient than rail transportation.

—It can be expanded at lower total cost than other modes. In relation to cargo capacity, barges cost far less than boxcars.

In this context, any change in established national policy which discourages the extension of the inland navigation system or investments in water transportation equipment is in direct conflict with the national interest in maximizing the full potential of the U.S. transportation system. Waterways are the mode which can best and most efficiently move the coal, oil, and refined petroleum products now in short supply.

Rather than urging waterway tolls and restrictive criteria, DOT policy should properly require the full coordination and integration of water transportation into the national transportation system in order to assure the availability of cheaper transportation to the public and to spread the benefits of Federal waterway investments much more widely. The inherent advantages of waterways—as well as those of other modes—should be given maximum scope. DOT should, in short, use its good offices to end the misallocation of resources resulting from the present head-on competition among the various modes and work to meld the transportation modes, navigation included, into a unified, viable, cohesive national transportation system.

WEDNESDAY, MARCH 6, 1974.

WITNESS

J. EDWARD ANDERSON, PROFESSOR OF MECHANICAL ENGINEERING, UNIVERSITY OF MINNESOTA

Mr. MCFALL. Our next witness is Mr. J. Edward Anderson, professor of mechanical engineering, University of Minnesota.

We are very glad to have you here this afternoon, Mr. Anderson. We would be pleased to have your statement at this time.

Mr. ANDERSON. Thank you, Mr. Chairman.

First, I might tell you a bit about why I am here. I have done a study for the Minnesota State Legislature over the last 3 years to examine the characteristics of new transit technology for the Twin Cities area and in doing that work we have formed an interdisciplinary task force at the University of Minnesota that involves economics, people in various branches of engineering, and also through that work we have conducted two international conferences on new transit technology which enabled us to get a pretty good feel for what is going on around the world in this area.

What I would like to do is submit the statement for the record and summarize my remarks.

PREPARED STATEMENT

Mr. McFALL. Very well.

[The prepared statement follows:]

Mr. Chairman and members of the committee. I am very grateful for the opportunity to testify before you today on national transportation policy. It is an honor and a privilege to be able to appear before you, but I am humbled by the complexity of the task of attempting to say something helpful about so comprehensive and diverse a topic. It is a very healthy sign of constructive government, Mr. Chairman, that you have thought it of importance to devote your time to these questions.

My statement is in three parts, the first two of which are relatively brief. First, I will try to deal with the question of the desirability of a new national transportation policy; second, I will consider how such a policy should be developed; and, third, the main portion of my statement, are some suggestions as to what a national transportation policy should contain.

WHY SHOULD WE HAVE A NEW NATIONAL TRANSPORTATION POLICY?

Today the needs and desires of our citizens for mobility are in conflict with the need to preserve our physical environment and to minimize the use of natural resources. Individuals need mobility to pursue their economic and social interests. The economy of the Nation needs fast and low-cost transportation of both people and goods if it is to maintain a competitive position on the international scene. But outmoded policies and often the lack of policy is resulting in increasing conflicts between these needs for mobility and for conservation.

The era of abundance and unlimited growth in material wealth appears to be behind us. We are entering an era of scarcity. Simultaneously, projections of present trends indicate that the number of trips per day will approximately double in the next 20 years. Whether we attempt to meet or to moderate these new demands for travel, our actions must aim to achieve balance between our technological systems and nature if we are to survive in the long-term future with anything like the standard of living to which we have become accustomed. We can no longer afford an economy of waste. We must now, to a greater degree than ever before, make the best possible use of our resources of land, minerals, energy, and capital. We can no longer afford to ignore the negative side effects of our transportation systems. In fact, it is becoming recognized to be in the national interest to minimize the negative side effects of all technological systems. But in so doing interest conflict and can be resolved to the benefit of the general public only by fair and just examination of these conflicts in an atmosphere of openness and understanding such as can be obtained satisfactorily only on the basis of guidelines set down in an accepted, up-to-date policy statement.

Because of the lack of an adequate national transportation policy, we are not making use of our talents to solve our transportation problems to the degree possible and desirable. Those of us who have observed firsthand the progress in transportation in other industrialized nations recognize that the United States is lagging in providing adequate transportation both in our urban areas and between them.

HOW SHOULD A NATIONAL TRANSPORTATION POLICY BE DEVELOPED?

These hearings are of great importance in initiating a process of policy development, but I am sure that no one will believe that 2 days of hearings will produce such a policy, nor would it be possible to develop such a policy within the walls of a single agency, however competent its people may be.

We in the Twin Cities have been hotly debating transportation issues for years. The process has involved many agencies, boards, commissions, citizens' groups and the State legislature. Through processes of open hearings and free exchanges of ideas we are much closer today to agreement on transportation policy for the Twin Cities metropolitan area than any time in the past, although by no means are all of our differences resolved. I am including with my statement three major documents related to transportation policy development in the Twin Cities: The first is the Transportation Chapter of the Metropolitan Development Guide developed by the Twin Cities Metropolitan Council; the second is a report

developed by the Citizens League of the Twin Cities following many weeks of listening to and questioning resource persons from all points of view, and discussion among committee members; and third, a statement adopted as policy by the Minnesota Senate Urban Affairs Committee.

If 3 or 4 years of discussions, hearings, and meetings of all types have been necessary to begin to resolve transportation policy for one metropolitan area for ground transportation alone, one can begin to appreciate the dimensions and complexity of the process of developing a transportation policy for the entire United States for all modes. A strong temptation in developing such a policy is to hear only from officials of various State and Federal agencies and to develop a policy on that basis. One does not, however, have to be for long a student of the workings and interests of these agencies to realize that they do not necessarily reflect by themselves a balanced view of the public interest. In today's political environment, credible government action requires broad public involvement.

A national transportation policy should be developed by use of two fundamental processes:

1. Development of understanding of the consequences of various alternative policies as they are projected 10 to 20 years in the future, as can be done only by professional interdisciplinary analysis, and presentation of the results in ways which can be easily understood by the public; and

2. By integration of the views of hundreds of opinion leaders who examined various segments of the transportation question from various points of view. The Department of Transportation should foster the development of position papers on national transportation policy from as diverse and representative a group of people as possible, and should be encouraged and provided with funds to hold conferences in various parts of the United States on national transportation policy. Within the Office of the Secretary of Transportation there should be a transportation policy office. Its task should be to coordinate the inputs of various groups including of course the Congress with the results of analysis of the consequences of alternatives, and, on this basis to draft tentative national transportation policy statements. These statements should then be sent for comment to a variety of people at the Federal, State, and local level. Only by cycling through this process several times would it be possible to approach a working document which could be called national transportation policy.

WHAT SHOULD NATIONAL TRANSPORTATION POLICY CONTAIN?

I believe that national transportation policy should contain statements about:

1. Future conditions as they relate to the provision of adequate transportation;

2. Specific transportation needs as they are understood in terms of future conditions;

3. Characteristics of alternative modes of transportation applied to needs and conditions of the next few decades;

4. Integration of these modes with each other;

5. The appropriate annual rate of expenditure of Federal funds needed to improve existing transit systems and build new ones;

6. Specific needs for and methods of carrying out research and development in transportation; and

7. The need for and methods of carrying out international cooperation both in operation and in research and development in transportation.

FUTURE CONDITIONS

Transportation will be affected by the amounts and types of energy and material resources available, by the growth and distribution of population, by the need to reduce air and noise pollution, by improvements in communications, and by value changes. Transportation policy should reflect implications of the rate of consumption of energy and material resources by existing transportation modes as compared to possible new alternate modes. It should take into account the philosophy of increased security through diversity in the use of energy and material resources, and should recommend reduction, where possible, in dependence on unstable sources. In particular, significant efforts should be made to reduce dependence on oil.

The distribution of the population added to the United States in the coming decades will strongly determine needs for transportation. Will—or should—

these new citizens concentrate more and more in existing metropolitan areas or will they distribute among smaller towns or new cities? Within urban areas, will the population continue to be distributed in the low density, rambling patterns produced during the fifties and sixties, or will it be desirable or possible to develop more concentrated urban settlements? Can new transport systems be developed in time to influence the bulk of the required new development? There is evidence that the citizens of the United States will pay dearly both in terms of the lack of adequate farm, forest and park lands, and in increased costs per household if cities are allowed to grow as they have in the past.

National transportation policy should address the question of the desirability of compacting urban living arrangements to reduce direct and indirect costs of transportation. But it should not be thought that a simple solution will be found. Urban rail systems have been proposed, in part, on grounds that they are the sought-for panacea, but considerable analysis shows that they are not. Costs are too high and stations too widespread to enable them to have significant effects. Some of my analysis has persuaded me that new types of automated, fixed guideway systems may be far more effective (see appendix). Transportation policy needs to be interwoven with land use policies that provide economic and social incentives for people to live within city boundaries rather than move farther and farther out.

On the other hand, persistent efforts to obtain data have convinced me that much too little is known about the types of living arrangements and population densities which in the long term may be the most desirable, or about the feasibility or desirability of moving toward living arrangements that would significantly reduce transportation needs. National transportation policy must therefore address, based upon sound social analysis, the desirable direction of changes in population distribution.

Transportation policy needs to examine the degree to which introduction of improved communication systems such as cable television may reduce the need for travel. Neglect of rapid advances in the communications filed may produce significant overestimates of transportation needs.

Transportation policy needs to address the consequences of attempting to solve problems of pollution by adding devices to existing transportation vehicles. My impression is that these bandaid solutions are extremely costly and can be temporary only.

In describing future alternatives, the policy statement should use the results of analysis to develop appropriate trends for certain indicators of progress. These may be cost per passenger mile, energy consumed per passenger mile, average trip length, and the average number of trips per person per day. All of these factors have been increasing, but the increases are not necessarily desirable. It would appear that all of these factors must be reduced. The effects of various levels in these parameters in models of the future may help provide indicators of success of national transportation policy.

Some specific transportation needs

The needs addressed here are my judgments based upon over 5 years of professional involvement in questions of urban transportation. This includes not only engineering activity, but involvement in interdisciplinary educational activities related to the future, interdisciplinary research in new solutions to urban transportation problems, attendance at dozens of meetings of public agencies grapling with other problems or urban transportation and analysis of their reports, and hundreds of discussions with citizens, university groups and agency personnel primarily in Minnesota but also in over 30 other cities in the United States and abroad.

My judgment is that land use and tax policies need to be developed to concentrate urban areas more than is presently the case, but this does not mean going to the opposite extreme of attempting to force people into high-rise apartments. For example, in the Twin Cities in metropolitan area all of the growth projected to the year 2000 A.D. could be accommodated inside the interstate belt line (300 sq. mi.) if at that time the average population density in this 300 square mile area were the same as the present average density within the land area of the cities of Minneapolis and St. Paul (700 people/sq. mi.). We know that a density of 7000 people/square miles is neither too high to cause tensions produced by overcrowding nor excessively low, because we

experience it today. We need to remember the Greek philosophy of the golden mean—extremes either way in almost anything is bad.

Cities that grow too large eventually confront problems that may be insurmountable. We therefore need to develop practical means to encourage greater settlement of existing smaller satellite cities and towns that are now losing population to the larger metropolitan areas where social and economic opportunities are thought to be greater. Practical means probably require both encouragement of industries to move away from the big cities and vastly improved transportation to these cities. Low-cost, high-speed transport systems which would make it possible to commute from cities of about 100,000 people 50 to 100 miles to the larger cities could make these communities more viable alternate choices. But, of course, the implications of such a policy on energy demands needs to be carefully considered.

Effective, economic alternates to the automobile need to be developed based upon the philosophy that these alternates must offer service which will be used because it is in the self-interest of the individual to use them. It is undesirable and impractical to try to force people to use time-consuming and uncomfortable transport modes. With the goal of offering real alternatives to the automobile in mind, new modes must meet the following needs of individuals:

1. 24-hour service, on demand;
2. Good access to the urbanized community (the area considered by future land-use policies to be urban);
3. Speed equal to or exceeding that of typical auto trips today;
4. Safety equal to or better than that of present public transport systems;
5. Comfort equal to that of automobiles;
6. Freedom from anxiety;
7. Low and stable costs; and
8. Simplicity and convenience so that almost everyone can use the system unaided.

The new modes must take into account needs of the community and the Nation. Some of these are:

1. Minimum land use so the new modes do not further intrude on space available in the urban area and hopefully will increase land available for other purposes;
2. No division of communities;
3. Minimum disruption during installation;
4. Acceptable visual impact;
5. Reduction in transportation noise;
6. Reduction in air pollution;
7. Reduction in energy requirements;
8. Reduction in dependence on oil:
9. Reduction in urban blight produced by excessive numbers of automobiles;
10. Ability to shape development in desirable ways;
11. Ability to improve movement of freight as well as people; and
12. Cost effectiveness so that construction and operation do not make excessive demands on the public treasury.

Characteristics of various modes of transportation

Many transportation studies being performed around the United States attempt to model the consequences of alternatives in terms of costs and consequences for communities. The principal results of these studies should be reviewed in terms of the needs. In this analysis both the desirable features and the negative side effects of various forms of transportation need to be clearly identified. Certainly, in urban areas, there is already very strong support to move away from high reliance on the auto-highway system into a greater balance between modes. This is understood by examining social and environmental impacts of urban freeways, time wasted in congestion, impacts of noise and air pollution on the community, blight produced in the community by automobiles, the toll of life, limb, and property, and the low degree of mobility provided the person who cannot or does not wish to drive. Means for improving the efficiency of the automobile system must, of course, be examined very carefully, for this system must provide the backbone of the transportation needs in cities for many years ahead. Current attempts at promoting car-pooling, integrating taxis with transit, and development of dial-a-ride and subscription bus systems are important examples.

Bus transit.—The desirability of the fixed-route, fixed-schedule bus system

must be examined. Clear recognition must be given to the fact that the service concept is so much poorer than that of the automobile system that, no matter how shiny and new the vehicles are, they will not get many people out of automobiles unless literally forced. I think forcing people is neither necessary nor desirable. Generally fixed-route, fixed-schedule bus systems are used only when there is no other alternative.

Rapid-rail transit.—The characteristics of rapid-rail transit need to be very clearly understood. To many people it has seemed to be very logical that development of rail-transit systems within urban areas would be a desirable national policy and that these systems would solve many of the problems of the automobile system. Unfortunately, however, a careful examination of the actual performance of rapid-rail systems in cities shows that the results are disappointing in terms of solving problems of transportation. The basic reason is that the cost of these systems is now between $20 and $40 million per two-way mile. It would be staggeringly expensive (tens of billions of dollars) to install a sufficiently extensive grid of rapid-rail systems in a typical American city to reduce the problems of transportation enough to matter. A second reason is that the service concept does not meet a sufficient number of individual needs. Stations must be widely spaced making access poor.

Rapid-rail systems are in fact suitable for only a very few high-density corridors which exist in very limited locations in the United States and probably do not promote desirable living arrangements anyway. The prospect of large Federal grants to build these systems has encouraged city planners to plan about as extensive a system as they think can be funded. The result is a system which can be used by a disappointingly small number of people for a small number of their trip demands. This means that the vast majority of transit trips are bus trips, and the use of the system requires much waiting and transferring. The huge expenditure for the rapid-rail portion of the system forecloses the possibility of finding funds to develop more efficient systems.

In Los Angeles, an estimated expenditure between $5 and $7 billion for a rapid-rail system could, in the estimation of the consultants, increase the ridership on transit on both rapid-rail and buses up to only about 7 percent. In the Twin Cities, an expenditure of about one to one-and-a-half billion dollars for a backbone rail system with bus feeders is projected to raise transit ridership by 1990 to only 6 percent of the total number of trips as compared to its present 3 percent. Unfortunately this is at a time when it is anticipated that the number of trips will double.

Rapid-rail systems have been highly oversold in many cities in the United States. They are a classic example of wasteful technology. Much money will be made in planning and building these systems but the rising expectations of citizens developed by overly enthusiastic transit agencies during the planning period will be dashed once the systems are completed. The much acclaimed Bay Area Transit System is expected to attract only about 3 percent of the trips in the BART district. Total transit ridership on the Montreal transit system including its Metro was about 271 million trips per year in 1972, but ranged from 279 to 327 million passengers per year in the decade before the Metro system was installed (in 1965). In Washington, D.C., information I have obtained indicates that once the subway system is completed the percentage of trips on transit will probably not be increased at all. The total cost per trip on the Washington Metro is estimated to be about $3.

Purchase of an expensive, highly capital-intensive transit system by a city is an attractive way to bring money into the community if 80 percent of the costs are paid for by the Federal Government. By raising the hope that funds can be obtained for developing these systems, intense controversies have risen all over the United States. I have personally been very much aware of the controversies in Seattle, Los Angeles, Minneapolis and St. Paul, St. Louis, Houston, Chicago, Detroit, Pittsburgh, and Atlanta. Reason can begin to prevail in transit planning only after the characteristics of rapid-rail transit are generally understood.

In the debates in the Twin Cities over alternate modes of public transit including rapid-rail transit, it has finally become clear that the major reason for promoting these systems is development. It seems to be conventional wisdom that the development around stations of rapid-rail transit systems will be sufficiently significant so as to reduce the sprawling growth of these urban areas to an extent sufficient to make the investment worthwhile. The studies in the Twin Cities of Minneapolis and St. Paul show that this is simply not true. In

fact, without adequate land-use policies, it may result that rapid rail will increase rather than reduce urban sprawl because it makes it easier for the more affluent people who work downtown to live farther from the city center. In any case, the entire process of urban development is much more complex than can be dealt with so simply. If rapid-rail systems were to promote the intense development often claimed, the result is of dubious value to the community because of socially undesirable features of life in high-rise apartments and the disruption caused to the community surrounding the stations because of increased traffic flows. A medium density of population makes much more sense. In Minnesota, the metropolitan council, the State Senate, and the citizens league have all examined rapid rail as compared to other alternatives and have rejected it. But the prospects of large Federal grants keeps rapid rail alive and takes attention away from more effective solutions.

New modes of transportation.—A great deal of analysis performed by many groups in many countries around the world is indicating that a choice among the existing options in public transportation will not produce significant inroads in basic problems with the present autodominated system. We now have a poverty of options. Vigorous research and development is needed on new modes of transportation if we are in any significant way going to solve our transport problems. New intermediate-capacity automated systems are being developed which fill the gap between the very high capacity (and high cost) of rapid-rail system which is needed only in a few corridors in a few of our major cities, and the much lower capacity of conventional fixed-route, fixed-schedule bus systems.

The terms personal rapid transit and dual-mode transit have been prominent in discussions of these new systems. It is very important in policy statements to clearly define terminology in regard to these new modes. In the United States at the present time there are many developments underway on automated systems that have some of the characteristics of personal rapid transit or dual-mode, but yet are still a kind of hybrid between rapid-rail transit and true personal rapid transit. Calling these systems personal rapid transit, for example, the Morgantown system has caused a great deal of confusion. While the Morgantown system uses off-line stations, automatic control, and demand-activated service in the offpeak hours, it is really a type of automated tram, sometimes referred to as light-guideway transit or a people mover, but it is not personal rapid transit. These automated trams use larger guideways to support larger vehicles with room for standees and are used in shared and scheduled modes during rush hours. All of these characteristics cause the cost per trip to increase and the acceptance to decrease.

The two most promising intermediate-capacity systems are personal rapid transit and dual-mode transit. The differences between these systems are now beginning to be understood well enough so that their characteristics can be merged and hence the cost of development programs can be substantially reduced. The pros and cons of these modes need to be discussed among leaders in the development of the various systems in the most open and objective way so that proponents of various systems can begin to understand one another.

There is no question that new modes of transportation are controversial. Neither is there a question that personal rapid transit systems are a threat to promoters of rapid-rail systems. The reason they are a threat is that when people compare objectively the service and economic characteristics of a personal rapid transit system with the rail transit system, they choose to forgo construction of the rapid-rail system and wait for personal rapid transit. This has happened in Minnesota.

The flexibility of these new modes of transportation appears to make them adaptable to automated freight hauling and the use of a great deal more containerization than exists today. These are factors which can vastly increase the efficiency of freight movement in the United States, and should be considered in a national transportation policy.

Intercity transportation.—Thus far I have considered only urban transportation, which is the field I have concentrated my own efforts in research in the last 5 years. I have felt it important in my work to address problems of intercity transportation, but I continue to come back to the conclusion that improved ground transportation between cities will be really feasible only when intermediate-capacity automated systems are available in fairly widespread networks so that when a person travels from one city to another he has mobility once he gets there.

A transportation policy must address appropriate balances between air, auto, truck, and rail transportation and must address carefully the implications of each of these modes for energy use. The transportation policy must allow for the development of new inner-city modes of which the most prominent appears to use magnetic levitation and propulsion. But the speeds at which magnetically levitated vehicles would go between cities may be lower in the future than projected from past trends. This is because the energy consumed in a trip is roughly proportional to the square of the speed. Thus, if energy is priced at its real cost, it may not be that greater speed means greater economy.

Integration of Modes.—Finally, in the discussion of transportation modes and transportation technology it is extremely important to address the problem of integration of these modes in order to improve the efficiency of the entire system. In so doing, intermodal transfers need to be arranged with the individual patron very clearly in mind; the movement of people as well as vehicles must be considered.

The annual rate of expenditure

I am certain that others will address the appropriate rate of expenditure for conventional systems required to provide immediate relief. In the case of the new systems I have discussed, the rate of expenditure needs to be adequate so that several alternative designs and design features can be proof tested and compared; and, of equal importance, so that an adequate assessment of the socio-economic and environmental impacts of these systems can be made early enough so that the results can influence the designs. A major objective of these investigations should be to develop systems which can generate enough revenue to pay all the costs. The fact that this is not true of conventional transit systems is a prime reason for slow progress.

Such a program will require a research and development investment of at least $20 to 30 million for 5 to 7 years. If, during the R. & D. program, it becomes generally evident that the new systems should be widely deployed, the rate of deployment should be determined by a balance between yet-to-be-determined economic impacts and the need. If, for example, a goal is to reduce oil consumption in urban areas by 50 percent in 20 years, the rate of investment in new systems may have to be as great per year as about 5 percent of the present annual direct investment in the automobile system. This is very roughly $6 billion per year,[1] about equivalent to the space program at its peak.

Research and development in transportation

Research and development on new modes of transportation is badly needed because present modes of transportation have proven incapable of producing significant reductions in the major current and future problems of transportation, and do not adequately meet the needs stated above. A goal in urban areas should be to obtain true balance between the automobile and public transit. In the Twin Cities, as mentioned above, it is estimated that the number of trips per day will double in the next 20 years. The goal of a balanced system by 1994 would therefore mean that the number of additional trips would equal the ridership on the new system in 1994. Then the projected need for more roads and for increasing congestion would be reduced if not eliminated.

Reliance on oil.—Research and development is needed because our present modes of transportation rely entirely too much on oil and generally use too much energy. Alternative energy sources could be hydrogen obtained by hydrolysis or electricity generated from fuel sources much more abundant within the United States than oil. Research and development can show how to make present systems use less energy and can lead to new, more efficient systems.

Foreign activity.—A vigorous research and development program needs to be developed in the United States because it is very apparent to those of us who have examined work of this type in other industrialized countries that the United States is not yet making full use of its technological capabilities in supplying transport needs. Badly needed new systems already in full-scale testing in Germany, Japan, and France are still only subjects of research in the United

[1] This figure was obtained as follows: The 1960 census showed that the land area of U.S. cities of 100,000 population and over is about 8,400 square miles. To get 50 percent of the trips on the new system, the average line spacing would have to be about one-half mile. Then the total length of guideways is $2(8,400)/(\frac{1}{2})=33,600$ miles. At $\$3.5(10)^6$/mile this is about $\$120\ (10)^9$. Dividing by 20 years, we get $6,000,000,000 per year. This estimate is admittedly rough.

States. Foreign experience indicates that we in the United States need to develop much better partnership among government agencies, industry, and the universities.

Impacts of New Systems.—Research and development in ground transportation cannot be only engineering research. It is enormously important that engineering research be accompanied by careful examination of the implications of new systems for society by urban planners, economists, sociologists, and other social scientists. As new systems like personal rapid transit and dual-mode transit are developed, technology assessments of the implications of these systems on society need to be made while the research and development is being done, because understanding of the impacts will lead to modifications in the specifications for the technical hardware. If the technical development is done in a social vacuum, it will be done wrong.

It is desirable and useful now to examine the impacts of the freeway on urban society and it is also desirable and useful to examine the impacts of rapid-rail systems like BART on urban society; however, these examinations are too late to have any influence on those systems. This mistake of inadequate early analysis of impacts must not be repeated. National transportation policy must direct that the socio-economic and environmental implications of new systems be studied as fully as possible before these systems are deployed. Our own interdisciplinary analysis at the University of Minnesota, which has involved interaction with hundreds of groups, indicates that there is a great deal that can be said about these systems before they are in operation. This analysis has also told us much about the characteristics that should be built into new systems.

Institutional Arrangements for R. & D.—I would like to make some comments on the institutional arrangements needed to perform adequate research and development in transportation. In the area of personal rapid transit, the work in Japan has been sponsored by the Japan Society for the Promotion of Machine Industry, an organization outside of the usual transportation agencies, but with sufficient funds to build and test full-scale new transport systems. My latest information is that this month, Japan will be testing some 60 four-passenger vehicles in a network personal rapid transit system in a suburb of Tokyo. A similar test will probably not be available in the United States for at least 3 to 5 years unless new policy directives are given. In West Germany, the work on personal rapid transit has been promoted by the Ministry of Science and Technology, which has sufficient funds to cause the development of full-scale tests of new systems. In France, research and development on transportation systems is sponsored by the Institute of Transport Research, which is responsible for a PRT-system development which is now in full-scale testing at Orly International Airport in Paris.

Research and development in the U.S. Department of Transportation seems to be done as a part of each agency's responsibilities, the majority of which relate to operations and development related to present systems. This is doing R. & D. pretty much as a side issue.

Research and development in ground and air transportation in the United States is badly needed, but it is my belief that it can be done effectively only in an organization whose sole mission is research and development. One possibility would be a separate transportation research administration within the Department of Transportation at the same level as the other operationg administrations and responsible for research and development on all types of new transport systems and on their impacts. It would appear logical and desirable to develop this new agency not from the beginning but by changing the charter of the National Aeronautics and Space Administration so that it could apply its talents across the entire range of transportation problems. Some people have argued that this would not be desirable because the resulting systems would be too expensive. This feeling results, I would respectfully suggest, from a misunderstanding of the nature of engineering activity. Engineers work to specifications. If the specification is to put a man on the Moon safely within a decade that is what the competent engineer will do but because of the small quantity of highly specialized hardware, unit costs will be high. If the specification is for a low-cost, highly reliable transportation system which can be mass produced, that is what will result. We can ill afford to waste talent because of misconceptions.

I would believe, however, that it would be better to pattern this new organization after the old National Advisory Committee for Aeronautics, not after NASA, because what is needed is research and development on systems which are de-

signed and built by industry, and on the ability of these systems to meet the basic needs of both individuals and communities. The transportation research agency would not purchase and operate its own systems, but would provide information needed so that improved and validated systems could be offered to municipalities by private industry.

Research and development of the type envisioned will not be highly successful if performed, monitored and fostered only by people within the transportation research agency itself, however competent they may be. The broad spectrum of talent available in the United States needs to be applied to advise the Federal agency in the direction of its research. As is the case with NASA, the new transportation research agency should form broad advisory committees of various specialists to assist and criticize its work. Only in an atmosphere of the great openness and cooperation between Government, industry, and the universities will it be possible to carry out the research and development needed to meet national transportation needs.

International cooperation

My own experience in working with new types of transportation systems has been that the problems are worldwide and similar in many different countries. Many conferences have been conducted on private initiative outside the Department of Transportation to bring together specialists from all over the world to discuss and exchange information on their work. My group at the University of Minnesota has found these conferences enormously useful in broadening and deepening the work on new systems which we have been conducting. It would appear to be an appropriate part of national transportation policy for the Federal Government to sponsor, encourage, and promote these cooperative international conferences and seminars.

CONCLUSIONS

Problems within the United States of the environment, of energy- and mineral-resource limitations, and of finance indicated that if we continue present trends our future will look bleak indeed. I am convinced, however, that by properly applying technology well assessed for its socioeconomic and environmental impacts, coupled with effective institutional arrangements, we can go a long way toward solution of the Nation's transportation problems at modest cost without the enormously detrimental side effects we experience today. If we develop the kind of national transportation policy that can make this possible, the future need not look more grim day by day. We can work simultaneously toward humanized technology and minimum-waste technology, and in so doing develop a brighter future for America. We need to put our best people to work to solve these problems.

Appendix

TRANSPORTATION AND URBAN DEVELOPMENT

J. Edward Anderson

The pattern of development and redevelopment which may be induced by a particular form of public transit is of prime importance to many urban planners and concerned citizens. The streetcar produced strip development along its tracks. Since World War II, the auto system has taken over as the major transportation factor in the growth pattern of cities. The result has been what has become to be known as "urban sprawl" and is considered by many to be undesirable. Before examining the affect new transit systems may have on urban development and redevelopment, we need to examine more closely what it is that is undesirable about urban sprawl and what if anything can be done about it. My observations on this question come from discussions with planners and geographers, from literature, and from several decades of observation as an urban resident.

Urban sprawl in the United States has resulted from the compounding of individual decisions as to where to live and from the lack of enforceable landuse plans. The automobile has been a prerequisite to urban sprawl but, by itself, could not have produced it. In my judgment, the fundamental driving force has been simply the desire for privacy, fresh air, closeness to nature, and a nice place for one's children to run and play. In the early days of the auto, only the wealthy could afford both a home in a nicely wooded area on the outskirts of town and a car for transportation to the office. The wealthy have influenced town politics and so have been able to get better and better roads built to their then isolated communities. As these communities grew, they built schools and of course they made certain that these schools were of high quality. Two more driving forces then came into play. First, the desire of many parents who could not quite afford it to take advantage of the better education they felt their children could get by attending suburban schools; and second, the fact that taxes were lower outside the city limits. After World War II, low down payment, low interest GI home loans and auto loans were the final factor needed for development of a market for single-family suburban homes for people of average income. Land developers were ready to supply this market and, from the viewpoint of most of them, profits would be maximized if every possible lot were developed. Community objectives like parks and playgrounds appear not to have been of prime concern to private developers. Also, these facilities do not contribute directly to the tax base. From the viewpoint of the individual family, the move to the suburbs was a thrilling event. It would have been difficult indeed to persuade people that there may have been anything wrong with it.

Urban sprawl does, however, produce detrimental effects. Some of them are the following:

1. The lack of regional planning in the United States has resulted in far too few good parks in suburban areas. As a counter example, in Minneapolis, foresighted community leaders almost sixty years ago caused the city to purchase lands around the chain of lakes on the periphery of the city. Many scoffed at such a ridiculous waste of public funds, but these lands now form a chain of parks which

are a prime asset to the whole community. They not only have recreational value but have been an obvious factor in keeping many of the more affluent within the inner city. The parks have been a magnet to attract desired development. It is a real loss to the whole metropolitan area that more recent community leaders did not follow the example of their forefathers. As a result, there are far too few parks in the suburban areas of the Twin Cities.

2. The cost per dwelling of utilities is higher in the lower-density suburban communities. When people first moved to the suburbs the pattern was to have one's own cesspool and well. Power lines were provided to meet the demand. As the lots filled up, cesspools became overloaded and wells contaminated. Pressures built for sewers and waterlines as well as for better roads, schools and playgrounds thus causing property taxes to go up, reflecting the real costs of low density living.

As a minimum, it would seem desirable for metropolitan authorities to fully inform families of the obligations they will incur in moving to a new suburb. A problem now is that the family is simply not aware of the total financial burden it is assuming when making the down payment. To so informed people would of course run counter to past policies of encouraging maximum growth.

3. Low-density housing tends to isolate families and to decrease the sense of community. In the case of families that have been able to afford only one car the wife is much more isolated than when she lived in town and could walk to many places of interest. Margaret Mead has written and lectured in depth on this topic. Quite evidently an important additional factor in this isolation is the frequency with which Americans move.

4. The cost per ride of providing public transit is inversely proportional to the population density. Thus bus systems which were economically viable in the inner city could not survive in the suburbs. Lack of public transportation increases the isolation of those with no access to an automobile.

5. Conservationists have warned that too much valuable farm land is going into housing and have calculated that if this land continues to be gobbled up for a few more decades at the present rate, the United States will have to worry about an insufficient supply of good farm land. For example, many formerly fertile agricultural valleys in California are now smog-filled suburbs.

I am persuaded that the current form of urban development is detrimental and that policies should be developed to shape growth in desirable ways. The basis of these policies should be a very thorough quantitative understanding of the underlying factors which have determined current growth patterns, and which may determine growth patterns in the decades ahead. It is important to appreciate that for many reasons the future will not be a mere extrapolation of the growth trends of the past.

Some of the policies which should be developed (and in some areas are being developed) are the following:

1. Identification of and purchase of appropriate lands for parks and playgrounds.

2. Development of information for the potential suburban homeowner in order to inform him of the full potential cost of moving to the suburbs.

3. Review and approval by a central and democratically elected authority of all requests to build roads, transit lines, sewers, water lines, and power lines; and identification of areas in which such approval will not be granted.

4. Concentration of non-residential activities in well-located major centers of predetermined maximum daytime population. The maximum population of each should be determined from consideration of the ability to supply all utilities including transportation. These maxima should apply to the downtown as well as to other major centers. The philosophy of the greatest possible growth of any one center should be abandoned as being socially undesirable to the community at large.

5. Establishment of the desirable range of population densities. We have pointed out difficulties with too low a population density. Too high a population density is also socially undesirable.

6. Creation of a transportation plan with sufficient capacity to provide the needs of the above policies. Recognition should be given to the fact that the flow in any transportation corridor is proportional to the average trip length. A pricing system should therefore be worked out to discourage longer trips.

Within a framework of policies such as those suggested above, it is meaningful to discuss the possible effect of a particular mode of transportation on urban development. A public transit system may have a significant influence on urban development if it can attract a significant fraction of the total number of trips within the entire urban area, not just to the downtowns; and if it can help to reverse the major driving forces which cause people to want to move out.

In our auto-oriented cities, no conventional transit system is able to fulfill these criteria in a significant way. In the case of bus systems, lines can be changed too easily to influence development decisions. Also, the service concept of conventional bus lines fails to address the needs of people and therefore fails to attract a significant fraction of the trips. People are asked to bend their habits to meet the needs of the system, i.e., waiting for vehicles, picking up and letting off other people unconnected with one's own trip, and transferring. New service concepts like door-to-door subscription service or dial-a-ride may increase transit ridership--a desirable goal--but they are too much like the auto to produce changes in development patterns.

Studies of the influence on development of potential new on-line-station, fixed-guideway transit, i.e., rapid-rail transit, come to similar conclusions because the cost per ride is too high in low and medium density communities to build a sufficiently extensive system. The cost per ride is too high both because of the high construction cost and because the service concept is too inferior to the auto to attract many trips. These systems may cause some concentrated development near downtown stations, but will do practically nothing about urban sprawl.

Now consider Personal Rapid Transit. If PRT does influence urban development and redevelopment in significant ways it will first have to be a very successful system in terms that will be reflected in the cost per ride. For many reasons, we

believe the cost per ride will be close to if not below a reasonable fare, particularly if the system is used for movement of both goods and people. In the following discussion, it is assumed that this is true and that properly designed overhead guideways will be acceptable at least along major arterial streets, freeways, and rail tracks; since only then can PRT affect development decisions.

In the downtowns, these guideways may be as close together as two blocks, but in residential areas the lines would be placed along arterials one half to one mile apart. A major point is that the location of the lines should be determined in accordance with an overall development policy. If PRT becomes accepted, there will be pressure to extend the lines farther and farther into the suburbs. But if this is done according to a carefully developed plan, then it would not produce the undesirable features of urban sprawl. Because the system would be designed to be physically attractive and quiet, residential communities could be planned and built near the lines to minimize the walk to the stations. The spaces farthest from the lines could be planned as open spaces for a variety of purposes. Small electric cars and bicycles could provide access for those too far from the lines to walk.

With a network of high-capacity PRT lines in the inner city, the use of automobiles would be reduced. This would reduce the negative side effects of the auto, i.e., noise, air pollution, physical blight, accidents, excessive land use, etc. Many parking lots could be restored to green areas. Streets could be narrowed and partly converted into linear parks thus further reducing auto traffic and increasing the beauty of the city. The result would be a city which would begin to attract and hold people rather than drive them away. Downtowns could restrict the use of automobiles without causing economic stagnation because people would have a viable alternative mode of travel, in fact, an alternative far more convenient as a means of access to downtown than exists today. With easy access to the downtowns and other major centers, people would go to them because of the attractions they offer. Thus it would seem that PRT would satisfy the needs of downtown interests as well as the interests of the community at large. Coupled with other policies, PRT appears capable of producing very significant positive influences on the whole community.

I am reminded of a statement by Daniel H. Burnham in the preface to a report of a comprehensive city plan developed over a half century ago: "Make no little plans; they have no magic to stir man's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty."

Comments of Professor Anderson

Mr. Anderson. First, what I tried to do in preparing the statement was to try to see what I myself would think about doing in terms of writing a national transportation policy. The statement is in three basic parts.

First is try to address the desirability of a new transportation policy. That has been quite well-covered in your own statements. I do not think I need to repeat those remarks.

I agree very much with the kind of statements you have made. Second is the statement as to how a transportation policy should be developed.

Then the third part of the statement is some statements on what a national transportation policy should contain.

In the second section on how the national transportation policy should be developed. I would comment that in 4 or 5 years that I have been working myself in the urban transportation area I have attended literally hundreds of meetings in the Twin Cities area on the transportation question. It has been very hotly debated in our area. I have made many, many presentations and listened to many, many different discussions with many groups. I have taught quite a number of courses in this area.

I have given talks in probably 30 cities of the United States. In the Twin Cities area in developing a transportation policy, we have been trying to do it, the various boards and commissions have been trying to develop a policy over the period of the last 3 or 4 years.

We have made a great deal of progress in that area. I have with me three very important documents that have come out of this. One is a document called the Metropolitan Mass Transit Need, which is a statement approved by the Minnesota Urban Affairs Committee, as a transportation policy; and this, incidentally, is a statement that addresses specifically the problem of the type of transportation that would be appropriate in the Twin Cities area, after looking at conventional modes and also personal rapid transit. The statement is essentially one to authorize development of a plan for rapid transit so it could be compared with other alternatives.

This was approved by the Minnesota senate by the vote of 55 to 21 in February of this year. So it has substance and a great deal of discussion about it.

Also, the Metropolitan Council-Twin Cities area has studied the problem of transportation over a number of years and have been developing what they call a metropolitan development guide.

I have with me the transportation chapter, which is a policy plan for the Twin Cities area. It was developed out of a series of open hearings, over many months of hearings and lots of discussion with the members of the Metropolitan Council. It finally comes to some very specific conclusions, one of which is that in our particular area conventional rail-type transit system is not appropriate and they recommend that immediately they try to develop a bus system and hold the options open for a new technology-type system.

Third, I have a report from an organization called the Citizens League in the Twin Cities area. It is an organization of some 3,600

people that does studies on metropolitan problems. They conducted several studies on the transit issue.

This is a report that just came out a few years ago, entitled "Transit Redistrict Priorities Toward the Small Vehicle and Shorter Trips." It addresses both the problem of transportation, transportation needs, and also the desirability of some changes in the urban development pattern.

My conclusion is, knowing how much effort has gone into developing a policy statement for urban transportation in the Twin Cities area alone, I can only imagine how much effort is necessary to develop a transportation policy for the whole United States and for all modes, but I do believe that the kind of processes that we have used in the Twin Cities is the only way one can get to policies that will be able to be accepted, and that is by essentially two processes:

First is the development of understanding the consequences of various alternatives, to look ahead to future-oriented studies. What is the future going to be like in the United States, in terms of energy needs, in terms of demographic trends?

How many more people, for example, are there going to be here by the year 1990 or 2000. Is there anything can be done about where those people ought to live? That is certainly going to affect how transportation would be developed.

Also, the problems of various kinds of resource limitation. That kind of deep understanding of the nature of the future I think is essential to the development of any policy statement.

In addition to that, and in addition of course to having the Department of Transportation examine the data and come up with a policy statement, as was done this morning, the views on transportation policy need to be obtained from many hundreds of leaders all over the country.

I know many cities have developed plans somewhat as the Twin Cities has. These kinds of hearings are an enormously useful start on developing this kind of dialogue that will develop a transportation policy.

Then I have some remarks on what a national transportation policy should contain. I will go over this quite briefly, but it is in seven different points.

The first, as I mentioned, understanding some statements about future conditions. What is the future going to be like in terms that I briefly mentioned?

The second, based on understanding what the future is like and also, I think, a recognition that the future is not going to be a carbon copy of the past. I think we see that now with the energy shortage that we have seen this year.

Based on an understanding of the future, what are the specific transportation needs as they are understood in terms of these future conditions?

Then, based on those needs, the next part of the transportation policy statement, I feel, should address itself to understanding the characteristics of various alternate transportation modes.

I know in the testimony we have heard here, we have heard quite a variety of different viewpoints on what the characteristics of different

modes are and which should be preferable to us. Our own analysis brought us to some conclusions I will mention.

The next part of the statement should be to discuss how these modes should be integrated with each other, develop policies on integration.

Then item five would be a discussion of the appropriate rate of annual expenditures for transportation development, say the next 1 or 2 decades.

Point six is a statement on the needs, specific needs for research and development in transportation. Myself, being a university person interested in research, my statement is more heavily emphasized in that direction.

Then, seven, a statement needs to be in this policy statement about the needs for international cooperation and how we can carry on international cooperation with other countries, both in operation of systems as well as in research and development.

In the area of future conditions, the major point I wanted to make here is related to the distribution of population. There has been a lot of discussion around about the need to plan better land use in the United States, to try to reduce urban sprawl as we have seen it.

We have had a great deal of discussion about that in our area. I have heard discussions from the point of view of the people who promote rapid rail systems, with the feeling that those systems are going to promote a desirable type of concentrated urban development, to other people who feel, in analyzing the geography of the area, try to say realistically how much change can there be in an urban area?

For example, in our area in the Twin Cities, it is estimated that the most optimistic change in development that could be induced by a rapid rail system, in this case with 40 stations, which is about as much of a system as people have felt could be deployed, would shift the population distribution by itself, by maybe 2 or 3 percent. That is optimistic.

Considering that, if this is true and if this is the general trend, then one should not think in terms of developing a particular type of, say a rail rapid transit system with the idea it is going to reduce urban sprawl. Because the difference is really below the level of variation of the data.

The question of desirability of compacting urban living arrangements needs to be very seriously addressed in the statement.

Again, there has been lots of talk about compacting urban living arrangements, but we also know, in looking at a number of compacted projects, that they are socially undesirable factors, with too high a population density.

I think we need to try to understand better what our optimum population densities should be in the future for future settlements, then help to make a desirable type of transportation system promote a desirable type of urban density.

I have an appendix in my statement which goes into more detail on this problem of transportation and land development.

Another factor in the statement about future conditions would be the effect of cable TV on transportation. Since often we have modal administrations, we find that often these matters are not considered.

In talking to people involved with cable TV, I find many of them

are predicting rather remarkable effects or influences of cable TV in the next 10 or 20 years. This could have an effect on transportation.

I have never seen any study that really delineates this in any detail.

In looking at future conditions, one needs to develop certain indicators of progress and these would have to come out of understanding these future conditions. These may be, for example, cost per passenger mile, which has been talked about, energy consumed per passenger mile, average trip length.

Here we have seen the average trip length in urban areas increasing. This tends to make the transportation problem worse. The trend seems to be desirable to try to develop policies to shorten the trip length; also the average number of trips per person per day.

In many of the projections of transportation needs, say by 1990, where commonly it is projected that we are going to have a doubling of trips by 1990, in part of that calculation it assumes that people will be taking more trips per person per day, that people will be traveling more.

If you project past trends, this would be true. But, due to various kinds of factors, such as the energy crisis and other environmental factors, it may be we will go to the other trend.

For example, cable TV might actually reduce the number of trips per person per day, which could affect these projections quite a bit.

The third area in the area of transportation needs I have addressed in my statement, a number of the needs relating to the urban transportation problem; again, the problem of concentrating urban areas.

For example, here it turns out in the Twin Cities area we have a belt interstate line that encloses 300 square miles of what is really called the urbanized part of the Twin Cities area. It is estimated in our area that by the year 2000 there will be—right now there is about 1.8 million population. By the year 2000 it is predicted this will be 3 million, a rather substantial increase.

The Metropolitan Council has found that if the area inside the belt line were all developed to the same population density as the cities of Minneapolis and St. Paul, themselves, that you could accommodate all this growth out to the year 2000. This would be a population density of 7,000 people per square mile, which is essentially what we have now in the inner city.

Also, there is some information around, not near enough, that population density in this range is near the optimum. It is probably a very flat, broad optimum. But we feel that we need to take into account the old Greek philosophy, that one should not jump from one extreme to the other.

If urban sprawl is bad, this does not mean you should jump to high-rise apartments. Something in between is probably better.

Another factor in the need is to examine with respect to an additional 50, 60, 80 million people it is projected the United States would have before we level off our population growth; where are these people going to live?

Possibly, as things work out now, more people go to the urban areas, and the urban areas are expanding randomly. There are many undesirable features of urban areas getting bigger and bigger.

It may be thought desirable that a practical policy would be to try

to encourage the growth of satellite cities that may be 50, 60, 100 miles from major urban areas. Certainly there are two things that one needs to do to make these places attractive, to encourage industry to go there for jobs; but also low-cost, high-speed transport between the satellite cities and urban areas may be desirable.

In this case I think development of high-speed ground transport systems needs to be encouraged along this direction.

In the urban area itself, we need to recognize that the urban areas in the United States are spread out enough so that if any public transportation system is going to appreciably impact the number of urban trips by automobile, we need to develop new systems that come very close to meeting the competition of the automobile; in fact, in many cases increasing it.

To do that, we feel that the new systems must be designed so they can provide 24-hour service on demand, just as the automobile does.

The fact that the problem is mainly serious at the rush hour has deluded some people into saying you should develop one system to handle the rush hour traffic, such as rail systems.

The difficulty is that if a person has to use his car at other times of the day, he is liable to use it during the rush hour. The new system needs to have good access to the urbanized areas as that term is understood. It should not be thought that you are going to be able to make very large fractions of the population shift into high-rise developments in order to make a particular kind of transportation system work.

A new system needs to have a speed equal to or exceeding the automobile. It has to have again safety that would be better than present public transportation. That seems like a contradiction in terms. It needs to be as comfortable as the automobile, it needs to be a system that provides freedom from anxiety, which is not the case with some of the present types of systems. A new system needs to be designed so that it can operate with low and very stable costs, which tends to mean that one needs to use automation.

It has to be designed so that it can be used very simply. These new systems also have to be designed in such a way that they take into account the needs of the community.

Here we think plainly in terms of the kinds of impacts the freeways have had on the urban area. In our area there are many organizations formed to try to block the construction of the new freeways because of the negative side effects of these roads. These new systems must make absolute minimum use of land. They should not any longer divide communities. They should be designed so they would have minimum disruption during the installation.

If they are aboveground, they have to have acceptable visual impact on the community, they need to reduce transportation noise, air pollution, energy requirements; also, they need to reduce dependence on oil for transportation.

These are some of the kinds of needs that we feel can be met by properly designing new types of transportation systems which I will mention briefly.

The next point in my statement is the understanding of the characteristics of various modes of transportation. Certainly we feel that in

order to provide better public transportation at the present time, one of the things that needs to be done is to make as efficient use of the automobile system as is possible by carpooling, by dial-a-bus systems, better use of taxi and subscription bus service in cities, and these should be parts of the national transportation policy, to make much better use of what we have, but recognizing also that there are limitations in terms of solving basic problems in going only that route.

In the case of conventional fixed route, fixed schedule bus transport, one needs to clearly recognize that while we need these types of services, the service characteristics are such that they are not able to attract many people from cars unless people would be literally forced from the cars.

For example, typically in cities, the bus transit system may take between 1 and 5 percent of the trips. We need to realize that this is very largely due to the fact that the service concept does not meet the needs of the people.

It takes far too long to move around this way than by other modes. In the case of rail rapid transit, there are some corridors, very heavily used corridors in some of our high density cities where rail transit does seem to be appropriate.

In our research at the University of Minnesota, we tried to analyze as best we can the data of what these sorts of systems are doing in various cities around the world, in order to see whether they would be suitable in our city or cities anything like the Twin Cities.

It has seemed to be a very logical—to many people—development of rail transit systems in urban areas and would be a desirable national transportation policy, and that they would solve many problems.

We have seen this somewhat as conventional wisdom. But if you look carefully at the actual performance of cities that actually have these systems and also planning these systems, you will find that the results are quite disappointing.

The basic reason is that the costs for conventional rail, which is part elevated, part subway, range something between $20 to $40 million for per two-way mile.

For that kind of money, it is simply not possible to build enough of these systems.

For example, to reproduce the London subway in a typical American city now might cost $10 to $15 billion, which is in excess of the entire property value in the area.

The second factor is that with these kinds of systems the stations have to be placed widely apart in order to make the average trip time low enough to make it competitive with the automobile. This wide spacing makes for poor access.

As a result of these features, we feel that rapid rail systems are suitable really for only a very few high density corridors which do exist only in limited places in the United States. But the prospects of large Federal grants to build these systems has encouraged city planners to plan about as extensive a system as they think could be funded.

The result is a system which can be used by a disappointingly small number of people, and the vast number of trips on rapid transit system in the cities is on bus systems, so the system is not much different than it is at the present time.

But the very large expenditure for the rapid rail portion of the system would seem to me to foreclose the possibility of finding funds to develop what I will outline later as more efficient solutions.

For example, in Los Angeles an estimated expenditure of between $5 and $7 billion for a rapid rail system could in the estimation of their consultants increase the total ridership in Los Angeles to something like 7 percent.

In the Twin Cities an investment of about $1.5 billion, which is about as much as they felt would be possible there, is estimated to raise total transit ridership on the bus and train system by 1990 to only about 6 percent of the trips compared to the present 3 percent. This is at a time when indicators are that the trip demands would double.

As I indicated before, I am not—I am a little bit doubtful as to whether it will double, but certainly the trip demand will increase substantially.

On this basis our metropolitan council rejected rail transit for the Twin Cities.

I feel, based on my analysis, that rail rapid transit systems are highly oversold in cities in the United States. I think they are a classic example of a wasteful technology.

A great deal of money will be made in planning and building these systems, but the rising expectations of people developed by overly enthusiastic transit authorities during the planning period will probably be dashed once the systems are actually completed.

For example, the much-acclaimed bay area rapid transit system is expected to attract only about 3 percent of the trips in the BART area.

In Montreal, at the present time the total metro transit system, in 1971, attracted 271 million trips per year, but before the metro was installed in the decade before the transit ridership total ranged between 279 and 327 million trips.

So actually, since the subway was installed, total ridership in transit has actually declined.

A member of the Washington Metropolitan Authority staff told me that their estimates are that the Washington subway system will not increase the percentage of transit ridership in the Washington area at all. This is based on this modal split models in the past and that the cost on the Metro would be about $3 a trip.

But purchase of an expensive highly capital intensive system like this in a city is an attractive way to bring money into the community if 80 percent of the costs are paid for by the Federal Government.

As we have seen, by raising the hopes that these funds could be obtained, there have been intense controversies over transit in many, many cities around the United States.

I have personally become aware of controversies in Seattle, Los Angeles, Minneapolis, St. Paul, St. Louis, Chicago, Houston, Detroit, and Atlanta. I think there are other cities.

We feel reason can prevail in transit planning only after the characteristics of rapid rail are clearly and objectively understood. In terms of new modes of transportation, there is a great deal of analysis by many groups in many parts of the world now.

This analysis is not only in the United States, but in Canada, France, Germany, Switzerland, Sweden, England, Japan, and Australia.

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I have reports on studies in all these places. It shows that only by building new types of transit systems that I will describe would it be able to achieve a significant change in the types of problems that people are really concerned about in transportation. Certainly one immediate one now is the dependence of transportation on oil.

If you want to make an appreciable reduction in the dependence of urban transportation on oil, 5 percent of the trips or 7 or 10 percent is enough.

We need a system that may get 50 percent of the trips. If we want to reduce the needs for freeways in urban areas and resist the pressure of downtowns who need the freeways to get people downtown, we again need a system that gets 40 or 50 percent of the trips. To do this, we need a system with the kind of characteristics I described before that will meet the competition of the automobile.

We feel that vigorous research and development program needs to be a part of national transportation policy to bring these systems into being.

Now the terms "personal rapid transit" and "dual mode transit" have been very prominent in discussion of these new systems. It is very important in these policy statements that a clear definition of the terms be made.

For example, if it is at the present time there are many development programs underway on automated systems that have some of the characteristics of personal rapid transit in dual mode, but yet are kind of a hybrid between rapid rail and true personal rapid transit. Calling these systems personal rapid transit caused a great deal of confusion.

The Morgantown project is one of these. That is really sort of a hybrid system that we do not feel can have a widespread applicability. This system in Morgantown does use off-line stations and automatic control and demand-activated service, but it is really a type of an automated tram.

These systems use larger guideways and a real true personal rapid transit, they support larger vehicles with room for standees, are used in shared modes and scheduled modes during rush hours, all of which causes the cost per trip to increase and the acceptance of the systems to decrease.

Mr. McFall. Could you summarize the rest of your statement?

Mr. Anderson. Yes; I was seeing your anxiety. I will.

Mr. Edwards. It is the anxiety of those folks behind you.

Mr. McFall. Yes; we have several people who want to testify this afternoon and we are short on time.

Mr. Anderson. All right.

I will make one more comment on the research and development needs in transportation that I think should be a part of the policy statement.

In the first place, we feel very strongly that vigorous research is needed, research and development.

Also, we think that policy statements should address the institutional arrangements for this research and development.

For example, the way the Department of Transportation is structured now, research and development is a part of the function of agencies whose major functions relate to operations as they occur at the

present time. We feel that this is doing research sort of as a sideline and that the true needs of the United States will not be met in this way, and that a desirable way of handling research and development may be to have a separate agency within the Department of Transportation at the level of the administration devoted to research and development. It could be called a transportation research administration.

That administration should have the responsibility for research across the board, in all types of transportation systems.

I make the suggestion in my statement that it may be logical and desirable to develop this agency not by starting from scratch, but by actually changing the charter of NASA, to have NASA perform this function as a function of the Department of Transportation.

In some cases people have felt that if NASA took on this job it would mean that the costs would escalate very rapidly. But I think this is a misconception of the way engineers work.

Actually, engineers work to specifications. In the case of putting a man on the moon, the specification was to put one man up there in a decade, and this is a very highly specialized operation; competent engineers carried this out. But the unit cost was very high.

We feel if the specification is for a low-cost, highly reliable urban transportation system which can be mass-produced, engineers within NASA or other organizations could produce this.

We feel then that this kind of an organization needs to be developed.

Also, I might conclude by saying that our experience with two international conferences on new transport technology has indicated that we in the United States can profit a great deal by cooperation with foreign countries who are developing systems like personal rapid transit and fuel mode and actually, in many cases, are ahead of the United States at the present time.

ADDITIONAL COMMENTS ON STATEMENT OF THE SECRETARY

Mr. McFall. Thank you, Mr. Anderson. You may submit any additional comments you might have on Secretary Brinegar's statement. With all this infomation that has been developed in the Twin Cities, it will be an important part of the record. We appreciate it very much.

[Comments on Secretary's statement follow:]

University of Minnesota,
Minneapolis, Minn., March 15, 1974.

Hon. John J. McFall,
Chairman, House Appropriations Subcommittee on Transportation, U.S. House of Representatives, Washington, D.C.

Dear Mr. McFall: I appreciate the invitation you extended to those who testified before you on March 5 and 6 to comment on the statement made by the Secretary of Transportation. In general, the approach taken in the Secretary's statement appears to me to be very good.

My main comments on the introductory material are the following: In the section "Urban Transportation" I would add that a major factor in the demand for improving urban transportation has been the encroachment of the freeway on the urban environment. In many cities in the United States this is the factor that causes irate citizens by the hundreds to come to meetings. It should be clearly recognized in the national policy statement that the urban freeway has been the cause of many serious social and environmental problems. Detailed recognization should be explicitly given as to the nature of these problems for the people directly affected by the freeway. Perhaps spelling out the problems

in detail in a widely distributed policy statement will provide a needed reminder to examine impacts more carefully before authorizing major public works.

In the same section, three major obstacles to improving urban transportation are given. I agree that all of these are obstacles, but there is one more than I believe is more important: The lack of options; past hesitancy in vigorous pursuit of research and development in new and much more efficient means of transportation. The fact that this situation now appears to be changing is a most encouraging prospect. For example, personal rapid transit seems to be finally getting the attention within the Department of Transportation which it deserves. The fact that more can be done in the United States is clearly illustrated by the work underway in Germany, Japan and France mentioned in my formal statement. Enclosed are photographs of systems under development in those countries of a type which probably will not be in full-scale testing under the Department of Transportation programs for three or four years. DOT should take advantage of the experience foreign developers have attained so that U.S. high-capacity personal rapid transit systems will be of an improved design.

In Guideline No. 5 in the section on "Urban Transportation" insufficient recognition is given to the important difference in physical development produced by rail and bus systems, which accounts for a great deal of the pressure to build rail transit. The importance of this point, I believe, cannot be overstressed.

In the section "Energy Usage in Transportation," it is pointed out that shifting away from automobiles into rail and bus would reduce energy needs. The fact that rail transit gives a much larger number of passenger miles per gallon of fuel used than the automobile tends to make people feel that rail transit would be an answer to the urban transportation problem. A single example will suffice to show the fallacy of this point. Data from the Bay Area Rapid Transit Authority shows that the BART system will attract only 3 percent of the trips in the BART area. Thus, even if the rail system did not use any energy at all, the reduction in overall energy needs is insignificant.

The general statements made under the section entitled "Policy Elements" appear to me to be appropriate and sensible. I only have a few comments on them. First, in item 1 it should be added that Federal policy should be to see that the Nation has an overall transportation system that reasonably meets its essential needs into the indefinite future. Major changes in transportation systems take 10 to 20 years to implement, therefore, it is very important that the Office of the Secretary of Transportation devote a significant effort to examining the future, and that it support and augment future studies which have been underway related to energy and material resource availability, population growth and population distribution, value changes, and other factors that might affect the long-term operation of our transportation systems.

Under item 6 it is very important for the Federal Government to consider encouraging "non-Federal mechanisms that embrace the full urban area and have authority to make and implement all relevant urban plans" provided there is a separate and independent body with review and approval authority and funds to assess the impact of these plans on the urban area. Human nature is such that organizations which generate the political support to make comprehensive urban plans also find it very difficult to then turn around and assess objectively the implications of those plans on urban society, particularly if those assessments might possibly result in the conclusion that the plans should not be implemented. Therefore, I feel it is imperative that a separate body be available to make these kinds of assessments.

As an example, in the Twin Cities the Metropolitan Transit Commission developed plans for a rail rapid transit system. Within the bureaucratic and institutional framework in which they function, this type of system may have been thought to be a logical solution. When, however, this solution was assessed independently by the Metropolitan Council, which did not have the same vested interest in the plans, the conclusion was that the plan was not appropriate.

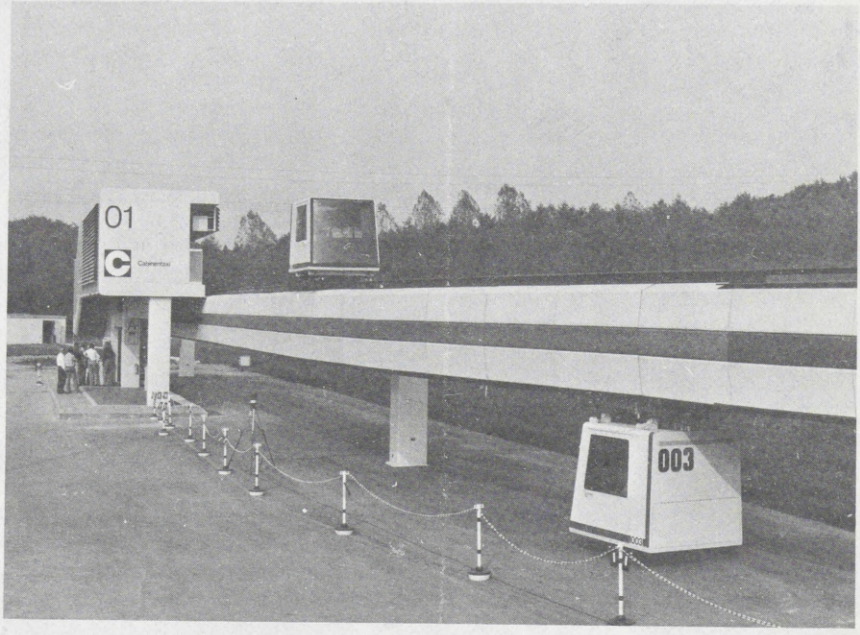
Item 9. I have no criticism of the near-term programs suggested to meet the criteria given. A similar statement should be attempted in regard to longer term programs, although I realize this becomes more of a problem politically. DOT policy should address very strongly the need to accompany physical research and development work with studies of the socioeconomic-environmental impacts of various alternate systems proposed for both urban and intercity transportation. If these studies are delayed until after the systems are built, much effort will be wasted and we will be solving one kind of problem by creating another.

In this letter I have tried not to stress the points that I raised in my own formal statement. Thank you again for the opportunity to comment.

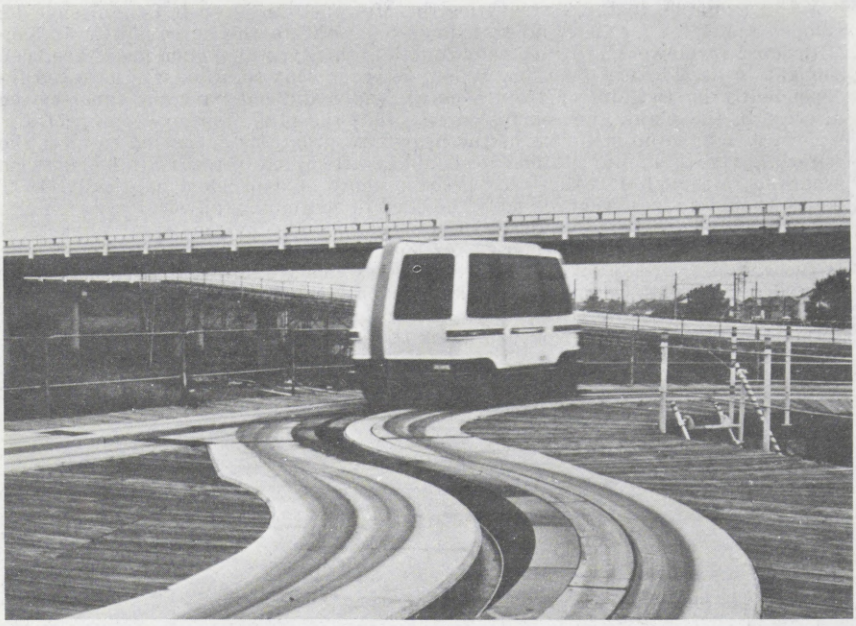
Sincerely yours,

J. EDWARD ANDERSON,
Professor of Mechanical Engineering.

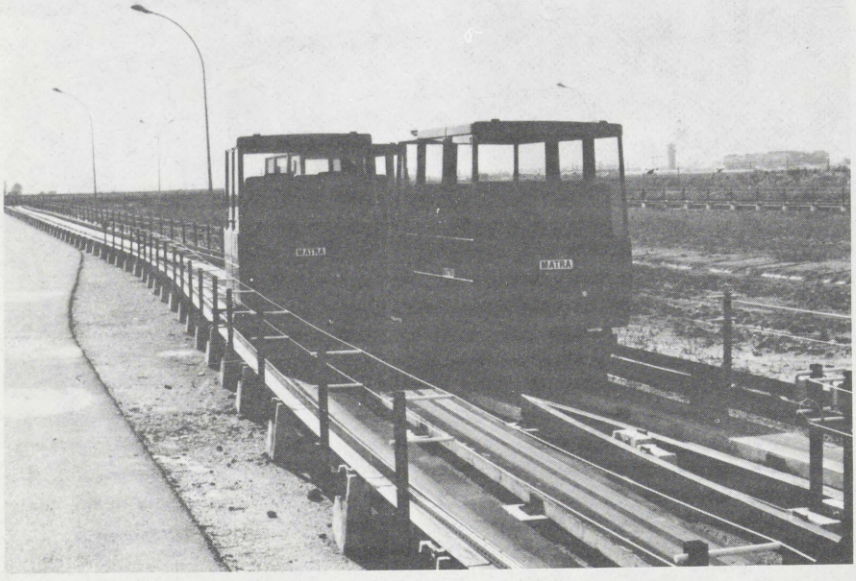
Enclosures.



A PRT system called Cabinenntaxi under development by the West German Ministry of Science and Education. In May 1973 system testing of three three-passenger vehicles began in a suburb of Hagen. The system is designed for operation at one-half-second headway at 22 miles per hour.



A PRT system called CVS under development by the Japan Society for the Promotion of Machine Industry. In March 1974, 60 four-passenger vehicles are scheduled to be in operation on a 4.7-kilometer test track in a suburb of Tokyo. The system is designed for operation at one-half-second headway at 40 miles per hour.



A PRT system called Aramis under development by the French Institute for Research in Transportation. In April 1973 system testing by three four-passenger vehicles began at Orly International Airport. The vehicles follow one another at 40 miles per hour at a spacing of 30 centimeters.

WEDNESDAY, MARCH 6, 1974.

WITNESS

MATT TRIGGS, ASSISTANT DIRECTOR, CONGRESSIONAL RELATIONS, AMERICAN FARM BUREAU

Mr. MCFALL. Matthew Triggs is our next witness.

Mr. TRIGGS. Thank you, Mr. Chairman.

I have a short statement. I can read it in less than 10 minutes. With your approval, I would like to proceed in that way.

Mr. MCFALL. Proceed.

STATEMENT OF AMERICAN FARM BUREAU

Mr. TRIGGS. Thank you.

We appreciate this opportunity to present our views relative to national transportation policy.

The interest of farmers in transportation is obvious. The price a farmer receives is generally the value of his commodity at a market minus the costs of transportation to market. The prices a farmer pays for equipment and supplies include the transportation costs to move such items to the area in which he operates. Farmers pay transportation costs on consumer goods as do other consumers.

I think we have an immediate and urgent problem with respect to rail.

Rail transportation provides low rates for moving large quantities of products for considerable distances—with minimal use of energy and minimal impact on the environment. Yet, railroads are the "sick man" of the Nation's economy. Returns on capital invested in railroads have averaged less than 3 percent in recent years. Bankruptcies, deficit operations, deterioration in roadbed and equipment, car shortages, and inability to attract new capital have been major problems in railroad operations in recent years.

Despite their problems, railroads performed creditably, in terms of total tonnage, in 1972 and 1973. In 1972 the total number of ton miles moved by rail hit an all-time record of 780 billion. This record was surpassed in 1973 with a total of 847 billion ton miles. Yet, for many shippers, rail service was inadequate and undependable, often simply not available.

The problem of obtaining adequate and efficient rail transportation is too big a problem to be solved by patchwork or bandaids. We need to anticipate and to avoid such difficult situations as that created by the bankruptcy of several eastern railroads. Some major changes in legislation are needed.

We believe railroads can serve the Nation far more adequately than they have—but to do so they must have sufficient earnings to (1) devote larger volume of retained earnings to improvements in facilities and (2) be competitive in attracting investment funds from private investors. No industry can serve the public efficiently or adequately if it is unable to make profits or to acquire essential capital.

We support the proposal that Federal guarantees be made available for some $2 billion of loans to railroads for the purchase of rolling stock and other facilities. However, the enactment of such guarantees would have only a nominal impact in terms of the total capital the rail-

roads must invest if they are adequately to serve the Nation's present and future needs for rail transportation.

The Federal Government could conceivably provide large direct loans to railroads. We do not believe this would be advisable. In our opinion this would create new problems and would not solve old problems. We believe the public interest will be served best if the railroads' capital needs are met from increased earnings and private investment. We, therefore, strongly endorse legislation to provide a relative degree of freedom and flexibility for railroads to establish rates for competitive traffic free of ICC control. In the case of noncompetitive traffic, such as certain grain movements and fruit and vegetable shipments from the west coast to New York or Boston, we favor continuation of requirements for ICC approval. If these changes result in higher freight rates for farmers and other shippers—and presumably they will, at least in the short run—we submit that this is warranted by the real interest of shippers, producers, and the public in better and more efficient rail transportation.

If railroads are to be given a greater degree of flexibility and responsibility to determine rates, an essential supplementary measure is needed for the protection of public interests.

The Interstate Commerce Commission has published two studies concerning the use of holding companies by railroads to divert railroad assets and earnings to holding companies and nonrail subsidiaries of such holding companies. The major conclusion of these ICC studies is that:

"The serious manipulations set forth in this memorandum, whereby assets and earnings of railroads are being dissipated to noncarrier companies in the group, are definite indications of what may be expected in the future—all of which are detrimental to the carriers and hence to the national transportation needs of the public and national defense."

Farm bureau favors the enactment of legislation applicable to railroads comparable to the Public Utility Holding Company Act of 1935. This Act, now applicable to electric power and gas utilities requires, in general, the simplification of corporate structures, the sale of nonrelated enterprises, and the elimination of holding companies.

No review of railroad or transportation problems can omit reference to (1) the heavy load that railroads carry due to obsolete work rules that prohibit efficient use of railroad employees and (2) the need to enact legislation to reduce the catastrophic impact of transportation strikes on the public.

In conclusion, we would like to comment rather briefly on certain other important transportation problems.

In the interest of fuel conservation, to accomplish more efficient use of trucks and manpower and to promote more uniformity as to truck weights and size limits, we favor reasonable increases in Federal maximum weight and length limits for vehicles using interstate highways.

In the interest of fuel conservation, efficient use of trucks and manpower, and a reduction of highway hazards we recommend that:

Truck common carriers be authorized to serve intermediate points and haul commodities they are not now authorized to haul.

That required circuitous routing of common carriers be eliminated.

That statutory restrictions on leasing of private trucks by common carriers be eliminated.

We favor maintenance of the major exemptions from ICC regulation now applicable to:

Private transportation by truck.
Farm product transportation by truck.
Transportation by cooperatives by truck.
Transportation of bulk commodities by barge.

In general we support the "regulatory reform" proposals of the Administration. We shall suggest modifications when hearings are held my the Commerce Committees.

We appreciate this opportunity to review Farm Bureau's position on major transportation problems.

Mr. McFall. Thank you very much. We appreciate your coming here and certainly appreciate having the American Farm Bureau's testimony in our record.

Thank you.

WEDNESDAY, MARCH 6, 1974.

WITNESSES

DR. J. HAYDEN BOYD, FORMERLY ASSOCIATE PROFESSOR OF ECONOMICS, OHIO STATE UNIVERSITY
NORMAN J. ASHER, ASSISTANT DIRECTOR OF THE PROGRAM ANALYSIS DIVISION, INSTITUTE FOR DEFENSE ANALYSIS

Mr. McFall. Our next witness is Dr. Hayden Boyd, former Associate Professor of Economics, Ohio State University. Dr. Boyd, we would be pleased to hear your statement at this time.

STATEMENT OF DR. BOYD

Dr. Boyd. Mr. Chairman, members of the subcommittee. I am Hayden Boyd, formerly associate professor of economics at Ohio State University. While on leave from the university, I coauthored with two colleagues, Norman Asher and Elliott Wetzler, a research study conducted at the Institute for Defense Analyses, under a contract with the Office of the Secretary of Transportation, entitled "Evaluation of Rail Rapid Transit and Express Bus Service in the Urban Commuter Market." Accompanying me today is one of the coauthors of the IDA project—Norman Asher, Assistant Director of the Program Analysis Division, Institute for Defense Analyses. Mr. Asher will be available to answer questions following my testimony.

While I am presently the director of the economics division of the Motor Vehicle Manufacturers Association, I wish to clearly state that I do not appear here today as a spokesman for the MVMA, nor does Mr. Asher accompany me as a spokesman for IDA. The opinions and conclusions we shall express are our own, and should not be imputed to IDA, DOT, MVMA or its member companies.

The study was initiated in the fall of 1971 and finally completed in October 1973, and dealt with comparative costs of alternative urban transportation modes. A complete summary of the IDA research project is attached to this statement which I have provided the subcommittee for inclusion in the record of these hearings. I also have with

me several copies of the complete study for members of the subcommittee who may wish a copy.

The study primarily analyzes the movement of commuters from home to work in the central business district and back, although some of the findings also have implications for other urban transportation markets.

The study analyzes two main alternatives to serve the commuter market: modern, highly automated rail rapid transit, and express bus service. Examples of the kind of rail systems we analyze are Philadelphia's Lindenwold Line, San Francisco's BART, Washington's Metro, and the systems planned for Atlanta and Baltimore. All rail line haul systems require rubber-tired feeders to carry passengers from home to the transit station, and we analyze several types of transit feeder vehicles. The express bus, in contrast, circulates in a residential area collecting passengers, runs in express service to downtown, and then distributes passengers on surface streets. Examples of exclusive busways to handle the express line haul part of the trip include Washington's Shirley Highway bus lane, New York's Lincoln Tunnel reverse flow lane, and busways in Los Angeles.

Before summarizing the results, I should like to say a few words about our method of analysis. We compare various versions of these two urban transportation alternatives on the basis of "full cost"—in other words, their capital and operating costs and total door-to-door user-time costs, including walking time to and from the transit line, waiting time, in vehicle time, and transfer time at the rail station. Quantitative data on fuel consumption and pollutant emissions were also analyzed.

All passengers were assumed to be seated in the analyses which I will be reporting today. The number of seats per unit of floor area has been equalized for both the bus and rail car, so that the standee capacity of both is the same percentage of the seated capacity and the most important comfort variables are equalized. Statistical studies have shown that money fare and user-time costs are the most important characteristics of urban transit modes which determine travelers' choices among alternative modes.

All cost in the analysis have been projected to 1980 in constant 1972 dollars. Rail transit operating and equipment costs have been increasing over time more rapidly than bus costs.

Operating and capital costs of rail transit are also much higher than those of buses. Discounting at 10 percent per annum, the annual capital recovery cost for the roadbed, tunnels and stations of a typical modern rail system is estimated to be $2,500,000 per route-mile per year compared with about $400,000 per route-mile per year for an exclusive busway. The annual capital cost for a rail transit car is $560 per seat per year compared with $135 per seat per year for expressway buses. Rail operating costs are approximately 2½ cents per seat-mile in line-haul service. An expressway bus costs about 1 cent per seat-mile in line-haul services. I might also add that our cost data include estimates for the use of public streets and roads, usually not included in conventional transit accounts.

User-time costs depend both on travel time per trip and the dollar-per-hour value that commuters place on time spent traveling. Recent

literature, based on statistical analysis of travel behavior and modal choice, indicates that travelers value time spent in urban transit vehicles at about 40 percent of their hourly average earnings. Out-of-vehicle time, such as walking and waiting, is valued at about hourly earnings, or 2½ times in-vehicle time. In this study we have compared alternatives for commuter services assuming two values of time, corresponding to hourly earnings of $3 and $7.50, to represent the range of values that commuters place on their time. Surprisingly, the time-value assumption has little effect on the ranking of the alternatives established by our analysis.

Four types of vehicles are analyzed for residential collection: 5-passenger automobile jitney. 8-passenger bus-wagon jitney—for example, Ford Econoline, Dodge Maxiwagon, Chevy Van—19-passenger minibus, and 50-passenger conventional bus. The jitney costs assume free competition and no restrictions limiting the number of licenses or franchises. The bus and minibus costs assume the present organization of the industry, with a single franchised supplier, either a public transit authority or a private firm, operating with unionized labor. Capital and operating costs per vehicle-mile for the larger vehicles are higher, although capital and operating costs per seat-mile are lower.

Full costs for each of the alternatives and subalternatives were computed for patronage levels ranging from very low to very high.

Figure 1 (attached) presents capital and operating costs plus user-time cost for residential collection for one set of assumptions. Similar plots were made for other time values and other feeder route perpendicular distances.

For this short-haul service, service frequency is quite important to commuters, because more frequent service results in shorter waiting times. Primarily for this season, figure 1 and similar plots indicate that the eight-passenger bus-wagon is nearly always the low full cost alternative for short-haul residential collection, even though conventional buses may have lower capital and operating costs at high densities. Conventional buses have lower full costs only for combinations of low time value, long routes, and higher passenger density. By inference, bus-wagons operating as jitneys are likely to have lower full costs than conventional bus transit for inner city circulation services—those bus operations within the city other than peak hour CBD commutation.

Figure 1 offers some insight into the decline of conventional bus transit, as we know it. Increasing affluence and the resulting increases in automobile ownership have tended to lower population densities in the central cities as well as the surrounding suburbs. Consequently, public transit demand has declined, resulting in less frequent service and mounting deficits. For lower density, short haul markets, our results suggest that an attractive level of fare plus user time cost could be offered without public subsidy, if the transit market were opened to competition from small bus wagon or automobile jitney vehicles. Very heavy subsidies would be required for conventional local service bus systems to support similar levels of fare plus user time cost.

Figure 2 (attached) displays an example of full costs—capital and

operating costs plus user time cost—for the complete home to work trip, for several rail and bus alternatives.

Rail rapid transit tunnel, roadbed and station costs vary considerably. The upper curve in Figure 2 is representative of Chicago's Milwaukee-Dearborn-Congress subway, Toronto, Montreal, San Francisco, Washington, Atlanta, and Baltimore each of which cost about $23 million per route mile in 1972 dollars, with a 1 percent per year upward trend net of general inflation.

The "inexpensive rail" curve is based on the Lindenwold line between Philadelphia and the New Jersey suburbs. The cheapest of the automated, high quality North American Transit lines, it uses an already existing downtown subway and bridge over the Delaware River, and a former suburban railroad right-of-way. Costs for tunnels, roadbed, and stations were about $7 million per route mile, about one-third of the costs for the upper curve.

The three bus curves in Figure 2 assume respectively that buses operate in mixed traffic on conventional arterials or expressways, or on an exclusive busway. I might point out that these three curves are fairly close to one another, suggesting that the relative full cost of different types of line haul facilities for express bus systems may depend on factors peculiar to a given locality.

With the exception of New York, peak-hour corridor volumes are likely to be in the range of 6,000 to 40,000 travelers per hour. These figures are for all modes; transit passengers will, of course, be only a portion of total travelers. Thus, while either a busway or rail system has a large potential capacity—around 30,000 seated passengers per peak hour—only New York City lines are likely to achieve capacity levels of patronage.

The recent energy crisis has stimulated interest in fuel consumption by transportation of all kinds, and emissions of pollutants continue to be a public issue. Although fuel costs are included in our operating cost estimates, a dollar value of emissions is not included. In the study we estimated fuel consumption per passenger trip and emissions per passenger trip of three pollutants—hydrocarbons, carbon monoxide, and oxides of nitrogen—for express bus on exclusive busway versus rail rapid transit with bus-wagon feeder.

These data, while not by themselves conclusive, tend to support the proposition that an express bus system could consume somewhat less fuel and could generate somewhat less emission than a rail system in a given commuter market.

In summary, for the CBD commuter market, we estimate that bus systems have far lower capital costs, and lower operating costs as well, compared with rail transit, but equivalent user time costs.

Thank you, Mr. Chairman. Mr. Asher and I are at your disposal for any questions the committee may care to ask.

[Figures 1 and 2 follow:]

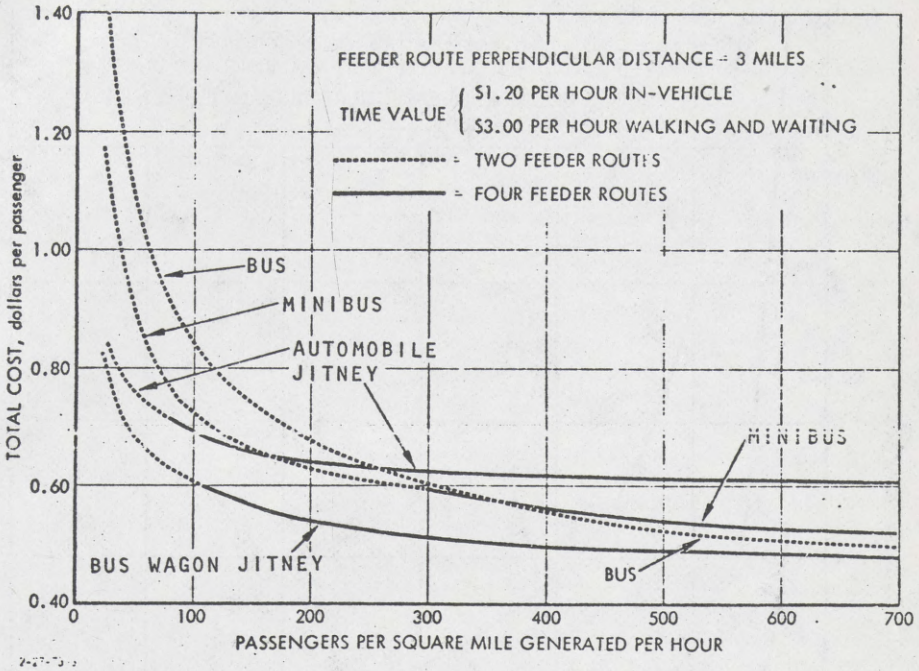


Figure 1. RESIDENTIAL COLLECTION COST PER PASSENGER VERSUS PASSENGER DENSITY

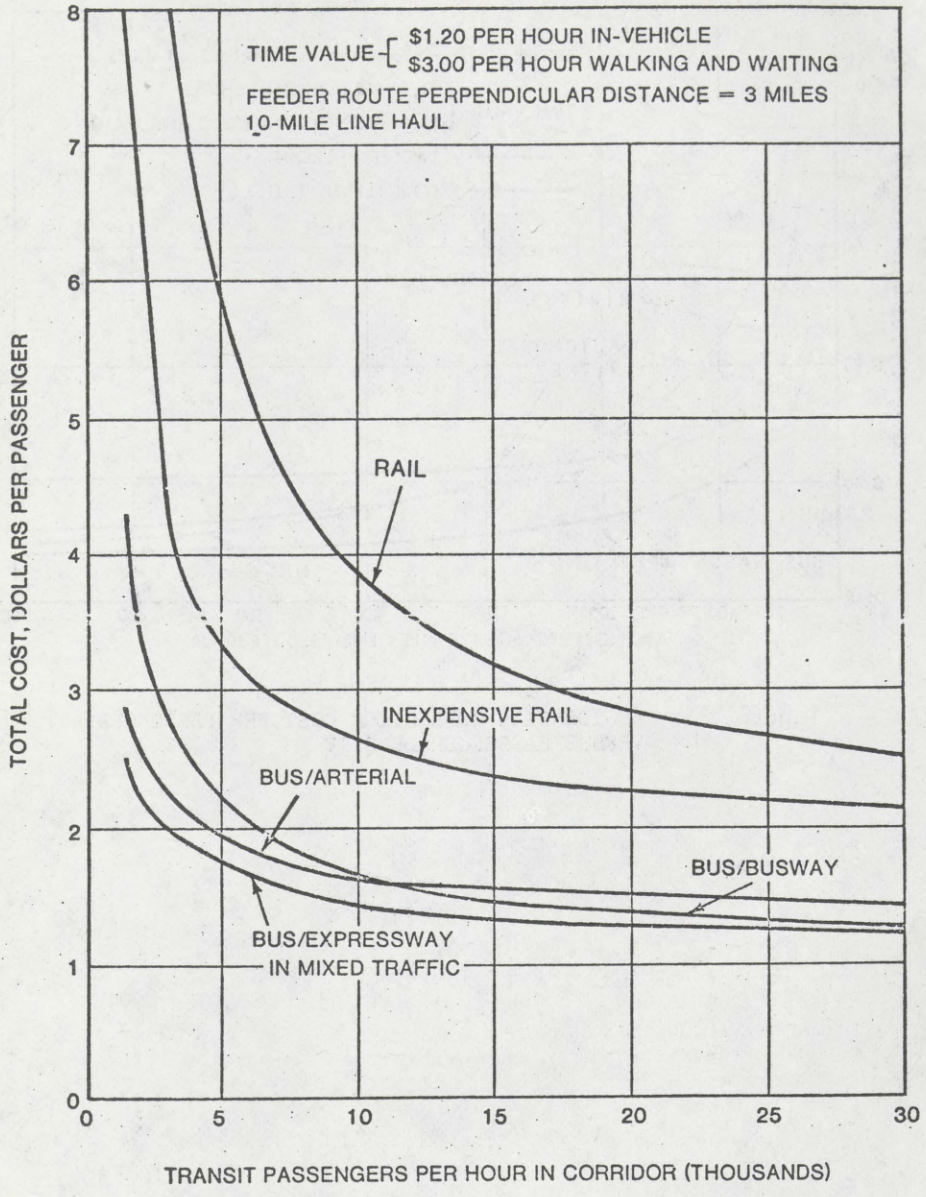


Figure 2 RESIDENTIAL COLLECTION PLUS LINE-HAUL COST PER PASSENGER

Mr. McFall. We appreciate your testimony. Your entire statement will help us understand the relative cost and values of mass transit, and how we evaluate what the Department of Transportation is doing. We try to evaluate the budget of the Department of Transportation which we look at each year and we are endeavoring to bring about some progress in the field of policy.

Some of the things you have said are very important to the appropriations cycle, as well as to the field of policy. We certainly appreciate both of you coming.

WEDNESDAY, MARCH 6, 1974.

WITNESS

ROBERT E. MONROE, VICE PRESIDENT, POLICY AND TECHNICAL PLANNING, AIRCRAFT OWNERS AND PILOTS ASSOCIATION

Mr. McFall. Mr. Monroe, we would be glad to hear your statement at this time.

Mr. Monroe. Thank you, Mr. Chairman.

I think maybe it will be better if I read rather than take three times as much time to summarize.

Mr. McFall. You have noticed that phenomenon.

Mr. Monroe. AOPA is a national association of over 181,000 individuals who own or rent aircraft and use them for business and personal purposes. Our membership accounts for the ownership of about 70 percent of the Nation's civil aircraft and about 65 percent of the hours flown by civil aviation. We represent a substantial transportation resource and have a great interest in national transportation policy. We appreciate this opportunity to present our views.

As long as I have been around Washington, I think this is the first time I ever had the opportunity to participate in this kind of a hearing, before this kind of a committee, before the Appropriations Subcommittee. I think it is worthwhile.

Mr. McFall. We hope it is not the last time.

STATEMENT OF AOPA

Mr. Monroe. Formulation of a transportation policy connotes identification of a transportation goal and selection of a course of action to reach it. Doing this on a national basis connotes a requirement for substantial public agreement and support for both the goal and the course to it. We think that success in formulating a national transportation policy is contingent on the observance of several fundamental ideas commonly held about the nature and purposes of the United States of America and of certain lessons of history.

Our Nation traces its foundation to a concern by individuals for life, liberty and the pursuit of happiness. Our government is founded on principles of federalism which suggest that while a national policy may be appropriate, it should not ignore or necesarily override State and local, as well as individual, interests. The preamble of our Constitution also implies that Federal Government programs should meet one or more of several tests. A policy that fails to conform with these concerns and principles seems unlikely to generate broad public support.

Government should confine its efforts to public goods. A public good may be defined as having three characteristics: (1) The collective pub-

lic desires a set of goods and/or services which the marketplace does not provide; (2) The public is willing to pay for obtaining these goods and services; and (3) The public is willing to resort to the force of law to assure that these goods and services are provided.

It is our observation that when anyone of these characteristics is missing—and most often it is the willingness of the public to pay—the policy and related programs become contentious and lack broad public support. In our view, the proper remedy in this case is either to reject or abandon the policy and program—not to shift the burden of its financial support to a selected minority of citizens who happen to be users or beneficiaries of some particular kind.

The Federal Government has established a broad spectrum of programs responsive to specialized interests. In principle, we have little objection to this. It has resulted in a situation where almost everyone is subsidizing everyone else. This has served the politically desirable objective of creating a feeling of community and common purpose in promoting the general welfare. What we do object to strongly is the latter day effort to destroy this sense of common purpose by forcefully imposing the burden of certain programs, mandated by Congress in the public interest, upon selected individuals rather than the general public. A national transportation policy which pursues this latter course is doomed to continual resistance.

While we have little objection in principle to the establishment by the Federal Government of specialized programs which advance the general welfare, evidence abounds that the government has often attempted to do more along this line than either the general taxpayer was willing to support financially or than could be expected realistically to be achieved. It seems obvious that the appetite for public programs exceeds the public pocketbook and that greater discrimination will have to be exercised in their selection and enactment.

We observe that the masses tell us with every device at their disposal that they do not really want mass transportation. They want personal transportation instead. (Even many of the most disadvantaged families have autos). Every mechanism of mass transportation we have seen has either ultimately failed, been superseded, or survives with great difficulty despite massive infusions of public subsidy for capital investment, operating costs, market regulation or all three. We draw several conclusions from this history.

Common carrier transportation has a great role in the movement of freight which the customer is willing to support.

Common carrier transportation has a limited role to play in the movement of passengers in a small number of high density markets but will require massive perpetual subsidy—and will be abandoned by its customers at the first feasible opportunity.

Private transportation responds to individual desires for economy, flexibility, privacy, reliability, safety, security and utility. It is largely self-supportive and requires comparatively little in the way of Federal Government intervention. It provides transportation to and from thousands of places which cannot justify or financially support mass public transportation programs. It is not very subject to the inconveniences, strikes, crime, sabotage, and hijacking that frequently plague common carrier transportation.

It would seem that a national transportation policy should acknowledge the individual desires of the people and seek to serve those desires rather than to try to force those people into a mass transportation system which they give every indication of resisting insofar as it is practical to do so.

Safety is a theme explicit or inherent in many pieces of transportation legislation. What role should it play in policy? It seems axiomatic that safety in the absence of a mission is unproductive—and that a mission without safety is pointless. Risk of death is a condition of life and we all want to minimize that risk within the bounds of reasonableness that permit the achievement of a desirable mission. We think a riskless society and perfect safety is an unreasonable objective.

We observe that an increasing population provides greater numbers of people who travel and, correspondingly, a greater number of transportation-related fatalities. Since most people who desire to travel give little evidence of hesitation in taking to the highways, waterways, and airways, it seems obvious that the risk of injury or fatality is not a major factor inhibiting travel by these modes. Property damage is insurable and replaceable. These facts suggest that what is practical as a matter of national policy is a reasonable pressure guided by cost/benefit studies focused on improvement of safety rates rather than reduction of total number of fatalities.

Our economy has achieved a high level of productivity through specialization. Transportation is the indispensable tool that makes it work as well as it does—and transportation too has become highly specialized. This suggests that simplistic massive transportation systems are unlikely to respond adequately to the needs of a complex society. It may be that the problem is to complex for a satisfactory solution to be planned and developed by a central authority. There is the very real possibility that the problem can be solved better by the application and encouragement of private initiative responding to thousands of smaller and more manageable parts of the problem.

We think the profit motive of private enterprise is a more powerful incentive for the efficient allocation and management of resources than is the desire of public servants to serve the public. This suggests that provision of facilities and services for public use in transportation by private enterprise should be encouraged in those areas where it does not now exist, and improved in those where it does, by providing an economic and regulatory environment in which they can survive and thrive.

Who should form national policy respecting transportation? We think it is the task of Congress. Congress is, after all, the body which writes our law. Advice from the public, the transportation community and the Executive often will be helpful in its formulation—but the responsibility lies with Congress. In a sense, we already have a national transportation policy but it is more implicit in the legislation already enacted than explicit. Certainly, it has not been codified or coordinated in any meaningful way. In a changing complex society, we are not sure that it even can be or would be worth the effort if it could. That is a decision you will have to wrestle with—and we do not envy you the task.

In consequence of these observations, we have these recommendations for a national transportation policy;

Tailor the policy and resulting programs so that individuals are assisted in doing what they want to do rather than forced into doing what others want them to do.

Minimize regulation so that competition encourages service and moderates price.

Limit regulation for safety to cost/benefit directed programs where fatality rates are higher than is generally accepted.

Limit programs to those which the general taxpayer can afford and will support.

Repeal title V of the Independent Offices Appropriations Act of 1952.

Acknowledge that whatever transportation programs you enact are for the public benefit and warrant public support of their costs.

In essence, we think that the Federal policy should be to provide only those services which are of general benefit to the public. All other services and costs should be the responsibility of private enterprise.

Since we are advocates of that spectrum of aviation ineptly designated as "general aviation," a few words respecting policy matters of concern to it are appropriate.

AOPA's objective is an economic and regulatory environment in which almost everyone who wishes to may avail themselves of the benefits flowing from personal aircraft usage.

We know from experience that aviation provides many benefits for our people and the nation at large. We have seen it bring pleasure into people's lives, provide jobs where they did not exist, assist in the decentralization of business enterprise, and help people to sell themselves and their products or services. It has made activities and enterprises practical that were previously impossible or impractical.

Private enterprise and individual initiative will pay for and provide as many of these benefits as it can afford as soon as it can. If the public wants to obtain these benefits in greater number or at an earlier time, it seems only fair that the public should pay for that acceleration. This is the nub of our dispute with the concept of user charges and taxes—and why we request the repeal of title V and the repeal of the user taxes established by the Airport and Airway Revenue Act of 1970.

So long as Congress and the public were willing to pay for accelerated aviation development, we raised only occasional objections. We have thought for over 10 years that the Federal Government was spending too much money on aviation and not spending it very wisely. The following table presents, admittedly, a simplified sketch of the money problem as we see it.

	Air FAA	Water USCG	Highway FHWA–NHSTA
1974 appropriations per vehicle	$12,300	$104	$42
1974 vehicles per employee	2.6	1,237	19,714
1972 fatalities	1,534	1,871	56,700

Even a proponent of aviation may be excused for asking if our national priorities have not been wrenched askew. Looked at another

way, if the Coast Guard were involved in water related activities as the FAA is in aviation, it would have almost three million employees and a budget approaching $9 billion. Similarly, the highway agencies would require 41 million employees and a budget well over a trillion dollars.

It is apparent to us, as it is becoming apparent to others, that an air traffic control system that seeks positive control of all aircraft, but becomes overloaded when the weather goes sour and 10 percent of our aircraft try to use it, is not the answer.

It is apparent to us that an airport aid program that has turned into an annual dole for a few large cities—when many other communities and recreational areas do not even have a paved and lighted airstrip—is not the answer.

It is apparent to us that provision of costly control towers and associated facilities at airports with little traffic is not the answer.

It is apparent to us that the aviation fatality rate is at so low a level that it does not yield significant improvement despite massive expenditures justified in the name of safety. This is not the answer.

Meanwhile, a retarded aviation industry produces a few thousand vehicles annually while other modal industries produce millions; the average cost of our new aircraft has multiplied16 times in the last 26 years; annual ownership turn over is the equivalent of 52 percent of our total fleet; and we've been prevented from developing enough traffic to maintain at least one service operator at each public use airport. As a consequence, millions have been denied the pleasure and advantage of personal aircraft use.

We conclude that the mission and purpose of the FAA needs comprehensive, searching review and drastic revision. From our parochial viewpoint, we find it galling that with respect to general aviation, the FAA's policy can be summed in these words from its policy statement issued in 1965, "Thus, the Agency's primary interest will be in safety and airworthiness rather than promoting utilization." It is small wonder that many general aviation people are unhappy with an FAA that has such a policy. And it is small wonder that they object to sharing the financial burden of programs designed to inhibit their activities while promoting the utilization of other sectors of the aviation community.

We are persuaded that if the present course of Federal aviation programs continues, personal aircraft usage for business and pleasure purposes will, for all practical purposes, be priced out of existence. Therefore, we not only call for repeal of the aviation user taxes and the consequential repeal of the trust fund based upon them, but for repeal of the Airport and Airway Development Act of 1970 which they were devised to fund. We would also support a revision of the basic mandate of the FAA contained in the Federal Aviation Act—or at least a revision of the FAA's interpretation of that mandate—so that Federal aviation programs were less inhibitive and more promotional in character.

If experience has proved anything in transportation, it has proved that the principal terminal should be downtown where the center of economic activity is located. In aviation, Government practices the reverse. Consequently, we see new principal airports established far

from the city center and slowly but inexorably the focus of economic activity moves to surround them. This history suggests to us that the nature of urban renewal programs should be modified to put the main airport at the city center instead of other developments that have no hope of surviving there in the absence of economic activity.

The Airport and Airway Development Act has refocused our attention on another policy anomaly that is difficult to reconcile. For years, airport development assistance has been denied to privately owned airports provided for public use. The Government is willing to subsidize private air carrier corporations to provide airline service but is unwilling to similarly subsidize private airport companies to provide service to the flying public. The 1970 act exacerbated this situation by imposing user taxes on the fuel sales and aircraft at these private enterprise airports and allowing nothing in return. This is a peculiarly obnoxious form of enforced subsidy for competitive publicly owned airports and is another argument for the repeals we desire.

We think a wise government would limit its appetite for aviation programs to what the public will support and can afford, set realistic objectives for those programs, and monitor them with a frequent, skeptical, and searching eye.

I will be happy to respond to any questions you may have.

COMMENTS ON THE SECRETARY'S STATEMENT

Mr. CONTE. You haven't commented at all on Secretary Brinegar's statement here yesterday. If you would care to do that for the record, please send it to us so that we may incorporate that as part of the record.

Mr. MONROE. In the process of his giving it yesterday, I made some notations. They are a little on the acid side and I think I should study them and moderate them.

Mr. CONTE. In politics it is always good to wait 24 hours prior to giving a critical response.

Thank you very much for your statement.

[Mr. Monroe's comments on the Secretary's statement follow:]

AIRCRAFT OWNERS AND PILOTS ASSOCIATION,
Washington, D.C., March 22, 1974.

Representative JOHN J. MCFALL,
Chairman, Subcommittee on Transportation, Committee on Appropriations, U.S. House of Representatives, Washington, D.C.

DEAR CHAIRMAN MCFALL: At the conclusion of our testimony on national transportation policy before your subcommittee, we were invited to submit comments regarding the statement by DOT Secretary Brinegar. This supplies those comments.

We understand many of the qualms respecting national policy formulation expressed in the first five pages of the statement. We have expressed them somewhat differently in our own. Yet we remain puzzled and a little disappointed that the executive and DOT should be in such a quandary over the matter. There is, we think, a common understanding that national goals are not absolute or mutually exclusive. No responsible person, even in transportation, thinks that one particular goal, even a transportation goal, should be pursued to the exclusion or disregard of all else. We, and we suspect most people, recognize that goals, and the policies and programs leading to them, must be reasonable compromises.

What the executive and the DOT should be recommending with some specificity is the set of compromises they think should be pursued. More particularly, we have looked to DOT to recommend what they think the transportation compromises should be, how they fit in the overall scheme of national goals, and how and to what extent they would respond to the manifold desires of the citizenry. It is

apparent that the administration has not figured out what its goals should be, how they should be compromised to form a coherent scheme, and what programs should be implemented to achieve them.

Instead, the DOT appears to be pursuing ad hoc remedies for specific modal problems which appear to be—though they may not really be—of a pressing nature and opting for indecision as the key to what it frequently refers to as "flexibility".

We do not think "the very concept of a 'national transportation policy' " is as "inherently vague and elusive" as contended. The goal is to make the exchange of goods, services, and ideas as easy as practical. This exchange involves millions of individuals making independent decisions on some sort of rational basis. (If it is not rational, why have a transportation goal, policy, plan, program, system, or organization?) This gets back to our call for an economic and regulatory environment in which transportation enterprise and activity can survive and thrive.

"Transportation is not an end in itself. It is a means to contribute to the economic well-being and quality of life in our Nation," said the Secretary. This remark understates the essentiality of transportation's role in our society. Transportation is the indispensable means by which we bind the economy together and make it work. This difference in emphasis may form the root of the DOT's difficulty in dealing with transportation problems.

It needs to be remembered also that transportation is an end in itself for those thousands who are engaged in providing it. Thus, it becomes an intermediate goal to the ultimate objective. Many a cause has been lost "all for the want of a horseshoe nail." Adequate and facile transportation is such a nail.

With respect to that section of the statement dealing with "How Do We Stand Today?", we leave commentary on its nonaviation features to others. We have already expressed our reservations regarding the practicality of trying to entice people into common carrier transportation in any but along these lines but the people largely vote otherwise with their feet and their pocketbooks.

Aviation is another matter.

The Secretary reports 12,500 airports but fails to note that almost an equal number of incorporated communities do not have one. Nor does he indicate that only about half of these existing airports are open for public use. Nor does he report that less than 4,000 are in the National Airport System Plan presently or contemplated for 1980.

The DOT position seems to be that few if any additional airports are needed. In terms of air carrier operations, DOT may be correct but it is dead wrong so far as general aviation operations are concerned. There are still too many communities rural resources and recreational areas that are inaccessible by small aircraft which are employed for a wide variety of useful purposes.

Unfortunately, the aircraft owner cannot carry his airport with him. Nor can he afford to buy all of them in the places where they are needed. But he can patronize them—and does. As a consequency, private enterprise has built more airports in the last quarter century than has all government combined. Yet the Secretary is silent on the matter of fostering provision of airports for public use by private enterprise. For a government that is short of money and hamstrung with redtape, we think this ought to be a key issue.

The Secretary is silent on the matter of economy in the provision of air traffic control facilities and navigation aids. Yet the user charge cost allocation issue has thrown this matter into high contention. Instead, he merely says, "A major outstanding issue involves the equitable allocation of the costs of operating the airport and airway system among users of the system." The main reason it's outstanding is that the Secretary hasn't met his reporting dates—either those established by law or himself. Nor did he discuss any of the contentious matters involved in that project which certainly are matters of "transportation policy."

So far as energy consumption in transportation is concerned, we feel that the personal aircraft compares very favorably. The charts attached give some of the data. These aircraft are not "relatively inefficient." They have advantages of speed, shorter routes, flexible response to time requirements, and generally get closer to the ultimate destination. Efficiency calculated on the basis of transportation between two intermediate destinations, neither of which is desired by the user, and at a time not to his advantage, is fallacious to start with. Yet this is the basis for the efficiency advantages alleged for common carrier transportation.

We turn now to the Secretary's "Policy Elements." These principles" seem less a statement of policy than musings about it. Taken in combination they reflect in-

decision rather than direction. We have tried to analyze them, pare away the vague prose of multiple modifiers and seek an understanding of DOT's views. Our somewhat brutal translation of these 10 principles follows:

(1) The Goal—transportation should be limited to essentials—whatever those essentials are.

(2) Private enterprise—should be relied upon unless public enterprise might be better.

(3) Financing—user charges should be relied upon unless general revenues are more expedient.

(4) Economic regulation—let us reexamine together.

(5) Energy, safety, environment, service to disadvantaged—think! There may be a better way out of these conflicting demands.

(6) Urban mass transit—let us solve this problem by throwing more money at it.

(7) Rural transportation—what is the problem and who, or what is involved?

(8) Intermodal coordination—some day we will have to get organized.

(9) Research and development—keep it small and aimed at modal problems.

(10) Planning—let us study the transportation problems.

In short, the prose reads reassuringly but there is little substance. The indecision respecting the goal, the ambivalence regarding public versus private enterprise, the disparate views on modal user charges, the perplexities, bewilderments and uncertainties respecting the other issues indicate to us that our reservations about the possibilities of formulating a national transportation policy were even better founded than we suspected. The task may indeed be too complex for centralized formulation and direction. Certainly the DOT has been unable to do so in the 8 years of its existence. Perhaps former Secretary Volpe was right when he recommended dissolution of the Department as a part of the President's massive reorganization plan a few years ago. Three different Secretaries from two different administrations and parties have been unable to fulfill this purpose set forth in section 2 of DOT's enabling act. Nor have the planners in a number of agencies been able to provide coherent and comprehensive guidance to them.

Thus it remains apparent to us that the only people able to formulate a national transportation policy are those "supreme generalists" in Congress who have the capability of devising a workable compromise between individual freedom and national order coupled with public desires and the public's ability to pay for what it wants.

Cordially,

ROBERT E. MONROE, *Vice President,*
Policy and Technical Planning.

Attachment.

FUEL CONSUMPTION, AUTO AND SEAT MILES PER GALLON OF REPRESENTATIVE 1974 CARS

Automobile Make and Model	Car MPG *	Seat Miles Per Gallon by Occupied Seats 4	3	2	1
American Motors Hornet	11.0	44.0	33.0	22.0	11.0
American Motors Ambassador	10.4	41.6	31.2	20.8	10.4
Plymouth (intermediate)	11.6	46.4	34.8	23.2	11.6
Chrysler	8.4	33.6	25.2	16.8	8.4
Ford Pinto	22.8	91.2	68.4	45.6	22.8
Ford Maverick	13.1	52.4	39.3	26.2	13.1
Mercury Cougar	9.5	38.0	28.5	19.0	9.5
Lincoln	7.9	31.6	23.7	15.8	7.9
Chevrolet Impala	10.1	40.4	30.3	20.2	10.1
Pontiac Bonneville	7.8	31.2	23.4	15.6	7.8
Oldsmobile Toronado	8.3	33.2	24.9	16.6	8.3
Buick LeSabre	9.0	36.0	27.0	18.0	9.0
Cadillac Eldorado	8.0	32.0	24.0	16.0	8.0
Toyota Corolla - 2 sedan	22.6	90.4	67.8	45.2	22.6
Volkswagen Deluxe Sedan II	20.9	83.6	62.7	41.8	20.9

* Data picked at random from Environmental Protection Agency report on 1974 cars. These are representative only. The EPA test, which produced this information, is a suburban/urban cycle that is 7.5 miles long. The EPA points out that many factors can effect fuel economy such as driving habits, steady cruising on the highway, etc. Data pertaining to individual models will also vary depending on engine size, transmission, carburetor, etc.

Small Airplanes Are Big Fuel Savers

Mobility is the foundation upon which the economic, social and political structure of America is built.

Business—production, sales, distribution, employment—depends upon transportation for survival and growth. Business transportation benefits the individual traveller—by aiding his livelihood—and the general well-being—by providing goods, services and employment.

So, too, does pleasure travel benefit in two ways. Rest, relaxation and recreation for the individual—and—employment and economic gain for the nation. Tourism expenditures are the second ranking retail expenditures in the U.S. Tourism spending in the U.S. provides jobs for approximately four million Americans.

The challenge of the fuel shortage is to maintain this essential transportation—both for business and tourism—while also conserving energy.

The private airplane is one means of doing this. Most people don't think of general aviation as a way of conserving fuel. But, it is. There are two basic reasons for this:

1. The airplane travels direct routes, thus a shorter distance between two points, and,

2. Size for size, most small airplanes get more miles to a gallon than most automobiles.

In addition, the private airplane is an alternate user of energy. That is, travel is done in the airplane instead of by other means. The mission of the private airplane, of course, is different from that of any other means of transportation. It's purpose is to provide swift, flexible transportation over long distances.

The nation's entire fleet of general aviation airplanes performs its transportation services—for business and pleasure tourism—using only seven-tenths of one percent of all the fuel consumed by all forms of transportation.

The private airplane is one means of maintaining mobility while making efficient use of energy.

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GALLONS OF FUEL USED ON TYPICAL TRIPS BY REPRESENTATIVE AUTOS AND AIRPLANES

			LARGE							STANDARD							SMALL				
A Trip The Distance FROM — TO	Highway Miles	Plane Miles	Cadillac 8.0	Chrysler 8.4	Lincoln 7.9	Piper Aztec 8.3	Beech Baron 9.0	Cessna 310 8.3	Seneca 10.1	Plymouth 11.6	Chevrolet Impala 10.1	Mercury Cougar 9.5	AM Hornet 11.0	Buick LeSabre 9.0	Cessna 172 17.3	Beech Bonanza 14.6	Piper Arrow 17.3	Ford Pinto 22.8	Toyota Corolla - 2 22.6	Volkswagen 20.9	Cessna 150 21.8	Grumman Amer. TR 2 19.0
Baltimore - St. Louis	816	733	102.0	97.1	103.3	88.3	81.4	88.3	72.6	70.3	80.8	85.9	74.2	90.7	42.4	50.2	42.4	35.8	36.1	39.0	33.6	38.4
Boston - Cleveland	648	551	81.0	77.1	82.0	66.4	61.2	66.4	54.6	55.9	64.2	68.2	58.9	72.0	31.8	37.7	31.8	28.4	28.7	31.0	25.3	29.0
Dallas - Denver	804	663	100.5	95.7	101.8	77.9	73.7	77.9	65.6	69.3	79.6	84.6	73.1	89.3	38.3	45.4	38.3	35.3	35.6	38.5	30.4	34.9
Memphis - Philadelphia	1062	881	132.8	126.4	134.4	106.1	97.9	106.1	87.2	91.6	105.1	111.8	96.5	118.0	50.9	60.3	50.9	46.6	47.0	50.8	40.4	46.3
Los Angeles - Salt Lake City	738	579	92.3	87.9	93.4	69.8	64.3	69.8	57.3	63.6	73.1	77.7	67.1	82.0	33.5	39.7	33.5	32.4	32.7	35.3	26.6	30.4

- Automobile fuel requirements computed based on U.S. Environmental Protection Agency report on fuel economy test results of 1974 automobiles.
- Aircraft fuel requirements based on manufacturers' data computed at 65% power setting.
- Fuel consumption by autos or airplanes will vary with condition of the vehicle, weather, driver or pilot abilities and other factors.

FUEL CONSUMPTION, AIRPLANE AND SEAT MILES PER GALLON OF REPRESENTATIVE AIRPLANES

Air Carrier

Model	Passenger Seats (1)	Cruise (2)	Gallons Per Hour (3)	Plane M.P.G.	Seat Miles Per Gallon At This Passenger Load Factor 100% Pass.	100% SMPG	50% Pass.	50% SMPG	25% Pass.	25% SMPG
Douglas DC-8-63	203.1	395	1,784	.221	203.1	45.0	101.6	22.5	50.8	11.2
Boeing 747	317.1	463	3,349	.138	317.1	43.8	158.6	21.9	79.3	10.9
Douglas DC-10-10	224.6	425	2,170	.196	224.6	43.8	112.3	22.0	56.2	11.0
Lockheed L-1011	213.7	421	2,365	.178	213.7	38.0	106.9	19.0	53.4	9.5
Boeing 727-200	123.3	359	1,397	.257	123.3	31.7	61.7	15.9	30.8	7.9
Boeing 737-200	91.9	307	893	.344	91.9	31.5	46.0	15.8	23.0	7.9
Boeing 707-300C	137.0	431	1,906	.226	137.0	31.0	68.5	15.5	34.3	7.8
Douglas DC-9-30	89.4	312	931	.335	89.4	29.9	44.7	15.0	22.4	7.5

General Aviation Single Engine

Model	Seats	Cruise	GPH	MPG	Seat Miles Per Gallon With These Seats Occupied 8	7	6	5	4	3	2	1
Beech Bonanza (V-35)	6	198	13.4	14.8	-	-	88.8	74.0	59.2	44.4	29.6	14.8
Cessna 180	6	151	12.0	12.6	-	-	75.6	63.0	50.4	37.8	25.2	12.6
Piper Cherokee 6	6	153	12.2	12.5	-	-	75.0	62.5	50.0	37.5	25.0	12.5
Cessna 207	7	145	13.7	10.6	-	74.2	63.6	53.0	42.4	31.8	21.2	10.6
Cessna Centurion	6	168	13.7	12.3	-	-	73.8	61.5	49.2	36.9	24.6	12.3
Piper Cherokee 180	4	132	7.6	17.4	-	-	-	-	69.6	52.2	34.8	17.4
Cessna 172	4	126	7.3	17.3	-	-	-	-	69.2	51.9	34.6	17.3
Piper Arrow 200R	4	159	9.2	17.3	-	-	-	-	69.2	51.9	34.6	17.3
Piper Cherokee 140	4	125	7.3	17.1	-	-	-	-	68.4	51.3	34.2	17.1
Cessna 185	6	154	13.7	11.2	-	-	67.2	56.0	44.8	33.6	22.4	11.2
Cessna Cardinal (RG)	4	156	9.4	16.6	-	-	-	-	66.4	49.8	33.2	16.6
Cessna 206	6	150	13.7	11.0	-	-	66.0	55.0	44.0	33.0	22.0	11.0
Beech Sierra (B-24R)	4	139	9.1	15.3	-	-	-	-	61.2	45.9	30.6	15.3
Beech Sport (B-19)	4	110	7.6	14.5	-	-	-	-	58.0	43.5	29.0	14.5
Piper Cherokee 235	4	146	10.9	13.4	-	-	-	-	53.6	40.2	26.8	13.4
Beech Sundowner (C-23)	4	121	9.0	13.4	-	-	-	-	53.6	40.2	26.8	13.4
Cessna 182	4	147	12.0	12.3	-	-	-	-	49.2	36.9	24.6	12.3
Cessna 150	2	107	4.9	21.8	-	-	-	-	-	-	43.6	21.8
Grumman American TR-2	2	120	6.3	19.0	-	-	-	-	-	-	38.0	19.0
Multi Engine												
Piper Seneca	6	184	18.3	10.1	-	-	60.6	50.5	40.4	30.3	20.2	10.1
Piper Navajo	8	231	30.8	7.5	60.0	52.5	45.0	37.5	30.0	22.5	15.0	7.5
Cessna 402	8	220	30.0	7.3	58.4	51.1	43.8	36.5	29.2	21.9	14.6	7.3
Cessna Skymaster	6	179	19.8	9.0	-	-	54.0	45.0	36.0	27.0	18.0	9.0
Beech Baron (B-55)	6	211	23.5	9.0	-	-	54.0	45.0	36.0	27.0	18.0	9.0
Cessna 421	8	234	37.0	6.3	50.4	44.1	37.8	31.5	25.2	18.9	12.6	6.3
Cessna 310	6	203	24.6	8.3	-	-	49.8	41.5	33.2	24.9	16.6	8.3
Piper Aztec	6	208	25.0	8.3	-	-	49.8	41.5	33.2	24.9	16.6	8.3
Beech Duke	6	262	18.3	7.1	-	-	42.6	35.5	28.4	21.3	14.2	7.1

(1) For airliners, this means average number of passenger seats available for that type. For general aviation aircraft, this figure includes the pilot, as one would do when counting the seats used in a private automobile.

(2) Reported average block speeds in statute miles for airliners. Airline source: Civil Aeronautics Board Aircraft Operating Cost and Performance Report, Vol. 7, September 1973. For general aviation aircraft, figure is from type's manufacturer, also statute, computed at average of 65% power for cruise.

(3) Same sources as in No. 2.

Private Airplanes Add Fuel Efficiency to the Pleasure of Business Travel and the Business of Pleasure Travel.

WEDNESDAY, MARCH 6, 1974.

WITNESS

CROCKER SNOW, FORMER CHAIRMAN, AVIATION ADVISORY COMMISSION, AND DIRECTOR OF AERONAUTICS, COMMONWEALTH OF MASSACHUSETTS

Mr. CONTE. The next witness is Mr. Crocker Snow, an old friend of mine.

Sitting up here, Crocker, I couldn't help but think about 18 or 20 years ago, maybe longer than that, we were flying together and you haven't changed a bit.

Mr. SNOW. I wish you wouldn't tell anybody how long I have been flying.

With the Chairman's permission, I would like to cut down what is a very short statement anyway and save 2 or 3 minutes to comment on Secretary Brinegar's statement.

Mr. MCFALL. Put your statement in the record and you may comment on Secretary Brinegar's statement.

PREPARED STATEMENT OF MR. SNOW

Mr. SNOW. I would like to preface it with parts of my statement.

[The prepared statement follows:]

Just over a year ago the Aviation Advisory Commission completed a 2-year $2 million study of the long-range needs of aviation, and made its report, as directed by law, to the President and to the Congress.

Some of the Commission's many recommendations, especially in the currently visible problem areas of airport noise, air service to small, isolated communities, and Federal/State relations are being followed. And our conclusion that there are better, more practical and less expensive ways to balance airport demand and capacity than building a lot of brand new metropolitan super jetports seems to be catching on all over.

But only a few members of Congress, including, I'm pleased to say, Chairman McFall, have paid any apparent attention to our most basic, and probably most important conclusion which, by the way, is right down the line with Mr. McFall's remarks in calling for this hearing.

The Commission's stated goal was to assess the needs of aviation as an integral part of the total transportation system.

We went on to detail our objective as follows:

U.S. civil aviation policy targets, in general, should strive to assure that aviation will be compatible with the world of which it is a part, and to produce a quality of service suitable to the needs of the traveler and shipper at a reasonable cost. For these reasons civil aviation policy targets can be divided broadly into the following categories:

Compatibility with national goals;

Compatibility with transportation policies;

Compatibility and balance of physical elements of the aviation system;

Quality and adequacy of service to the public; and

Economic viability of the system.[1]

However, we soon learned, quoting again from our report, that—

There is no single national transportation policy in the United States. Despite statutes, Presidential messages, and other official statements, Federal policy can be described only by looking at actual achievements, rather than what has been said.

Such a review reveals that implicit policies result from the amount of Federal financial aid, regulation and standards established for the various modes. It also shows that policies have evolved not from a search for the most efficient means to accomplish particular aims, but rather from a combination of political successes or failures.

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[1] Technical Annex to the Report of the Aviation Advisory Commission, p. III–22.

Thus various modes have, at various times, achieved sufficient political (and funding) success so that the entire approach to transportation is modal, not systematic. This continues despite the creation of the Department of Transportation to coordinate models for maximum efficiency.[2]

This, of course, complicated our job no end.

Our next step was to have Batelle/Columbus Labs study the existing aviation system and its elements. They told us that—

The aviation system is a multilevel structure consisting of many elements, designed to serve many masters and called upon to resolve a variety of conflicts. The system makes a significant contribution to the national welfare but is, along with its individual parts, beset by many problems.

The problems result from the insular nature of the system elements, from changing national goals, lack of intermodal planning, insufficient aggressiveness by the FAA and a lack of long-range system planning based on objective evaluation criteria.

There is little consideration given to an effective means of making system changes. Civil aviation, a pluralistic entity, has many subelements in good position to prevent innovation, while no one element can control the rest.[3]

We decided, then and there, that the single most important long-range need of aviation was a consolidation of the fragmented Federal responsibility for its present and for its future.

We suspected that something similar was needed for the other modes, and were convinced that all of them should be pulled together at the top, as they theoretically are in the DOT. For an example of why—one of our early studies, by Mitre, concluded that very high speed, surface transportation might well be the only practical way to meet future short-haul air transportation needs in the Northeast Corridor. A just completed Massachusetts study strongly supports this as far as Boston-New York passenger service is concerned.

Anyway, we engaged Paul Cherington, now president of the Boston and Maine Railroad, then the James J. Hill, professor of transportation at the Harvard School of Business Administration, and before that Secretary of Transportation John Volpe's Assistant Secretary for Policy and Planning, to review and polish our thoughts on how the Federal Government might be structured so as best to meet the problems and issues of civil aviation. His report to us is so much to the point that I am leaving a copy with you.

Essentially it proposes gathering, in an Undersecretary for Civil Aviation in the DOT, all of the present aviation functions of the DOT and the FAA, plus new responsibility for—

The research and development activities of NASA in aeronautics, avionics and propulsion as they pertain to civil aviation.

Establishment of an office, bureau or other organizational unit to deal with problems of new aircraft, engines, and avionic systems needed for civil aviation. This office would also administer programs designed to assure the continued viability of the development and manufacturing industries of these items.

Development of substantive positions and policies in the international area now exercised by State, DOT and CAB on a divided basis. State would continue to conduct negotiations with foreign governments.

Development of policies and procedures and an active role in civil aviation labor-management relations. This function is now performed almost exclusively by the Department of Labor.

The ministerial functions of the CAB—the intent of this is not to make the CAB's adjudicatory and legislative decisions subservient to the Under Secretary for Civil Aviation, but to remove those administrative and policy functions that should be in the executive branch.

The organizational chart includes, to cover the big picture, comparable Under Secretaries for surface and marine.

We bought the idea, adding a procedure to ensure participation in the planning and implementation process by the States, the aviation industry, and the system's consumers.

We have received many valuable comments on our report since it was published. In the light of these I would make only one change in this part of it. I would

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[2] Technical Annex to the Report of the Aviation Advisory Commission, p. III–6.
[3] Technical Annex to the Report of the Aviation Advisory Commission, p. III–31.

today recommend that the Administrator of the FAA, carrying with him all of his present responsibilities and adding those listed earlier, be made the Under Secretary for Civil Aviation, and thus become in fact Mister U.S. Civil Aviation.

This would at least pave the way for a coherent national air transportation policy, plan, and program, but it still won't get us the comprehensive, cost effective, national transportation policy of which it ought to be an integral part.

This has become especially important since we have been so rudely, but fortunately awakened (I hope) to the realization that our prime source of transportation energy is not unlimited, no matter how rosy things may look when the oil embargo is lifted. We've got to get on with the job of designing a total transportation system which makes the most efficient use of the energy we have and may reasonably expect to get.

To achieve the necessary national policy, we have to do for land and sea something very much like what the AAC has proposed for air. And even this won't work unless those affected, in State and local government, in industry, and among consumers, are invited to come along all the way for more than just the ride.

Summary Comments

Mr. Snow. You all know that just over a year ago the Aviation Advisory Commission completed a 2-year, $2 million study, and, as required by law, we made our report to the President and to the Congress. Some of our recommendations are being followed.

I was happy to see more than I expected in Secretary Brinegar's statement.

Only a few Members of Congress—and you are one of the outstanding examples, Chairman McFall—pays any apparent attention to our basic and probably most import conclusion—which, by the way, is right down the line with the statement you put in the Congressional Record.

The Commission's stated goals were to assess the needs of aviation as an integral part of the total transportation system. We went on to detail our objective—I will quote from the report—compatibility with national goals.

Compatibility with transportation policies; compatibility and balance of physical elements of the aviation system; quality and adequacy of service to the public and economic viability of the system.

However, we soon learned quoting again from the report:

There is no single national transportation policy in the United States. Despite statutes, Presidential messages and other official statements, Federal policy can be described only by looking at actual achievements rather than by what has been said.

When we got that rather unfortunate—when we arrived at that rather unfortunate conclusion—we then went to Batelle Columbus and asked them to study the existing aviation system to see if there was one. They told us the aviation system is a multi-level structure consisting of many elements designed to serve many masters called upon to resolve a variety of conflicts. The system makes a significant contribution to the national welfare but is, along with its individual parts, beset by many problems. The problems result from the insular nature of the system elements, from changing national goals, lack of intermodal planning, insufficient aggressiveness by the FAA, and the lack of long-range system planning based on objective evaluation criteria.

So we decided right then that the single most important long-range

need of aviation was a consolidation of the fragmented Federal responsibility for its present and for its future.

We suspected that something similar was needed for the other modes and were convinced all of them should be pulled together at the top as they theoretically are in the DOT.

For an example of why, one of our early studies by Mitre concluded that very high speed surface transportation might well be the only practical way to meet the future short-haul air transportation needs in the Northeast Corridor.

MASSACHUSETTS STUDY

A just-completed Massachusetts study strongly supports this as far as Boston-New York passenger service is concerned. At any rate, we engaged Paul Cherington, who is now president of the Boston-Maine Railroad. He was then with James J. Hill, professor of transportation at the Harvard School of Business Administration, and before that he was John Volpe's Assistant Secretary for Policy and Planning in the DOT.

To review and polish up our thoughts on how the Federal Government might be structured so as best to meet the problems and issues of civil aviation, his report to us is so much to the point that I am going to leave a copy with you, if I may.

Mr. McFall. We would be very happy to have that.

Mr. Snow. It is worth staff study. Essentially what this does, it proposes gathering—in an UnderSecretary for Civil Aviation in the DOT—all of the present aviation functions of the DOT and the FAA, plus new responsibilities—five of them:

The research and development activities of NASA in aeronautics, avionics, and propulsion as they pertain to civil aviation.

Establishment of an office, bureau, or other organizational unit to deal with problems of new aircraft, engines and avionic systems needed for civil aviation. This office would also administer programs designed to assure the continued viability of the development and manufacturing industries of these items.

Development of substantive positions and policies in the international area now exercised by State, DOT, and CAB on a divided basis. State would continue to conduct negotiations with foreign governments.

Development of policies and procedures and an active role in civil aviation labor/management relations. This function is now performed almost exclusively by the Department of Labor.

The ministerial functions of the CAB. The intent of this is not to make the CAB's adjudicatory and legislative decisions subservient to the Undersecretary for Civil Aviation, but to remove those administrative and policy functions that should be in the executive branch.

The organizational chart in here includes—to cover the big picture—comparable Under Secretaries for surface and for marine.

We bought the idea. Adding a procedure to insure participation in the planning and implementation process by the States, the industry, and the systems consumer.

This would at least pave the way for a coherent national air trans-

portation policy, plan, and program, but it still won't get us the comprehensive cost-effective national transportation policy of which it ought to be an integral part.

This has become especially important since we have been so rudely—but fortunately—awakened, I hope, to the realization that our prime source of transportation energy is not unlimited. No matter how rosy things may look when the oil embargo is lifted, we have got to get on with the job of designing a total transportation system which makes the most efficient use of the energy we have and can expect to get.

To achieve the necessary national policy, we have to do for land and sea something very much like what the AAC has proposed for air. And even this won't work unless those affected—State and local government and industry and consumers—are invited to come along all the way for more than just the ride.

That is my position.

I would like, with your permission, very briefly to hit the high spots of Secretary Brinegar's statement.

COMMENTS ON SECRETARY'S STATEMENT

First of all, it is a good job of documenting what exists. We obviously agree that what does exist doesn't constitute a national transportation policy; that there should be one, and that it should be designed to serve national goals.

I was a little disappointed in the lack of a clear-cut program for getting from here to there. We disagree, where he says that a national transportation policy should only guide governments at all levels. I think it should also guide the very vital private sector.

I am not competent to discuss highway, rail, and the other modes, but I do think I know a little bit about air transportation. I was very pleased, as I said earlier, to find that many of the—obviously the Secretary has read our report, which some people haven't, and apparently he agreed with quite a lot of it.

There are a few things in his statement, however, that I think are slightly misleading, and I think you should know about it.

On page 35 he says there are some 12,500 airports serving the system. Well, I own two of those myself. One is in my backyard and one is on an island. That is a very misleading figure. A lot of these airports to me are like somebody's private driveway. There are actually about 5,000 to 6,000 in the system that really serve air transportation.

Now, he says there is a commercial aviation fleet of 2,500. I am sure what he means is in the certificated airlines system. There are a great many more commercial airplanes.

I found out this morning, after I read his speech, there are 827 airplanes in the commuter airline fleet; very vital.

There are 4,057 as of 1971—those are the latest FAA figures—air taxi airplanes.

There are 5,271 at the same time engaged in aerial applications; spraying, dusting, those are commercial. There are 1,844 in general industrial use; pipeline, petroleum and so forth. So that figure is quite misleading.

On page 36 he speaks that we can make better use of what we have,

with which we completely agree. One of his ways is planned improvements in air traffic control systems.

In our report we recommend some rather drastic changes that will save a lot of money and be more efficient. I am afraid I have seen nothing that indicates planned improvements that are going to amount to anything. There should be.

He speaks here of improved rail passenger service in the Northeast corridor that would significantly help to relieve pressure on the New York area airports.

We could not agree more except when he says rail. We do not think you can run fast enough on rail to do the job there. We have discussed this, as you know. He says here, and I wish the DOT and the FAA would talk to each other, "We expect few, if any, major additions to the Nation's airport capacity during the next decade."

I agree. I checked this morning to make sure I am accurate. The current FAA national airport system plan, which is party line for airports, calls for 11 new airline airports—these are new ones—in the next 5 years, and 5 more within 10 years. So there are 16 in the next decade in the plan.

One of those is for Boston. We do not need it. One of them is a fourth jetport for the New York area. I think they realize they are not going to get that either.

BOSTON-NEW YORK TRANSPORTATION

Mr. CONTE. You've stated, I believe, that we need better transportation between Boston and New York?

Mr. SNOW. Right.

Mr. CONTE. And that rail is not the way to do it?

Mr. SNOW. I said surface is.

Mr. CONTE. Surface is or is not the way?

Mr. SNOW. No, surface is the way to do it. We do not think rail will do it.

Mr. CONTE. What kind of surface?

ENERGY USAGE

Mr. SNOW. MAG LEV or TAVC.

You see, the studies we have indicate that you have to go around 250 miles an hour to drain off Eastern's shuttle and so forth. You cannot do that on rails, I do not think.

There are a number of things here that I think he agreed with us, increasing the capacity of existing airports, diverting terminal traffic to surrounding airports instead of building new ones.

One thing I would like to comment on here, the last thing, and this is quite important, there is a comparison in his statement here on page 40 of the average energy usage and efficiencies of rail, bus, automobile, and air. It is given in passenger miles per gallon of fuel.

I suspect that it is probably accurate, insofar as that goes. But the heck of it is that certain forms of transportation have to use gallons of crude oil. But rail does not have to. Rail can operate on eletricity. You can generate electricity, hydroelectricity, by nuclear power all kinds of

ways. So I do not think it is a fair comparison when you are looking at the whole energy picture to assume that all forms have to use fuel oil.

My final remark is, and this really bothers me and I have heard very little said about it: Crude oil is the basis for our petrochemical industry. Out of that we make more things than most people know, all the plastics we use, the cosmetics, all kinds of things.

I think with the vanishing resource there, it is a crime to burn this stuff. We have to do it for a while. Nothing else will run airplanes; nothing else will run automobiles very well. We ought to be bending every effort to finding other sources of energy fuel oil and save what fuel oil, crude oil we have for the petrochemical industry.

Thanks very much. I am delighted that you are doing this and I very much appreciate the opportunity to be with you.

Mr. McFall. Thank you very much, Mr. Snow. We have been glad to have you as a witness and participant as well as a spectator during these 2 days of hearings.

We value your comments on the Secretary's statement, as we are also asking for such comments from others so that we can help evaluate where we are going.

Do you have any questions, Mr. Conte?

Mr. Conte. Not at this time.

ADDITIONAL COMMENTS FOR THE RECORD

Mr. Snow. One thing Mr. Conte will be interested in. Our joint Governor and good friend would have liked to have testified here had he known about it beforehand and had you been willing to have him. I think he would still like an opportunity to comment, particularly on Secretary Brinegar's statement.

Is that all right with you, in writing, of course?

Mr. McFall. If he is interested, we would be very glad to have his statement.

[A letter from Mr. Snow follows:]

THE COMMONWEALTH OF MASSACHUSETTS
AERONAUTICS COMMISSION,
Boston, Mass. March 7, 1974.

Hon. JOHN J. MCFALL,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN MCFALL: Thanks again for the opportunity to testify before your committee yesterday. Developing a compreshensive national transportation policy should be a matter of high priority, and I'm delighted that a group such as yours which is largely responsible for the size and details of the public investment in transportation is spark plugging the job.

Yesterday, in my comments on Secretary Brinegar's statement, I'm afraid that in order to save time I tended to accentuate the negative rather than the positive. I would like, therefore, to add the following to what the transcript of my testimony will show.

Except for the few numbers that I suggested in my testimony might be slightly misleading or appeared to be in conflict with the FAA party line, I think that the section on air transportation is accurate and sound. Perhaps my reaction is influenced by the fact that it contains, for the first time to my knowledge in a public executive document, several new points embodying many of the earlier conclusions and recommendations of the report of the Aviation Advisory Commission. Some of these are:

"It should also be noted that many metropolitan areas have existing airports that currently receive little or no commercial use."

"The major effort with airports should concentrate on increasing the capacity of existing airports—including ground-passenger handling—and examining more carefully the roles of multiple airports which serve a given metropolitan area. In addition, reducing the adverse aviation side effects of noise and pollution must continue to be a major consideration both in handling existing traffic and in planning for future growth."

"There is also need for a thorough review of the route and service structure of the domestic airline industry, including the appropriate roles of the respective classes of carriers."

"Beyond these measures, the preferred means of accommodating increasing pressures on airport capacity are diversion of short trips from aviation to other modes and the spread of aviation traffic into additional existing airports, as the market may dictate."

While I'm at it, I'd like the compliment the statement of Congressman Brock Adams, and point out that the statement of the Airport Operator Council International about the new federalism is not only contrary to the findings of the Aviation Advisory Commission, but is rather loose with its alliterative adjectives at the end of the first paragraph on page 3. I suggest that the Council coordinate its position with all of its members, and check its facts.

Sincerely,

CROCKER SNOW.

WEDNESDAY, MARCH 6, 1974.

WITNESS

STEPHEN AILES, PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS

Mr. MCFALL. Our next witness is Mr. Stephen Ailes, the president of the American Association of Railroads.

Mr. AILES. All right, sir. I have a statement here that Mr. Lang and I have worked on. I would be glad to submit it. It is quite brief. It is about nine pages. I think I really can summarize it.

Mr. MCFALL. Very well.

STATEMENT OF ASSOCIATION OF AMERICAN RAILROADS

Mr. AILES. We start off by making the point that the demand for freight transportation is increasing fairly rapidly. It is at 2 billion ton-miles now; it will be about 4 billion ton-miles by about 1990.

Most estimates indicate that railroads are still going to be required to perform a substantial share of that transportation by that time. If our share remains what it is now, we are faced with the job of producing about 1.6 billion ton-miles by 1990, which is about double what we are doing today.

If that seems like an ambitious assignment for this industry, let me note that our traffic was up 10 percent last year over 1972. It was up 6 percent in 1972 over 1971; and it is running substantially above 1973 this year. If we had greater capacity, it would be going up even faster.

So I make as my first point the fact that the railroads have a really important role to play in the future. They have played a major role for some 150 years in this country.

We are at the period of extreme growth right now.

My second point is that they are going to do that job a lot better as private enterprise than they would in public ownership, for the reasons that have traditionally been urged in support of that proposition and which seem to be all the more valid today.

Given these two points, it seems quite clear that one goal of our national transportation policy certainly should be to see to it that by 1990, and beyond, we as a nation are served by a strong, well-equipped, well-maintained, privately owned, and privately operated railroad system ready to play its proper role in meeting the Nation's transportation needs at that time.

If we are going to do so, it is very clear that the capital needs of the railroads will be very substantial between now and then. The industry put out a report called the Astro report and about 4 years ago that estimated capital needs at the rate of $3.6 billion a year for each of the ensuing 11 years to 1980. This estimate, if anything, is conservative now, because our growth rates are considerably faster than we anticipated at that time, and because inflation in labor and material costs means that those amounts of money buy less than we talked about then.

The important question is, how is this capital going to be generated? It is crystal clear from all points of view that it is much better for this capital to be generated because the railroads are earning good money and are able to plow back earnings into their properties and able to go to the private capital markets for money in the form of new equity financing.

If we are going to be able to do that, things have to change pretty substantially from the way they are now. The earnings in this industry have been grossly inadequate for the past 5 years, when they have ranged from a 1.73-percent return on net worth to about 3 percent last year. Earnings at this rate simply will not sustain new investment in the industry and simply do not provide funds that can be plowed back into the industry.

We are talking about $542 million net income for the industry last year, which is a small figure compared to that $3.5 billion that should be reinvested. Indeed, it is a small figure compared even to the $1.5 billion that was invested in the industry during the year.

The key to railroad earnings, obviously, lies in the ability to adjust rates upward in a timely fashion to cover cost increases.

Railroads have been regulated since the Interstate Commerce Act was passed nearly 100 years ago. That regulation has had many goals in terms of the protection of the shipping public, the development of the country, and so on. But a major goal of that regulation now has to be adequate earnings for the industry, so that the necessary capital can be generated. We simply cannot afford to use railroad regulation in the future as we have in the past as an instrument of national policy for achieving government goals that could be achieved in other ways.

Just to show you how pertinent this subject is, this very afternoon the Environmental Subcommittee of the Subcommittee on Commerce is considering legislation which puts low and restrictive rates on recyclable materials. Now, this would be done wholly without regard to what the railroads' needs are in carrying these commodities, because this serves some need and public purpose with respect to the environment. This is the sort of thing that just has to be put to one side if the railroad industry is going to play its appropriate role.

Mr. McFall. We have about 5 minutes left.

Mr. Ailes. All right, sir.

Mr. McFall. We have a vote that we have to go to. It would not be worthwhile for you to wait for us to come back.

Mr. Ailes. I can wind up very quickly.

A third point I try to make is that you have to look at the competitive situation even in a market where there is a strong demand for service. The railroads are no longer the monolith here on one side that can defeat all forms of competition. Thus, all the forms that receive Government support and Government help should pay the full cost of that help. This goes to the user charge issue.

Again, in the same light, it has been our national policy for many years to rely on the railroad industry to provide noncompensated services of one kind or another which were deemed to serve a social need. A glaring example is the railroad passenger business which cost this industry something like $10 billion between the end of World War II and the arrival of Amtrak on the scene. The whole branch line abandonment problem fits into that area. If this industry is going to have the earnings that are absolutely needed if it is to do the job that lies ahead of us, requirements of that sort simply have to be put behind us.

Great progress is being made in that regard. The Amtrak development itself was progress. The new Northeast legislation with its subsidy provisions for branch line service that cannot be operated at a profit, certainly is progress.

There is a substantial amount of money spent for Government support of research in transportation. The amount of it spent in connection with the railroad industry is miniscule compared to what goes into the other fields. This is another important point I make in my statement.

Finally, while we are fighting our way out of the bad situation of the recent past, we are going to need some forms of interim government financing assistance, loans, and what not. There are several bills before Congress that cover that right now. I hope that assistance is a short-range proposition.

Where I end up is that these railroads are no longer the exclusive source of intercity freight and passenger service they once were, but they are still vitally important to the country. So, our national transportation policy should have as a major goal the development of a strong, healthy railroad system prepared to meet the Nation's needs for intercity service.

PREPARED STATEMENT OF THE ASSOCIATION OF AMERICAN RAILROADS

Mr. McFall. We will insert the full text of your prepared statement at this point in the record.

[The prepared statement by Mr. Ailes follows:]

Studies made by the Department of Transportation and others show that there will be a steady increase over the years ahead in the demand for intercity freight transportation. That demand in 1972 generated a total of some 2,000 billion intercity freight ton-miles. DOT forecasts are that by 1990, this figure will go to 4,100 billion ton-miles per year.

All such projections, whether by the Department of Transportation or others, recognize that our railroads must and will be called upon to provide a large share of this needed transportation. In 1972, the railroads provided approximately 38 percent of these ton-miles. If they are to provide only this same share in 1990, then railroads must carry 1,560 billion ton-miles of freight.

This is an increase of approximately 100 percent over their present level of freight transportation output. A more conservative estimate of rail market share used in DOT's 1972 Transportation Study still puts the required growth of rail ton-miles from 1970 to 1990 at about 57 percent.

If the energy shortage continues into 1990, the demand for rail freight service may be substantially larger than either of these estimates. Railroads generate about four to five times as many ton-miles of freight per unit of fuel consumed as the trucks can. Efforts to conserve energy and the growing impact of high prices for fuel will both tend to drive freight toward rail. Piggyback in particular seems destined for rapid and sustained growth, as recent substantial increases in piggyback clearly portend.

In all, there is agreement that our intercity freight transportation railroads must do a larger and larger job for the U.S. economy over the years ahead. The question is not whether we need the railroads to do a big transportation job; the question is what we must do to assure that the railroads can do that job.

We are talking about a big industry. Today, the railroad industry employs 550,000 people. It represents a net capital investment of $28 billion with a net reproduction cost at today's prices of at least $70 billion. It operates 27,000 locomotives hauling 1.7 million freight cars over 204,000 miles of line. My first point is that the railroads are today and will be in the future essential to the Nation's welfare.

My second point deals with the issue of private versus public ownership and operation of our railroads. Our historic policy has been that private management can provide service more efficiently than public ownership can, because the profit motive provides incentives for efficiency and customer service which it is difficult or impossible to create in a publicly owned enterprise. The recent financial difficulties of some railroads does not challenge the soundness of that longstanding policy. The excellent job being done today by most railroads merely proves the point.

It follows that one goal of our national transportation policy should be to see to it that in 1990 and beyond we as a Nation are served by a strong well-equipped, well-maintained, privately owned, and privately operated railroad system ready to play its proper roll in meeting the Nation's transportation needs. needs.

If our railroads are to remain under private ownership and management, and if they are to have the capability to meet 1990's needs, however, they must be capable of raising the capital funds required to renovate, modernize, and expand their production facilities to meet the enormous demands we will put upon them.

What are the capital requirements of this industry? The ASTRO report published by the industry in June of 1970 estimated the railroad's capital needs at $36.4 billion over the ensuing 11-year period, terminating in 1980. This estimate of capital needs, moreover, was based on a projected annual traffic growth of 3½ percent and made no adjustments for inflation in labor and material costs. For the last 2 years rail traffic has been growing at almost 10 percent a year and there has been a steady inflation in labor and material costs; so it would appear that these earlier estimates of capital needs are understated.

How will this capital be generated? The railroad industry and the Nation will be better off if this new capital can be generated internally by retained railroad earnings and by funds borrowed in the private capital markets in the expectation of future earnings. This, in turn, can only be accomplished if railroad earnings improve substantially over the levels which have been achieved in the industry during the last 2 decades. Even if this capital were to be loaned by the Government, earnings would still be required to pay back the loans.

Railroad earnings for the last 5 years have varied from a low of 1.73 percent return on net investment in 1970 to 3.10 percent last year. (If the Penn Central figures are excluded, the earnings range from 3.05 percent to 4.03 percent.) By any standard, this rate of return is wholly inadequate. In dollars, net income during the same period ranges from a low of $226 million in 1970 to $542 million in 1973. Those figures look pathetically small in relation to the $3.6 billion a year which the ASTRO report showed was needed for annual capital investment. Indeed, they look pathetically small even in relation to the $1½ billion average capital investment which the industry actually achieved during this period.

The key to railroad earnings in the period ahead lies in an ability to adjust rates upward on a timely basis. Our national transportation policy must rec-

ognize that the railroads are an essential national asset, that their ability to provide service depends on adequate earnings, and that past levels of earnings are wholly inadequate. Our national transportation policy must have as one of its major goals the development of a financially healthy railroad industry. We can no longer afford to use railroad rate regulation as an instrument of national policy for achieving other Government goals as we have done so often in the past. Rate (regulation price , if you will) in both its substantive decisions and in the timeliness of the rate relief granted must be used to protect and expand the earning power of the railroad industry.

Let me give you an example of just what I am talking about. This very afternoon, the Environmental Subcommittee of the Senate Committee on Commerce is considering a committee print of the Resource Conservation and Energy Recovery Act of 1974 in which there is a clear attempt to use the rail freight rate structure as an instrument to carry out certain goals of the Congress with respect to the encouragement of the use of recovered or recyclable materials. Section 4 of that bill, dealing with transportation rates for recovered materials starts with the presumption by Congress that the present level of rates on such materials are unlawful and must be changed in order to promote their movement. This is without any evidence or investigation by the expert regulatory body. The bill then proceeds to set up a special set of procedural rules which would make it next to impossible for carriers to raise rates on these materials regardless of justification or need.

Here is a clear case where the Congress, which has set forth a general rule of nondiscrimination in the rate treatment of all commodities, would now set forth a special set of rules of preference for, and discrimination in favor of, a particular group of commodities. The mechanism to be used, moreover, would be one of selective price control.

Why do we think always of controlling transportation prices and not the prices of the commodity to be transported? Because the latter doesn't work, but we assume the former will?

I submit we have come to the end of the road in our attempts to use the control of railroad prices for any larger economic purpose. There is no blood left in that turnip. Price controls have to be made to work for the railroads, not against them; or we will not have any railroads left to do our transportation job.

In this connection, it is worth noting that the U.S. railroads receive a relatively small share of the dollars expended fr intercity freight transportation in this country. They now collect in gross freight revenues about 23 percent of the total dllars spent for intercity freight transportation. The trucks collect 68 percent of the dollars so spent—30 percent going o regulated trucking and 38 percent going to unregulated trucking—or three times what the railroads collect. The aggregate freight charges collected by the railroads thus have a much smaller impact on the U.S. economy than do the freight charges of our intercity trucking industry. Railroad charges also have a much smaller impact on the U.S. economy than railroad charges did when most of our regulatory policies were developed around the turn of the century, a time when rail freight took eight times as big a bite out of our GNP as they do today.

In a period when the demand for freight service is as strong as it is now, one tends to forget the impact on railroad earnings that competition can have. Truck and water competition can prevent railroads from charging rates which adequately cover railroad costs; and truck and water competition can divert traffic from the railroads, thus reducing gross revenues. We do not suggest that the railroads should be insulated from the forces of the marketplace or that truck and water carriers should be prevented from competing with the railroads on equal terms. It can no longer be assumed, however, that the mighty railroad industry is impervious to the inroads of other forms of transportation as once appeared to be the case. Because of the Nation's massive, modern highway system and because of the complicated system of waterways, often built at Government expense, the railroad industry is in a fight for survival.

If we want the railroads to be able to play their role in our transportation future, then our national transportation policy must be set down as a basic tenet the proposition that each form of transportation should pay for what it receives from the Government. Furthermore, since common carrier service is the backbone of our transportation system, the difficult problem of the impact on all common carriers of the unregulated half of the transportation industry must be faced and resolved.

In years past, it has also been national policy to rely on the railroad industry to provide noncompensatory services which were deemed to serve a social need. The railroad passenger business is a prime example. From 1945 until 1970 when Amtrak began operations, the railroads incurred losses in passenger service aggregating some $10 billions. Similarly, the railroads have been required to operate many miles of branch lines at a loss. In recent years there has been a disposition on the part of Congress to depart from policies of this sort, as is evidenced by the creation of Amtrak and by the branch line subsidy program included in the Regional Railroad Reorganization Act of 1973.

If the railroads are to play their appropriate role in our transportations future, this trend must continue. The railroads must be relieved of the burden of rendering uneconomic service, just as I have already pointed out they must be relieved of the burden of uneconomic rates imposed by price controls. (Indeed, it is hoped that some day Congress will see fit to require that Amtrak compensate the railroads fully for the services which the railroads provide.)

Another aspect of national transportation policy relates to technology. Many facets of railroad technology were developed in the last century before the Federal Government became deeply committed to research. However, air technology came into focus as a result of its required development for defense. Similarly our improved highway technology was developed by State and Federal funds.

A conservative estimate of the public investment in transportation research for fiscal year 1974 is as follows:

Air:	
FAA	$85,000,000
DOD (applicable to civil aviation) (estimated)	200,000,000
NASA (estimated)	35,000,000
Highway:	
Federal highway and highway safety	52,600,000
State programs (estimated)	10,000,000
Rail:[1] FRA	8,000,000

[1] An additional allocation of $12,300,000 applies to high-speed ground transportation of which an undetermined fraction is also applicable to railroad research.

The railroad industry and its suppliers are pursuing an active research program. An expanded Federal role in research on railroad problems is essential, however, to insure that railroad technology is advanced at a rate consistent with the public interest in more efficient transportation services. These advances in technology will be required, in fact, if the railroads are to meet the demand for rail service that lies ahead.

Interim Federal financial assistance may also be needed to get the railroad industry over the especially difficult years just ahead. The many years of depressed earnings have left our railroad companies short of money for everything: new freight cars, modernized terminals, rehabilitated track, and working capital. They need help just to get hold of their own bootstraps.

The railroads are no longer the almost exclusive source of intercity freight and passenger service they once were. The railroads are no longer the Nation's only big businesses as they once were. Nevertheless, far from being an anachronism, the railroad industry has a vital role in play in our transportation future.

It follows that our national transportation policy should have as a major goal the development of a strong, healthy railroad industry prepared to meet the Nation's need for efficient intercity railroad service.

COMMENTS ON THE STATEMENT OF THE SECRETARY

Mr. McFall. Thank you, Mr. Ailes.

Have you had an opportunity to see the Secretary's statement which he gave yesterday?

Mr. Ailes. Yes, sir. I have read it briefly, some of our people have worked on it.

Mr. McFall. We would like to have your comments to put in the record concerning that statement if you have any.

Mr. Ailes. All right, sir.

Mr. McFall. It would give us an opportunity to have your association's opinion of what he has said.

Mr. Ailes. We would be glad to do that. It would be better if we did it that way than if I just sat here and commented on it casually.

I must say that the industry does appreciate the interest which the Department, under Secretary Brinegar, has in the railroad problem, which figures prominently in his statement. Much of what he has to say on that subject we agree with totally.

Mr. McFall. Thank you very much, Mr. Ailes. We appreciate your coming.

[Mr. Ailes' comments on the statement follow:]

Association of American Railroads,
Washington, D.C., March 8, 1974.

Hon. John J. McFall,
Chairman, Subcommittee on Transportation,
House of Representatives,
Washington, D.C.

Dear Mr. Chairman: As you requested during my appearance before your subcommittee on March 6, I have reviewed the statement on national transportation policy submitted to you by Secretary Brinegar, and appreciate the opportunity to comment on that statement insofar as it deals with the railroads.

Secretary Brinegar's statements (on pp. 28–32) about the present condition and circumstances of the railroads are quite correct. The physical and financial condition of the railroad industry is indeed steadily deteriorating. The problems referred to by the Secretary will get worse unless we move with resolution to make them better.

We find the Secretary's statement of policy elements (pp. 45) basically sound. We would only add emphasis and make two or three points which are of special importance to the future health of our railroad system.

Secretary Brinegar properly mentions user charges for publically-provided facilities (p. 46). The need for adjusting highway user charges to eliminate the long-standing apparent subsidy to heavy trucks is also clear.

In reassessing our present patterns of regulation (pp. 46–47), the growing problems created by the erosion of our common carrier system by private carriage and the need for finding new ways to deal with that problem should also be reviewed.

In connection with Federal research and development (pp. 48–49), we would emphasize the crucial role Federal money plays in the basic research end of the R. & D. spectrum. More basic research into a host of rail technology problems is crucial to the future viability of our railroad system.

Please accept my thanks again for the opportunity to appear before your subcommittee. We stand ready to do anything we can to assist you further.

Sincerely yours,

Stephen Ailes.

STATEMENT OF HIGHWAY USERS FEDERATION

Mr. McFall. The committee has received a letter from Mr. D. Grant Mickle, president of the Highway Users Federation concerning national transportation policy which will be inserted at this point.

(The letter follows:)

Highway Users Federation
for Safety and Mobility,
March 6, 1974.

Hon. John J. McFall,
Chairman, Transportation Subcommittee, Committee on Appropriations, U.S. House of Representatives, Washington, D.C.

Dear Mr. Chairman: You and the Transportation Appropriations Subcommittee are to be commended for holding hearings on a national transportation policy at this time. We appreciate the opportunity to present our views.

The membership of the Highway Users Federation includes 600 national businesses and trade groups. We have affiliates in every State and 32 metropolitan areas. Together, they comprise more than 4,000 State and local organizations.

We are primarily interested in matters related to roads, streets, and the people who depend upon them. However, we want to make clear that this is so vast an interest that it cannot be disassociated from the total public interest.

In that context, we offer these comments on what we believe should be the aims of a national transportation policy and some suggestions of issues to which we think such a policy should be addressed.

From its settlement, through rural development, industrialization and the present striving for greater humanization, this Nation always has held mobility to be a fundamental freedom. Transportation is the means whereby that freedom is won and preserved.

A national policy should spell out and make clearly visible the extent to which transportation threads all American life. It should emphasize transportation's strong and positive social and economic implications.

In a speech which you asked to have included in the Congressional Record, Congressman Brock Adams said: "When a geographic area in the United States is cut off from transportation of persons and freight at a fair rate, that community will surely die from economic strangulation."

In other words, transportation vitally affects our lives and livelihoods. A national policy should insist that transportation be given its proper weight in decisions related to energy, the environment and land use, among other areas which are affected by it and which affect it.

The fact that Congress and other officials are making many decisions in these areas today emphasizes the importance and timeliness of developing a national transportation policy.

Without a basic statement of policy, transportation is at the mercy of other fields of interest where policy is established. Thus, transportation development must respond to the priorities of other programs; other programs do not have to account for their impact on transportation.

There are, of course, national policies directed to individual transportation modes as, for example, in various Congressional Acts concerning highway, rail, air and water transport. But our transportation needs for now and the early years ahead are so huge and complex that coordination and overall planning are essential.

A national transportation policy should clarify the federal role when decisions are to be made among the different modes. In this connection, Congressional intent should be stated regarding the extent to which efficiency and economy of transport services should be overriding concerns, and how much weight should be assigned to other considerations that may be in the national interest. Among such considerations are our growing population, the desire of the American people constantly to improve their living standards, the demonstrated preference of many for suburban life, and the need to upgrade economic opportunities in rural areas.

A list of values should be formulated for judging transportation proposals. Service goals should be defined and criteria devised for measuring progress toward their accomplishment.

Among other matters in which the Federal Government has a legitimate interest and in which its role should be made clear are:

1. Helping to make available to all citizens an acceptable level of transportation service which takes into account the differences among States and the variations in size (both as to population and geography) among localities.
2. Assuring a mechanism for solving interstate problems.
3. Coordination and support of long-range research and development for all the transportation modes we now have and for those we hope will soon be in being.
4. Ensuring coordination of transportation planning, development and use among public agencies and privately-owned travel modes.
5. Providing opportunities for citizen participation in decision making.

A national transportation policy should make it possible to bring into focus all the factors when transportation decisions are to be made. As we have indicated throughout this letter, these factors run the gamut of America's present and future lifestyle—and, indeed, its very life. They include our economic health and well-being, energy, the environment, employment, downtown and suburban growth and personal freedom.

Such a policy also should point to the importance of informing the public—by such means as these committee hearings—of the range of decisions involved in transportation and the penalties that would follow a failure to protect and enhance the Nation's mobility.

Transportation is far too vital to this country's interest for us to go on much longer without the guidance of a national policy. It has been suggested that a national energy policy—if developed many years ago—might have spared us and perhaps other nations, as well, some of today's trauma.

As you told the Congress last November, "We must push on with this task."

Sincerely,

D. GRANT MICKLE.

STATEMENT OF THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE

Mr. MCFALL. The committee has received a letter from Mr. A. E. Leitherer, President of the National Industrial Traffic League concerning National Transportation Policy. It will be inserted in the record at this point.

[The letter follows:]

THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE,
110 N. WACKER DRIVE,
Chicago, Ill., March 11, 1974.

Hon. JOHN J. MCFALL,
Chairman, Transportation Subcommittee, House Committee on Appropriations, U.S. House of Representatives, Washington, D.C.

DEAR CHAIRMAN MCFALL: Your Subcommittee held a hearing March 5, on Secretary Brinegar's report on a national transportation policy. Testimony was subsequently received by the Subcommittee on March 6, from public witnesses and individual congressmen.

Although The National Industrial Traffic League did not request an opportunity to testify on this important subject, we would like to submit the following letter/statement with respect to a national transportation policy.

The Naional Industrial Traffic League is a voluntary organization of shippers, groups and associations of shippers, etc., located throughout the United States. The members of the league conduct industrial and commercial enterprises of all types—large, medium and small. They utilize all modes of transportation. The league has been in continuous existence for over 65 years. During this time the league has frequently appeared before Congressional Committees and has also participated in major proceedings pertaining to transportation before the agencies and the courts. Neither carriers nor their representatives ae eligible for membership in the League.

The League has at times set forth its views as to overall transportation policies in statements so broad as to require their statement apart from more specific enactments; for example the following:

> "The league resolves 'that Congress should declare that the national transportation policy is to preserve and promote private ownership and operation of all forms of transportation; to preserve the inherent advantages of each; to promote safe, economical and efficient service; to encourage competition and the establishment and maintenance of reasonable charges for transportation services, without unjust discriminations, undue preferences or advantages, or unfair competitive practices, all to the end of insuring the development and preservation of national transportation service adequate at all times to meet economically and efficiently the full needs of the commerce of the United States.'"

The following language was adopted by the league as a recommended preamble to the Interstate Commerce Act:

> "It is hereby declared to be the national transportation policy of the Congress—
>
> > "(1) to provide for and develop, under the free enterprise system of dynamic competition, a strong, efficient and financially sound national transportation industry by water, highway, and rail, as well as other means, which will at all times, remain fully adequate for national defense, the postal service, and commerce;

"(2) to encourage competition between modes of transportation as well as among carriers of each mode at charges not less than reasonable minimum charges, nor more than reasonable maximum charges, so as to encourage technical innovations, the development of new rate and service techniques, and the increase of operating and managerial efficiency, and the highest standards of service, safety, economy, efficiency, and benefit to the transportation user and the ultimate consumer, but without unjust discrimination, undue preference or advantage, or undue prejudice, and without excessive or unreasonable charges on any traffic;

"(3) to cooperate with the several States and the duly authorized officials thereof;

"(4) to reduce economic regulation of the transportation industry to the minimum consistent with the public interest and to the end that the inherent economic advantages, including cost and service advantages, of each mode of transportation may be fully realized in such a manner so as to reflect its full competitive economic capabilities; and

"(5) to require that such minimum economic regulation be fair and impartial, without special restrictions, conditions, or limitations on individual modes of transport.

"The foregoing Declaration of National Transportation Policy does not confer any authority or impose any restriction on the Commission which are not provided in the substantive provisions of the act and is to be used solely as a statement of congressional intention for guidance in the interpretation, administration and enforcement of the act."

Specific policies of the league are outlined in the enclosed pamphlet entitled "Transportation Policies". It is our hope that the above-suggested National Transportation Policy will be of some assistance to your subcommittee. We would appreciate having this statement included in the hearings on this subject.

Respectfully submitted.

A. E. LEITHERER,
President.

STATEMENT BY NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

Mr. MCFALL. The committee has received a Statement from the National Association of State Aviation Officials which will be inserted in the record at this point.

[The statement follows:]

STATEMENT BY NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

NATIONAL TRANSPORTATION POLICY

The National Association of State Aviation Officials (NASAO) appreciates the opportunity to submit this statement on behalf of its 48-member State aviation agencies. Twenty-four of these agencies have recently been merged into State departments of transportation, and this trend is continuing. Consequently, NASAO is well aware of the lack of coherent national transportation policy, which can be used as a guide for State transportation policy, and agrees with those who urge immediate executive and congressional action. It is long overdue. However, as is suggested by Secretary of Transportation Brinegar's excellent assessment of the many factors involved, the many existing acts dealing with transportation and the multiplicity of regulatory agencies involved, make this no easy task to achieve. As Mr. Brinegar also pointed out—

(*a*) Significant advances in Federal policy require agreement between the legislative and executive branches; and

(*b*) "The mixed public-private nature of our economy and the division of governmental responsibilities at Federal, State, and local levels make it impossible to identify any one group as being totally or even mainly responsible for transportation decisions."

Thus, if a national transportation policy is to be adopted and in fact followed by the many sectors involved with its implementation, then there must be a meeting of minds as to the overall national goals the United States wishes to achieve and the transportation policy that will best serve to meet these goals.

Transportation is not an end unto itself—it merely serves to achieve the economic and social goals of our Nation's population.

Congressman Brock Adams quoted figures of $93.5 billion spent on programs relating to automobile travel versus $13 billion spent to transport the public on our airlines, buses, trains, and transit lines. The long lead that highways has over other modes may be due in part to a strong Federal/State partnership which the Congress wisely built into the Federal Highway Act, which was omitted from the original Federal Aid Airport Act and again in the Airport/Airway Development Act.

NASAO feels the Federal/State relationship must be an integral part of transportation policy, for the success of the policy will depend largely on its implementation by State and local governments whose citizens will be affected by such policy, and who are responsible for transportation's compatibility with other land uses.

It is significant that all but two, Washington National and Dulles, of the public civil airports in the national system are owned, developed, and operated by the States and their political subdivisions. The laws creating State aviation agencies charge them with the responsibility not only for developing statewide airport system plans and the implementation of those plans, but also for the establishment of State airway systems, insuring the safety of air operations within the State and, to some extent, the regulation of intrastate air carriers and other forms of aviation activity.

In fiscal year 1972, the latest year for which statistics are immediately available, the State agencies made available $219 million for just airport development, and of that amount spent $121 million to either help match Federal funding of airport projects, or to financially contribute to State/local projects without benefit of Federal funds. State/local projects are often undertaken to avoid excessively high costs and time-consuming paperwork associated with Federal funding.

In this connection, the Federal Aviation Administration is presently studying several programs which might be administered by States while still being under general control and coordination of the Federal Government to assure the desired degree of uniformity and standardization.

NASAO believes that many of the programs associated with the ground facilities needed for the air transportation system can be carried out more efficiently and more economically by the States, as the Federal highway program has been handled by the States.

However, the Airport/Airway Revenue Act has preempted to a great extent the taxes and fees (aviation fuel and aircraft registration) which States normally rely upon to produce revenue for airport facilities, so NASAO has proposed a return to the States of a percentage of revenues placed in the Airport/Airway Trust Fund (see copy attached). This proposal has been endorsed by the National Governors' Conference, Council of State Governments and the National Legislative Conference.

The National Association of State Aviation Officials and its member agencies offer both the House Appropriations Transportation Subcommittee and the Department of Transportation such services as they may be able to provide in the preparation of a national transportation policy.

STATEMENT OF AIR LINE PILOTS ASSOCIATION

Mr. McFall. The committee has received a statement from the Air Line Pilots Association which will be inserted in the record at this point.

[The statement follows:]

STATEMENT OF CAPT. JOHN J. O'DONNELL, PRESIDENT, AIR LINE PILOTS ASSOCIATION CONCERNING THE NATIONAL TRANSPORTATION POLICY

Mr. Chairman, I am Capt. John J. O'Donnell, president of the Air Line Pilots Association. In this capacity, I represent the professional interests of 46,000 pilots and flight attendants of the Nation's airlines.

We appreciate the opportunity to make a statement concerning our views about the future of transportation in this country. As the committee well knows, the lack of well-established goals in this vital segment of the national economy is causing chaotic traffic conditions in our cities, lack of efficiency in the distribution of manufactured goods and wasted resources.

Despite the best intentions of the Congress and the hopes of the people they represent, the Department of Transportation has been unable to enunciate a national policy thus far which would give every American the advantage of a truly integrated transportation system.

The professional flight crews of the United States scheduled and supplemental airlines are especially aware of what happens when an industry is allowed to grow and function without adequate planning goals. We have been victims of the many ups and downs of our industry which has had a long history of mismanagement, misguided regulation and misplaced emphasis. We now have hundreds of flight crew members out of work due solely to the energy crisis. We have many others still furloughed from the recession suffered by the airlines in 1970–71. A major share of the blame for these layoffs must go to the Federal Government for allowing a major industry to develop unhampered by the experience of the past and proceeding without a flight plan for the future.

Nowhere is the lack of national policy so evident and is guidance so needed as in the field of air safety. It comes as a surprise to many innocent passengers to learn that they are subjected to two different levels of safety when they buy their tickets. The trunk and regional carriers operate on one level and the air taxis operate on another. If proof is needed as to which is the lower level, a quick glance at the overall air taxi safety record will suffice. Another glance at the differing regulations and standards for both types of operations will tell why.

As participants in one of the major modes of transportation, we must express our concern that the Federal Government does not seem to appreciate the true value of aviation to the national interest and welfare. We feel that aviation, especially commercial aviation, is largely neglected when it comes to planning ahead. Too much emphasis seems to be placed on ground transportation even though aviation is now the principal mode for priority transportation of people and goods, especially over long distances. The Department of Transportation is infected with the iron wheel syndrome while aviation still seems to be considered a luxury that we can all do without when push comes to shove.

As in all failures of government, it is the people who suffer eventually. So it is in air transportation. Lack of a clear, viable national policy to guide the nation toward definite goals has caused a warping of the airline industry's economic structure. The Civil Aeronautics Board, for example, has historically placed its emphasis on profits for the airlines and has neglected the public interest in so doing. Under the guise of the fuel crisis, in recent months the Board has upset the balance of route structures and curtailed or eliminated service to low density airports. When communities lose this means of travel, they suffer economically and their growth is stunted or ceases, especially when fuel is short for ground transportation. Thus, small communities are hurting because there is no real policy to guide the CAB other than the bottom line of each airline's profit-and-loss statement.

In summary, Mr. Chairman, we wish to go on record for our organization as favoring your efforts to articulate national transportation goals for all modes of transportation. We heartily endorse your stated desire to "pull together the fragmented transportation modes in order that they might function in a coordinated fashion." And we fully concur that the type of coordination needed "will not come into being until an integrated transportation has been developed." We stand ready to cooperate with this committee any way we can to assist in this essential task.

STATEMENT OF THE TRINITY IMPROVEMENT ASSOCIATION

Mr. McFall. The committee has received a statement from Mr. Amon G. Carter, Jr., chairman of the Trinity Improvement Association. It will be inserted in the record at this point.

[The statement follows:]

Mr. Chairman, members of this Committee, I am Amon G. Carter, Jr., owner and publisher of the Fort Worth Star-Telegram and owner of WBAP-AM-FM-TV in Fort Worth, Texas.

Today I am representing the Trinity Improvement Association, a citizens organization with a membership of 10,000 which is dedicated to the wise development of the water resources within the Trinity River Basin in Texas. I am Chairman of the Executive Committee of the Trinity Improvement Association.

I wish to compliment the Congress for the steps it is taking to establish a National Transportation Policy. In our opinion, the establishment of such a policy is long overdue. The welfare of our nation depends on a well-coordinated transportation system, a system that utilizes to maximum efficiency all modes of transportation, truck, rail, air and ship and barge. It appears obvious that efficient use of our transportation systems, especially important in view of today's energy crisis, cannot be accomplished without a comprehensive National Transportation Policy.

As you consider the formulation of such a policy, the Trinity Improvement Association urges the Congress to give considerable attention to the important role our inland waterways play in our country's total transportation picture. Our nation's inland waterways have been major carriers of raw materials and finished products, and have contributed significantly to the economic and social well-being of the United States since our country was founded nearly 200 years ago.

We are all greatly concerned over the energy shortage we are facing. Undoubtedly, our transportation system is a vital link in the energy picture and will figure significantly in any solution to the energy crisis. Not only are our transportation modes among our major energy consumers, but they are also the movers of energy producing products and materials.

In 1972, commerce on our nation's inland waterways totalled some 597,255,377 tons, an increase of some 6.25 percent over 1971. This was more than 16 percent of the total freight traffic in the United States. (Exhibit 1 attached) For the past several years the amount of freight carried on the inland waterway system has shown continuous growth, and every waterway in the United States has far exceeded its anticipated potential.

The Gulf Intracoastal Waterway in 1972 carried some 109 million tons of cargo, but when authorized it was felt it might ultimately carry 5 million tons. The Tennessee River Waterway in 1972 carried some 28.5 million tons of freight, more than 5 times the original estimate. Already the Arkansas River Waterway has exceeded its anticipated usage. Similar stories are true about the other waterways in the Nation.

Among the principal commodities carried on the inland waterway system are energy producing resources. For example, in 1972, waterways carried:

1. 122,222,627 tons of bituminous coal and lignite.
2. 64,022,750 tons of crude petroleum.
3. 2,243,730 tons of crude tar, oil and gas products.
4. 43,103,967 tons of gasoline.
5. 6,647,505 tons of jet fuel.
6. 2,889,450 tons of kerosene.
7. 35,800,664 tons of distillate fuel oil.
8. 62,789,233 tons of residual fuel oil.

These are just a few of the commodities carried by the Waterways that are essential to the production of energy. Exhibit 2 attached gives a more detailed list of the products carried by the Waterway system, all of which, are vital to the continued prosperity of our nation's economy.

It has long been known that water transportation is the least expensive form of transportation. The average cost of barge transportation is three mills per ton mile. For one dollar, a shipper can move one ton of freight 333.3 miles by barge, 66.6 miles by rail, 15.4 miles by truck, or 5.0 miles by air.

What is not so well known is the energy efficiency of waterway transportation. To move 1,000 ton-miles of freight requires 3.15 gallons for barge transportation, 4.21 gallons by rail, and 8.33 gallons by truck. Dr. William Mooz of the Rand Corporation estimates that to move one ton-mile of freight requires the following energy:

·500 BTU's for waterway transportation
750 BTU's for rail transportation
1850 BTU's for pipeline transportation
2400 BTU's for truck transportation
6300 BTU's for air transportation (Exhibit 3 attached)

Secretary of Transportation, Claude Brinegar, testifying before the Transportation Subcommittee of the House Appropriations Committee early in March, stated that one gallon of fuel would move 300 ton-miles of freight by water, 180 ton-miles of freight by rail, and 50 ton-miles by truck. Even though extensive surveys indicated that the fuel efficiency of waterways is even greater than Secretary Brinegar testified, the fact remains that water transportation is the most efficient mode of transportation in our country today.

Another major concern of our transportation system is its effects on our environment. A report of the Engineering Committee of the International Association of Great Lake Ports states, "It has been stated that modes of transportation account for more than half of the 184 billion gallons of petroleum consumed in the United States. At a time when the overall energy supply and demand system is coming under ever-sharper scrutiny, it is wise to compare the consumption of fuel and subsequent pollution emission on a ton-mile per gallon basis, relative to the shipment of goods be either truck, train or ship...Research produced by the Canadian National Railways has shown that 1,000 pounds of diesel fuel produces 578 cubic feet of major pollutants, composed of carbon monoxide- 123 cubic feet, oxides of nitrogen- 337 cubic feet, aldehydes-12 cubic feet, sulphur dioxide- 12 cubic feet and hydrocarbons- 93 cubic feet. A comparison of the emissions produced by railroad freight, diesel trucks and ships resulting from the transporting of one million tons of cargo show that 7,400,000 cubic feet of emissions would be produced by freight trains, 26,500,000 cubic feet by diesel trucks and only 5,600,000 cubic feet by ships. These results show that ships produce 33 percent less pollutants than diesel trains and 383 percent less than diesel trucks, when compared on a basis of ton-miles per gallon of fuel consumed." So, it appears that not only does water transportation consume less fuel, but it also is less polluting.

Of equal importance is the tremendous role water transportation and our inland waterways system has played in the development of the economic and social well-being of our country. Since the development of the Tennessee River began some 40 years ago, over 6,000 new industries has been created with jobs for 800,000 persons. Per capita income has risen from $168 a year to $3,365 annually. Development of the Tennessee River has transformed an economically depressed region into a vital, producing segment of our society. There is no one who can dispute the tremendous improvements in the standard of living that have been experienced by every person in the Tennessee Valley as a result of the development of that

river. A great portion of that economic growth is directly attributed to the presence of water transportation.

Similar gains are evident along every river where water transportation has been made available. In the Ohio Valley, a total investment of nearly $37-billion dollars in major plant construction and expansion projects has been made from 1950 to 1970 in counties bordering the Ohio River and its navigable tributaries. The records of American Waterways Operators, Inc., show the construction or expansion of 8,742 plants, terminals, industrial parks and port districts at water-oriented locations throughout the nation from 1952 to 1972.

The recently completed McClellan-Kerr Arkansas River Waterway in Arkansas and Oklahoma has already produced significant gains. In Arkansas, figures compiled in April, 1972, showed the announcements of new industrial plants up to that time represented an investment of $587,855,000 since the opening of the modernized channel. These plants would provide employment for 10,435 persons. Expansion of existing industries in the state represented an investment of $28,550,000 and provided 2,925 new jobs.

For Oklahoma, announced new industries represented an investment of $241,100,000 and the expansion of existing industries represented a total investment value of $149,025,000. These figures for the two states represent announcements made since 1968, and include only industries locating in the vicinity of the navigation route, or which cited water transportation as a factor. They do not include other developments which obviously are related to water transportation.

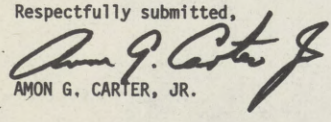
The facts stated previously are only examples of the tremendous impact water transportation has made on the economy of our nation, and emphasize the important role water plays in the transportation of materials and products. In light of the facts, it would appear logical that water transportation should be called upon to shoulder an even greater workload. However, there are those in the Administration, the Water Resources Council and the Congress that want to curtail the use of commercial waterways by imposition of some form of user charge. It is a recognized fact that user charges would, in effect, close down some of our waterways and reduce activity on others. It seems that we should be working to expand the role of waterways rather than reducing their scope.

Undoubtedly, our country's transportation system is going to play a major role in the future well-being of the nation. To be most effective, our transportation system should utilize each mode to its maximum capability, and this includes waterway transportation. Instead of curtailing its role, waterways should be developed where feasible and those in operation should be modernized and maintained to their optimum. Rather than delay upon delay in getting these projects started and built, they should be expedited.

One such program is the project to make the Trinity River navigable from the Gulf of Mexico to Dallas/Fort Worth. The Trinity River can be another vital link in our nation's transportation system. Undoubtedly, it will be a boost for the economy of the Trinity River Valley and Texas, but it also will be a significant contribution to the nation's well-being. It will be another step in the long range solution to our energy shortages and national economic stabilization.

I would urge that you and the members of the Congress consider the tremendous role our water transportation system plays in our nation. I would also urge that you work to maintain its status by opposing measures that would curtail the use of water transportation and ensure that the waterways are given their rightful place in any future National Transportation Policy.

Respectfully submitted,



AMON G. CARTER, JR.

EXHIBIT 1

FREIGHT TRAFFIC IN THE UNITED STATES BY RAILWAYS, MOTOR TRUCKS, GREAT LAKES, INLAND WATERWAYS AND PIPELINES, CALENDAR YEARS 1968, 1969, 1970, 1971 AND 1972 AND PERCENTAGES OF TOTAL

		RAILWAYS		MOTOR TRUCKS 1/		GREAT LAKES		INLAND WATERWAYS		PIPELINES	
		NET TONS IN MILLIONS									
Year	Total	Net Tons	% of Total	Net Tons	% of Total	Net Tons	% of Total	Net Tons	% of Total	Net Tons	% of Total
1968	3,352	1,431	42.7	523	15.6	151	4.5	521	15.5	726	21.7
1969	3,550	1,473	41.5	608	17.1	161	4.5	548	15.4	760	21.4
1970	3,581	1,485	41.5	596	16.6	157	4.4	553	15.4	790	22.1
1971	3,486	1,391	39.9	*625	17.9	141	4.0	560	16.0	806	23.1
1972	3,687	1,447	39.2	654	17.7	145	3.9	597	16.1	**859	23.3
		TON-MILES IN BILLIONS									
Year	Total	Ton Miles	% of Total	Ton Miles	% of Total	Ton Miles	% of Total	Ton Miles	% of Total	Ton Miles	% of Total
1968	1,835	757	41.3	396	21.5	112	6.1	179	9.8	391	21.3
1969	1,892	774	40.9	404	21.4	115	6.1	188	9.9	411	21.7
1970	1,932	771	39.9	412	21.3	114	5.9	204	10.6	431	22.3
1971	1,924	744	38.7	445	23.1	105	5.5	210	10.9	444	23.1
1972	2,054	788	37.6	470	22.4	109	5.2	230	11.0	457	21.8

1/ Tons of revenue freight carried in intercity service by Class I and II carriers

Source: ANNUAL REPORTS, TRANSPORT ECONOMICS and TRANSPORT STATISTICS IN THE UNITED STATES published by the Interstate Commerce Commission

* Revised
** Estimated

OF THE UNITED [illegible]
IN NET TONS OF 2,000 POUNDS
CALENDAR YEARS 1971 AND 1972

Commodity	1971	1972
Grain and grain products	19,076,654	26,579,143
Soybeans	8,616,110	8,980,228
Fresh fish and shellfish	1,559,125	1,572,044
Marine shells, unmanufactured	18,306,778	18,197,094
Iron ore and concentrates	2,896,679	3,938,913
Manganese ores and concentrates	1,354,905	1,051,237
Bituminous coal and lignite	109,528,828	122,222,627
Crude petroleum	57,763,253	64,022,750
Limestone	2,505,364	2,103,400
Building stone, unworked	762,791	706,176
Sand, gravel and crushed rock	75,445,355	73,095,988
Clay	1,717,831	1,445,727
Sulphur, dry and liquid	5,070,740	5,213,669
Nonmetallic minerals, n.e.c.	5,306,682	5,437,275
Sugar	898,688	979,601
Molasses	949,911	943,873
Rafted logs	16,298,402	15,310,006
Pulpwood, log	1,799,742	1,847,885
Lumber and lumber products	1,680,748	1,975,423
Paper and paper products	1,503,582	1,516,258
Sodium hydroxide	3,044,835	3,466,914
Crude tar, oil, gas products	2,084,831	2,243,730
Alcohols	2,031,780	2,623,966
Sulphuric acid	3,283,829	3,308,420
Benzene and toluene	2,193,120	3,081,860
Basic chemicals and products, n.e.c.	13,186,780	13,511,699
Fertilizer and fertilizer materials	6,058,057	6,874,641
Miscellaneous chemical products	646,466	758,373
Gasoline	44,202,358	43,103,967
Jet fuel	6,711,032	6,647,505
Kerosene	2,619,877	2,889,450
Distillate fuel oil	32,137,328	35,810,664
Residual fuel oil	56,737,249	62,789,233
Lubricating oils and greases	1,863,945	1,978,102
Naphtha petroleum solvents	1,360,524	1,403,013
Asphalt tar and pitches	4,945,739	4,896,642
Coke, petroleum coke	905,309	1,097,088
Liquefied gases	894,679	1,340,732
Other petroleum and coal products	1,325,055	1,419,465
Building cement	4,533,439	4,744,387
Iron and steel products	6,762,791	7,225,856
Iron and steel scrap	1,240,573	1,380,914
Total - principal commodities	531,811,764	569,735,938
All other commodities	28,658,653	27,519,399
GRAND TOTAL	560,470,417	597,255,337

Data on fuel consumption efficiency:

*To move 1,000 ton-miles of freight requires the following fuel:

3.15 gallons for barge transportation
4.21 gallons for rail transportation
8.33 gallons for truck transportation

Source: Braxton B. Carr, President, The American Waterways Operators, Inc., Washington, D.C., February 9, 1973

*To move one ton-mile of freight requires the following energy:

500 BTU's for waterway transportation
750 BTU's for rail transportation
1850 BTU's for pipeline transportation
2400 BTU's for truck transportation
6300 BTU's for air transportation

Source: Dr. William Mooz, Rand Corporation, Santa Monica, California

Data on cost efficiency:

*For $1.00, a shipper can move one ton of freight the following distances:

333.3 miles by river barge
66.6 miles by rail
15.4 miles by truck
5.0 miles by air

Source: Braxton B. Carr, see above

*On a cost basis, $1.00 will transport one ton of freight:

500 miles on a Great Lakes bulk carrier
369 miles via pipeline
303 miles on the inland waterways
140 miles on a unit train shuttle
70 miles on an ordinary rail movement
13 miles by truck

Source: John A. Creedy, President, Water Transportation Association, New York, New York, November 16, 1972

STATEMENT OF THE ASSOCIATED CONSTRUCTION PUBLICATIONS' TRANSPORTATION BETTERMENT COMMITTEE

Mr. McFALL. The committee has received a statement of the Associated Construction Publications' Transportation Betterment Committee. It will be inserted in the record at this point.

[The statement follows:]

STATEMENT OF THE ASSOCIATED CONSTRUCTION PUBLICATIONS' TRANSPORTATION BETTERMENT COMMITTEE

John Donne once wrote, "No man is an island unto himself. The death of any man diminishes me for I am a part of mankind. Therefore, send not to ask for whom the bell tolls, it tolls for thee."

There is probably no truth which has been brocght closer to our doorstep lately than the fact that we are not individually self-sufficient.

As we specialize to achieve efficiency, so are we also more greatly dependent on our fellow specialists.

Today, because of our specialization, transportation is our singularly most important need—for without it we cannot even eat or drink.

How then have we gotten into the transportation snarl in which we now find ourselves?

The answer is simple. We haven't spent enough money constantly upgrading our total transportation network, including rail, highway, mass transit, airways and waterways and in some instances we have shackled our capabilities with overregulation.

We should have had a total national transportation plan in this country 20 years ago. We don't have one yet.

This lack of a national transportation plan was supposed to be corrected by the creation of the Department of Transportation. So far the creation of DOT has done nothing to lead us into a total transportation scheme. If anything, we are in a worse posture now than we were before the creation of DOT.

While the President was establishing an agricultural policy calling for all-out food production to salvage the American dollar, DOT was recommending the eventual abandonment of 78,000 miles of rural rail lines (on top of 46,000 miles already abandoned) and concurrently recommending a massive reduction in the expenditure of moneys for rural roads.

A 10-year-old child could predict the result of such combined actions.

Some 1,000 pages of testimony was taken before the House Subcommittee on Transportation (of the Public Works Committee) prior to the writing of our present highway bill. The only testimony during those hearings which related rural rail abandonment and poor rural roads to skyrocketing food prices is that piece of testimony given by Mr. Graham and myself on behalf of our association.

Almost all of the testimony taken during both the House and Senate hearings on the 1973 Highway Act centered around the opening of the Highway Trust Fund for mass transit use.

In fact, there has developed over the past several years a raging debate centering around the either/or proposition of automobile versus mass transit. In our opinion the debate began, and grew because we have no national transportation policy. It has placed our legislative representatives, both local and national, in the untenable position of being wrong whichever side they support because the debate is only two-sided. The absent third side should have been the consideration of how to move our goods, especially our food.

Let me stress that the movement of goods, particularly agricultural products, has been almost totally overlooked during past debates.

Of course we need mass transit. And a few of our cities are large enough to justify rail mass transit. It is also likely that we need Federal mass transit subsidies. However, we would like to point out that transit subsidies *could* become the type of bottomless pit which the FHWA and DOT have avoided for years by not paying *any* moneys toward highway maintenance.

Nevertheless, a large part of our population is still—and will be for the foreseeable future—tied to some form of personal carrier similar to the automobile and which will travel over highways.

Having briefly commented on our Association's position on the automobile and

on mass transit, we would like to now discuss the missing third part of the argument—the proven inability to efficiently move our goods.

This failure cannot be solely blamed on truckers or railroaders. In large measure this failure rests squarely on the shoulders of the DOT and the ICC.

Our most recent booming inflation in this country started with the devaluation of the dollar in the early 1970's. We had no choice but to devalue the dollar because of our deficit balance of payments situation. For 2 years we as a nation purchased more from overseas than we sold abroad.

We were necessarily forced to turn to agriculture for the additional overseas sales required to once again swing the balance of payments back in favor of the United States.

Two years ago this country had 60 million acres of formerly productive, so-called set-aside farmland being held out of production. This acreage represented a tillable land mass the size of the State of Minnesota. In addition, the Government purchased and stored millions of bushels of agricultural commodities. These stored surpluses allowed us the luxury of being the only major Nation on Earth that was then living off of its previous year's harvest.

Few people noticed that our agricultural transportation plant was deteriorating. We were nowhere near maximum production, and any time supplies grew short at the marketplace the Government released some of its stored surpluses. Oh, we occasionally heard of "boxcar shortages" but no one really paid attention or seemed to care.

All during this time of relatively low agricultural production, we virtually ignored our rural transportation system and devoted our attention to the Interstate network and to our urban freeways.

We are not debating the building of those freeways. Certainly they were necessary. What we are attempting to point out is the human error of the funding formula which encouraged the neglect of our rural road system—especially in the light of 46,000 miles of rural rail abandonment.

It will take a massive infusion of dollars to bring our rural transportation facilities up to a level where we can efficiently achieve or handle the results of full agricultural production. We will have to double up to catch up in rural transportation.

Our poor rural transportation system is a major cause of skyrocketing food prices and greatly contributes to our overall inflation. This inflationary spiral is damaging economy and causing shortage after shortage. England is now providing us with a very good example of the economic chaos this kind of inflationary spiral can ultimately produce.

Another part of our transportation problem was inadvertently created by the Supreme Court's one-man-one-vote ruling which required the reapportionment of State and Federal legislative bodies. And no one can logically argue against the right of every individual to be equally represented.

In retrospect, however, the ruling has given the urban population a dominant voice in all our legislative matters. While being eminently fair, this ruling places a far greater requirement on the urban voter to be knowledgeable of rural affairs. When the urban voter is not knowledgeable of rural needs he places himself in the position of eventually destroying his own economic environment.

As an example, how many times have all of us driven a greater number of interstate miles to reach our destination just to avoid bad roads?

Historically we will go to great lengths to avoid a bad road—but the farmer cannot. He must use the only available road to receive his seed and fertilizer, to transport his crop and for the myriad of other tasks associated with farm life. The consequences of continual deterioration of rural roads is eventual economic disaster, not only for the farmer but for all of us.

But what about all of the other transportation steps between the farmer and the supermarket shelf?

It is our contention that the inadequate rural transportation system has been a major contributing factor in the rural to urban migration that has been so detrimental to our already overcrowded cities.

That this migration must be stopped is now becoming an increasingly popular subject for experts in all of the social fields, from psychiatry to law enforcement to social electronics.

If industry is to continue in—or move to—rural areas, its first requirement is good transportation. It is ridiculously obvious that as transportation in a given area deteriorates, the industry in that area has two choices: stay and face eco-

nomic bankruptcy or move. But a farm cannot be moved to better tranportation facilities. Good transportation must be provided all the way from the city to the farm.

In a major effort to stem migration to the cities, the Congress overwhelmingly passed the Rural Development Act of 1972.

In the official House democratic response to the President's recent State of the Union Message, Congressman Bill Alexander had this to say:

"In passing the Rural Development Act, Congress recognized that the needs in the countryside for development—for improvements of the quality of life of the people who live there, or who would like to live there, are as great as those in the metropolitan areas. Attempting to say which of these needs should be first attended to is akin to trying to solve the age old puzzle of which comes first—the chicken or the egg."

Concerning rural transportation, the House majority had this to say:

"In recent years, and particularly during 1973, the importance of being able to move food from the countryside producing areas to the hungry millions of the cities has begun to receive national recognition. The prod for this has been rising food costs. The reasons for the rises are complex and fall on many shoulders, least of all the farmers.

"The picture that I see, and millions like me who are familiar with the transportation systems of the countryside, is a chilling one. It is a picture of catastrophe in the food and fiber distribution system if the transportation policies proposed by the President and his administration come to reality.

"The Federal-aid highway system is composed of approximately 900,000 miles of roadways. There are strong indications that the administration will propose the dropping of up to 300,000 miles of that system. Since the establishment of the interstate highway program, the States have concentrated most of their Federal-aid funds on this superhighway network. The result has been the critical deterioration of the countryside roadway network.

"The comments of the 1972 National Transportation Report makes it amply clear that at least someone in DOT is aware of some of the rural road problems. Yet the administration has just proposed that the railroads be allowed to abandon at least 788,000 miles of track. Historically, abandonments have totaled approximately 46,000 miles—most of it in countryside areas. It is a good bet that this new proposal will see additional thousands of rail miles abandoned. But 'don't worry,' the administration says—the trucking and large industries will provide freight service to those areas which the railroads are allowed to abandon.

"I agree that there may be good cause for allowing the abandonment of some rail mileage. But, at this time, in view of the transportation network problems in the countryside areas, such precipitous action as is proposed by the administration sounds like Ned in the first reader on transportation.

"Why?

"First, vast regions of the food -and fiber-producing areas of the Nation simply do not have access to navigable streams on which the waterways industry can operate.

"Second, the roadways of countryside America were not built for taking the punishment which would be dealt out by the giant truck transports which would be required to move the agricultural products to railheads or riverports.

"Studies of the status of roadways in countryside America which have been completed since 1970 show this:

"There are 3,165,895 miles of rural roads, including those which are unpaved, paved but low loadbearing and those capable of carrying heavy loads. Of these roads, only 14.2 percent have been judged capable of carrying the heavy transports which the administration says would take up the slack in freight service created by allowing the railroads to carry out the rail abandonment for which they clamor.

"What does this mean to the heartland of America? Unless the Congress forces the administration to take another look at its shallow, short-sighted transportation proposals, it means the commitment to countryside development which we have enacted into law will be a stillborn dream. It means that the food and fiber industry of the Nation will be threatened with destruction because the machinery, the seeds, the fertilizer essential to production cannot get to the farms.

"What does this mean to the millions in New York, Washington, Chicago, Atlanta, Dallas, Los Angeles, and our other metropolitan areas? They will go hungry—or, if they can get food, the prices of 1973 will seem like a pleasant

dream." This concludes the quotations from the House majority's response by Congressman Alexander.

We would like to add here that the response just read was made shortly before the administration's UTAA and TIA proposals. These two proposals together offer rural America an even bleaker outlook than does the 1973 Highway Act as it is currently being administered by DOT.

In his February 13 message to Congress when he introduced UTAA (H.R. 12859) the President described it as "The largest single commitment by the Federal Government to metropolitan and rural transportation in our history." But is it? As we read UTAA, it provides 1.1 billion dollars in contract authority during each of the next 3 fiscal years for the rural, primary, and secondary road systems and permits the optional use of these funds for bus purchases.

The present highway act already authorizes $1.2 billion for primary and secondary rural roads in both fiscal 1975 and 1976—$100 million more annually than UTAA would provide—without any diversion for bus transit.

Explaining UTAA and the Transportation Improvement Act (TIA), the President said, "We have too long taken the transportation systems of rural America for granted. Often the social and economic needs of our rural citizens are left unfulfilled because of the lack of good public transportation. Expanded public transportation will be a key element in our program to assist rural community development."

This statement indicates, we believe, a lack of comprehension on the part of White House transportation advisors as to the basic economic and transportation needs of America's farmers. Improved bus service between rural communities and urban areas is probably desirable but it is hardly a priority consideration—an unfulfilled social or economic need for the Nation's farmers.

The immediate concern of our farmers is for the modern roads and bridges and rail lines which they must have to move heavy bulk commodities from farm through the various stages to ultimate marketplace. Many of these essential economic lifelines are anything but modern, or even adequate.

Perhaps the most deceptive part of the UTAA proposal would appear on the surface to be a simple "bookkeeping" change. In point of fact it will, if enacted, probably have greater detrimental impact on our rural highway system than the loss of the previously mentioned $100 million.

That change is the elimination of cities between 5,000 and 50,000 population from eligibility to receive urban system funds. These cities (under UTAA) would be transferred to the rural funding classification. That is, those streets within those cities which are now on the Federal-aid urban system would have to depend exclusively on those rural funds formerly reserved only for rural roads.

This would, of course, further dilute the already pitifully small moneys available for rural highways.

Secretary Brinegar, in testimony before the Senate Committee on Public Works on March 12, 1974, said this: "Before going to the details of the bill (referring to UTAA) it is perhaps worth stressing that the department will later submit legislation setting forth our small urban and rural transportation plan for the 1978 to 1980 period, and I urge you not to consider the emphasis in UTAA on urbanized area programs as a decision to deemphasize our programs for other areas."

We must say that we most anxiously await this plan. And we would hope that it would be implemented before 1978.

On March 11, 1974, Indiana's Gov. Otis R. Bowen appeared before a public hearing of the Rail Services Planning Office of the Interstate Commerce Commission. He had this to say, "In its proposal for wholesale (rail) abandonment, the Department of Transportation assumes that the trucking industry will take up the slack. That is true in some instances, but the trucking industry will be quick to point out that many short hauls are not profitable for that mode either. Furthermore, the highway system simply could not accommodate a massive shift. For many communities and shippers, the only alternative to rail transportation would be no transportation at all. The proposal does not make a reasonable evaluation of the agricultural needs.

"In 1966 Indiana agricultural exports amounted to $46 million in value. In 1973 the dollar value stood in excess of $600 millioin. At a time when America's farm exports are the major factor in keeping the balance of payments afloat, and at a time when the American farm may be the arsenal that will forestall worldwide food shortages, this proposal would prevent efficient movement of a large percentage of farm exports."

Governor Bowen's points are valid and point up the extreme need for a transportation bill that Secretary Brinegar promises will be forthcoming at some time in the future.

In the meantime the administration presents UTAA and TIA with no hint of what the promised, forthcoming "rural transportation" bill might contain.

We have been told that we have revenue sharing that can be used to answer our rural transportation needs but is this the answer? A closer inspection shows that revenue-sharing moneys, like UTAA funds, tend to gravitate to the already overly-dense communities. So revenue sharing, at least for the rural areas, cannot conscientiously be offered as the answer either.

On January 23 of this year, Norbert Tiemann, Federal Highway Administrator, and this to say about the movement of our goods: "Aside from the localized problem of the Northeastern railroads, not a great deal has been said about freight transportation recently."

"Rather, our limited resources have had to be expended primarily on the problems of passenger transportation, particularly in urban areas. However, while our level of effort in freight transportation has thus necessarily been much lower than in the passenger field, we have been looking at many of the problems and keeping a watchful eye on developments."

We would suggest here that watching never accomplished as much as working.

To further quote him, "The growth of the trucking industry resulted in a 1972 motor truck inventory of more than 20 million vehicles, including 990,000 trailer and semitrailer combinations whose sole purpose would appear to be highway freight haulings. Not only did the number of combinations increase, trucks also grew larger. According to the American Trucking Association, the annual number of heavy highway vehicles entering the system rose from 62,000 in 1956 to 308,000 in 1972, while the annual number of medium-sized vehicles declined from 291,000 to 92,000 over the same period. Thus, although the maximum size and weights of trucks are limited by law, with these limitations, the average size of the vehicles has tended to increase."

And one last quotation from Mr. Tiemann's speech, "The fuel shortage has already brought suggestions that we remove the size and weight limitations on motor trucks as a trade-off for reduced speeds." End of quote.

We agree with Mr. Tiemann that trucks are going to get bigger but perhaps even more importantly, as small trucks wear out, it is obvious that they are being replaced with larger trucks. Our inflation, coupled with the fuel shortage, is making this switch to larger hauling units and absolute necessity.

Obviously this will necessitate greater maintenance cost on all of our highways from farm to market roads to the mighty interstate—but remember, the Federal Highway Trust Fund provides no funds for maintenance.

Let me briefly recap before going further.

The rural areas are faced with greatly decreased Federal funding from the Highway Trust Fund. They have had 46,000 miles of rail abandonment and are now faced with 78,000 miles more. In addition, the rural highway maintenance costs are obviously going to increase because of the absolute necessity for using larger trucks, more trucks, and more hauling frequency. From where will the money come?

Congress recently passed, and the President signed, the Regional Rail Reorganizaton Act of 1973. This is the bill which has finally brought to possible fruition the DOT's proposal for additional massive rail abandonment.

First, let us quote from the official congressional interpretation of the bill: "This section provides that all rail service over rail properties of railroads in reorganization beyond that specifically set forth in the final system plan may be discontinued upon 90 days notice to the Governors, State transportation agencies, community governments, and to each shipper who has utilized the facilities during the previous 12-month period."

As you can see, the ease and speed of abandonment under this new act will be far different from what we have known in the past. Under TIA, it will probably be even faster.

Again quoting from the official interpretation of the act, this time concerning subsidies: "Subsection (a) of this section provides that the Secretary of Transportation shall reimburse a State, local, or regional authority for 70 percent of the amount said entity pays as operating subsidy under section 503(c) of the act."

Of this rail bill, Secretary of Transportation Brinegar stated, "It is unwise

for the Federal Government to become burdened with a commitment to provide operating subsidies for activities which may never become self-sufficient. Such subsidies, in themselves, may be entirely perverse in that they offer the losing operation little incentive for improving service and eliminating losses. Operating subsidies, in effect, do not work as a holding action to give a potentially viable operation a second chance, but tend to become a way of life. Furthermore, this way of life is one which has a built-in impetus to become more and more expensive, unchecked by the absence of any meaningful sanctions to put an end to the subsidy mechanism, per se."

In these remarks, Secretary Brinegar is not talking about 100 percent Federal subsidies; he is talking about 70 percent Federal money and 30 percent local money.

It should be getting clearer and clearer that, like it or not, we are going to have considerable rural rail abandonment in the next few years. No matter which option we use under this rail bill or under the new TIA, we will eventually have abandonment.

In fairness to all who were involved in drafting the Rail Reorganization Act, we feel constrained to say that it is certainly better than no rail bill at all. The Congress labored under terrible pressures, and, in the American democratic tradition, each faction had to agree to some compromise to achieve a total piece of legislation. Nevertheless, rural America will again suffer.

We do not want to give the impression that we are antirailroad. In point of fact, we believe that the railroads have literally accomplished miracles in the face of the ICC book of regulations. Chairman Herman Talmadge and Minority Leader Carl Curtis of the Senate Agriculture and Forestry Committee recently called a bipartisan news conference to announce publication of a committee print titled, "The Immovable Feast." During the course of the conference, Senator Curtis referred to the ICC as "the most inflexible, incapable Government operation I've ever seen."

The trucking industry's capacity has also been stretched to the breaking point in trying to move our harvest. They also have done a magnificent job under very trying circumstances.

But what encouragement are these two industries being given to help expedite our growing harvests? Instead of encouragement, they are offered overregulation and cutbacks of rural highway funds.

If you were an independent trucker, would you take the chance of driving your life savings over a chuckhole-ridden road or a 1920 wooden bridge to salvage someone else's harvest? The only possible inducement would be for you to double and triple your rates on nonrate-regulated agricultural commodities. This, of course, drives up the price of the on-shelf food items—assuming they get to market at all.

It would appear, from the consistent rumors that we hear, that those sections of rail line which have been proposed for abandonment are presently receiving little or no maintenance.

If this is the case—and in any case—next year's harvest will be very, very heavily dependent on truck haul, far more than at any time in the past. Since this committee is composed of highway experts, we don't feel that it is necessary to draw mental pictures of the road destruction that will follow the next planting and harvest; and the next freeze and thaw. Yet Secretary Brinegar asks us to wait until 1978 for a rural transportation bill and, in the meantime, offers a cut in rural transportation funds.

Meanwhile what do we do, the next year and the year following, and the year following that? In our opinion, we have waited too long to act.

If we are not to kill those communities that will lose service, then they will have to be given priority consideration for improved highway service to the nearest major rail collection point. Please let me repeat that for emphasis. If we are not to kill those communities that will lose rail service they will have to be given priority consideration for improved highway service to the nearest major rail collection point.

We are in a world food market and we are now the seller. Two years ago, we exported $5 billion of agricultural products. Last year, our ag exports jumped to $11 billion. The predicted export for this year is $19 billion.

These are enormous and sudden increases in our agricultural exports and have returned our balaance of payments to a favorable position, but just barely.

Generally speaking, it is the large farm cooperatives and elevators which do

most of our agricultural exporting. They are usually located on good transportation corridors and sometimes at the crossroads of these corridors (such as water, rail and interstate). Many of these operations even maintain permanent overseas sales offices.

Also, generally speaking, it is the county elevator, the smaller coops, and the independent farmer that supplies our domestic needs. It is this latter group that has been hardest hit by a deteriorating rural transportation system.

Perhaps it is because of the above two very broad generalities that the rural transportation problems are not well understood. The same questions about poor rail or poor highway service could be asked of 50 agribusinesses and would probably receive 50 different answers both by type of difficulty and by degree, depending on the geographic locations in which the questions were asked.

As you may have gathered from the above, those elevators wihch have good transportation available to them stand to make additional profits directly because of the plight of those elevators which cannot get their products moved.

Lack of decent transportation can drive up the cost of food just as surely as a poor harvest, since both produce the same results—shortages at the marketplace.

If we do not improve our rural transportation facilities immediately we will drive the price of domestic foodstuffs so high that some localities in the country will find it cheaper to import foreign agriculture rather than get it delivered from our heartland. This is currently happening in the case of wheat (please see the attached news clippings) and, to some extent, dairy products.

With the Arab oil embargo lifted and with mounting foreign crude oil prices we will have to grow more and export more if we are to avoid again falling into a deficit balance of payments situation.

If we again slip into a deficit balance of payments, this means another devaluation of the dollar and that, without question, means another automatic and big inflationary jump.

Now for a few observations concerning the Highway Trust Fund. Entrepreneurs and the capital necessary to maintain constructive capacity are losing "trust" in the Highway Trust Fund. The construction industry is losing "trust" in the Highway Trust Fund. Truckers and highway users are also bound to be losing "trust" in the trust fund.

Why? Because of the way in which the fund has been administered. Were a bank to administer a widow's trust fund in the off-again, on-again, impoundment and impoundment-by-regulation fashion in which the administration has handled the Highway Trust Fund do you not believe that she would seek and be granted legal relief? Any trust fund without "trust" is no trust fund at all.

Now—and more in the form of a prediction—food prices will considerably exceed their current level by this same time next year in large measure because of the failure of our transportation system. When this happens there will be a great hue and cry from the public to stop exporting agricultural products.

If we accede to the pressure to stop exporting then the huge accumulated agricultural surpluses will bankrupt untold thousands of agri-businesses or—if the Government chooses to buy up the surpluses we could have the largest deficit budget ever. In any event we will be guaranteed economic chaos either through higher food prices or through rampant inflation—or both.

Remember we are not talking about the year 2000—we are talking about next year.

We strongly urge this committee to adopt some type of rural road program with heavy emphasis on improvement in two major areas.

The first of these areas would place special emphasis on improving the highways into and out of those communities which have already suffered the 46,000 miles of rail abandonment. Concurrent with this would be a plan to offer highway improvement assistance to those communities which lose rail service in the future.

We would recommend here that the first step in the improvement process be to give these communities a heavy-duty road to the nearest main-line rail track and to the nearest heavy duty major highway.

Major collection points for containers and other forms of piggyback could also be established so that these communities would not be isolated socially, medically, agriculturally or industrially.

The second improvement we recommend is a massive bridge replacement program specifically for rural roads both on and off the Federal-aid system. By this we do not mean $10 million edificies to mankind but rather the kind of prestressed, precast bridges which are cast in a yard, transported to the site and erected in a

matter of a few weeks with the least possible disruption to the environment and to traffic.

These bridges can cost as little as $30,000 to $50,000 depending on length and are sometimes no more than box culverts (see illustrations for examples).

We wish that we could provide the committee with the figures on total national bridge inadequacies, however, for examples we will show you the situation in two large agricultural producing states: Indiana and Arkansas.

In Indiana, the home State of Mr. Graham, there are 7,910 bridges of less than 16-foot width. In Arkansas, my home State, there are 7,012 bridges of less than 16-foot width. These figures, of course, also include the bridges on those two States' county road systems but they are the bridges over which most of our agricultural products must ultimately or originally flow. And on which our balance of payments (not to mention human lives) are now dependent.

Identical figures for the rest of the States could be obtained in probably a matter of 1 or 2 months.

Bridges less than 16 feet wide probably have not been built since the 1920's and certainly were not designed nor will most of them handle today's 40,000 pound grain and even heavier livestock trailers and feed trucks.

We therefore recommend an emergency rural bridge program of great magnitude. Such a program could be implemented and some of the critical work completed prior to most of next year's harvest.

Since specifications on precast and prestressed bridges are virtually standard, a research and development program would not be necessary. Factory-type mass production techniques would be employed, thus eliminating the question of industry capacity.

This type of program can be accomplished and will help stabilize food prices, especially since the bottleneck areas for food movement are generally known and can be attacked first.

We cannot argue with the money UTAA proposes spending in the cities. We do decry the insufficient funding for rural transportation.

Let us give you some idea of the quantities that now must be transported annually. For these purposes we will use only three crops—wheat, corn and soybeans. Please keep in mind that this is just a small part of our total agricultural harvest and that these quantities must be moved—not once—but several times before they reach the supermarket shelves or their overseas destinations.

SELECTED CROPS

[Production expressed in bushels]

	Wheat	Corn	Soybeans
1966	1,305,000,000	4,168,000,000	928,000,000
1969	1,443,000,000	4,687,000,000	1,133,000,000
1971	1,618,000,000	5,641,000,000	1,176,000,000
1972	1,545,000,000	5,573,000,000	1,271,000,000
1973	1,711,000,000	5,643,000,000	1,567,000,000

Total 1973 harvest of wheat, soybeans, and corn was 8.921 million bushels, or 535,260 million pounds. This would fill 13,381,500 grain trucks (40,000-lb capacity); make a bumper-to-bumper string of grain trucks 129,253 miles long; and fill 5,352,600 standard grain boxcars that would make up a train 46,632 miles long.

Total increases for the three crops—1973 harvest over 1966 harvest:

	Bushels
Wheat	406,000,000
Corn	1,475,000,000
Soybeans	639,000,000
Increase	2,520,000,000

The increase in these three crops (comparing 1966 to 1973) would fill 3,780,000 grain trucks (40,000-lb. capacity) and placed bumper to bumper would stretch 36,500 miles. Please remember this is just the increase.

Expressing this increase in terms of boxcars, it would take 1,530,000 standard size cars (100,000-lb. capacity) and make up a train 13,172 miles long. Again,

these figures are just the difference between the 1966 and 1973 harvests of these three crops.

Perhaps the attached illustrations will more geographically portray the enormity of the agricultural transportation job facing us.

Also remember that larger and larger harvests are necessary and predicted. In addition, more transportation will be required for moving implements, fertilizer, seed, et cetera.

How do you move this amount of product to market—either domestic or international—with a deteriorating rural transportation system?

It is our additional recommendation that a number of intense study and demonstration projects be conducted immediately, utilizing the concept of containerization in the movement of agricultural products. A study of the inadequacies of our rural transportation system should be conducted concurrently with the demonstrations.

We have a history in this country of studying projects to death and this is why we are recommending that the demonstration projects run concurrently with the study of our rural transportation shortcomings. Only in this way can we develop the system, hardware adaptions (if needed), and a proper allocation formula for our total goods-moving transportation dollar in the shortest possible period of time.

It is also suggested that the demonstration projects be conducted by the land-grant colleges and universities in the respective States chosen. We make this suggestion because of the quantity of knowledge which already exists in these schools, and because of this, their ability to expedite the projects locally rather than trying to run them long distance from Washington.

These State schools also have immediate access to the mass of available (but uncorrelated) data presently existing in various State agriculture, highway and/or transportation and commerce departments.

General guidelines for the demonstration projects and pursuant studies would, of course, have to come from Washington.

We sincerely believe that, from these projects, will come a truly functional transportation and pipeline storage system for the movement of agricultural products, not only intrastate, but interstate and for export.

The idea of containerization of agricultural products is not new. We are told that currently, much grain is being moved along the west coast in containers.

It is not our current thinking that containerization is the total answer for the agribusiness community. Rather, we are thinking of it as a means to handle the overload as well as providing a means for rail-abandoned communities to compete with other communities. If subsidies are to be considered, it would appear to be far cheaper to subsidize the rate differential, if any, between container and covered grain hopper than it would be to continue to subsidize a spur rail line. Also, container-hauled grain is handled in bulk fewer times, thus saving much damage and handling costs.

In the early part of our testimony we referred to the Rural Development Act. We would like to point out that the House vote on that act was 340 favoring and 36 opposing. The Senate vote was 78 favoring and none opposing. This is overwhelming bipartisan support for any piece of legislation.

By this vote Congress expressed its desire to help rural America and to stem the migration to our already overcrowded cities. But how can the intent of the Rural Development Act ever be implemented without first providing adequate transportation to rural America? Transportation is certainly not everything that is needed, but it most assuredly is the first thing that is needed.

As you have by now gathered, we do not feel that the subjects of rail abandonment, poor rural roads, and rural development can be separated. Each is totally intertwined with the other. It is for this reason that we plead with this committee to work as closely as humanly possible with the Committees on Agriculture, Interstate and Foreign Commerce, and Ways and Means in the development of a total transportation plan.

We will conclude not with our own remarks but with those of the Honorable "Tip" ONeill, majority leader of the House of Representatives. Congressman O'Neill made these remarks following the House majority's reply to the President's state of the Union message.

"It is very interesting when we note the history of the past few short years. It was back at the start of 1920; approximately 31 million Americans lived on farms. Now there are between 8 and 10 million on the farms.

"At one time when we read the history of Congress, the farm bloc was the instrumental power in the Congress. Today there are but 25 Members of Congress who represent purely agricultural districts. There are about 115 Members who represent rural areas and suburban areas of the United States.

"It was William Jennings Bryant who once said:

"Burn down your cities and leave our farms and your cities will spring up again as if by magic; but destroy our farms and grass will grow in the streets of every city in the country.'"

Thank you sincerely for hearing us. We hope we have added something to your proceedings.

STATEMENT OF AMERICAN TRUCKING ASSOCIATIONS, INC.

Mr. McFALL. The committee has received a statement from William A. Bresnahan, president of the American Trucking Associations, Inc. It will be inserted in the record at this point.

[The statement follows:]

TESTIMONY OF WILLIAM A. BRESNAHAN, PRESIDENT, AMERICAN TRUCKING ASSOCIATIONS, INC.

In reviewing the statement presented before this committee by the Secretary of Transportation, I was struck with the realization that the present national transportation policy inserted as a preamble to the Interstate Commerce Act in 1940 meets most of the general principles recommended by him for inclusion in a national transportation policy. The present wording does not hinder attainment of any of the 10 goals listed in his statement.

The trucking industry stands solidly for the goal of an efficient, safe, fast, and convenient transportation system with minimal negative impact on the environment within reasonable limits. We are firmly against nationalization of any mode of transportation or segment thereof, and agree that all modes should pay their share of any Federal expenditures which benefit their operations. Motor carriers have always and undoubtedly will continue fully to pay for their utilization of the highways.

In his submission to this committee, the Secretary reviewed the historical evolution of the concept of national transportation policy and discussed the problem of constantly changing national goals and priorities. When all is said and done, he raised more questions than he provided answers. Nowhere did he justify, nor did he intend to present this committee with specific proposals for the formulation of a new national transportation policy. Our conviction is reinforced that the present national transportation policy, 49 U.S.C. preceding sections 1, 301, 901, and 1001, is a viable and workable mandate.

The remainder of my testimony is directed to specific programs and activities which he has recommended to implement the policies and goals he set forth, for this is where conflicting points of view arise and the goals will actually be attained or not.

The Secretary recommends a reexamination of the present economic regulation of motor transportation with a view toward eliminating what he considers to be burdensome restrictions. He envisions a dual purpose—greater energy efficiency and greater competitive pricing within the motor carrier industry and intermodally. The former, we submit, can and is being accomplished by the Interstate Commerce Commission, and the latter is destructive under the approach he has in mind.

Energy efficiencies and environmental improvements are the priorities of the day. The manner in which the Interstate Commerce Commission has responded to these relatively new problems and crises is exemplary and attests to the adequacy and flexibility of the existing regulatory framework. There is no need to reform the agency that regulates, when the regulations of that agency can and are being adjusted by it to meet the new demands. In the first place, it should be noted that the circuity and inefficiency complained of are greatly exaggerated and that the ICC has always permitted carriers to eliminate their circuity or empty backhaul if there was a showing of public need. In addition, the ICC has acted to eliminate excessive circuity (Ex parte No. 55 (Sub-No. 8), Gateway

Eliminations) and is considering backhaul relief for private carriers (Ex parte No. 43 (Sub-No. 3), "Lease to Regulated Motor Carriers of Vehicles With Drivers by Private Carriers"). Where feasible, and without harmful deregulation which could throw the motor carrier industry into a pre-1935 chaos, the ICC has shown itself capable of dealing with the motor carrier aspect of the energy problem.

Greater competitive pricing wthin the motor carrier industry and intermodally are terms which mean little without specific legislative proposals. In the proposed Transportation Improvement Act of 1974, H.R. 12891, DOT has recommended the establishment of variable cost as the only standard of the compensativeness of rates. The fact is, however, that variable cost is not a proper standard to insure the welfare of our national transportation system. Fully-distributed cost is the only appropriate basis for determining the lawfulness of rates of any mode in an intermodal competitive situaton. Otherwise, a carrier of one mode with greater financial resources or more diversified traffic, could temporarily or even permanently lower its rates below its fully-distributed costs on a particular segment of traffic in order to selectively compete with a carrier of another mode which, in fact, has the inherent cost advantage. The latter carrier, in order to remain competitive, would be forced to operate at a rate structure below its fully distributed costs. Such a result would seriously endanger the continued existence of that carrier, and thus fail to assure the shipping public of as varied and competitive a transportation system as possible. Any basis other than fully distributed costs would encourage predatory rates, rather than genuine competition, and award the traffic, not to the most efficient carrier, but to the carrier best able to withstand the rigors of a prolonged rate war.

The Secretary of Transportation's comments before this committee dealing with energy usage in transportation require further explication. DOT continues to rely on ton-mile freight data which shows that water carriers transported 300 ton-miles of freight per gallon of fuel in 1973; rails, 180 ton-miles; and trucks 50 ton-miles. Based on these data, the Secretary determines that there is a strong need to promote additional carriage by water and rail, where feasible. Earlier in his comments, the Secretary said that he would "like to see trains become more efficient freight 'wholesalers,' with close coupling to trucklines which would serve, at least in part, as 'retailers.'"

The sources for the data presented in the Secretary's statement relating to "Average Energy Usage and Efficiencies" (p. 40) are not shown, but it is apparent that the data in the first column are not comparable with those in the second. In the first column the fuel consumption figures for trucks, which the footnote indicates are "freight trucks," obviously include consumption of gasoline and other fuels by the millions of trucks engaged in local freight movements, including pickup and delivery service for railroads. The relative ton-miles per gallon shown in the second column have been calculated from other data. In this case, it appears that all revenue ton-miles of service performed by railroads were divided by the gallons of fuel used by them to arrive at the ton-miles per gallon of fuel. For trucking the number of intercity ton-miles of freight service by all types of carriers, private and for-hire, were divided by the estimated gallons of fuel consumed by trucks engaged in intercity freight services. The accuracy of these later data is open to serious question. Regardless of whether or not the figures used by the Secretary approximate the relative consumption of fuel per ton-mile of the several forms of transport, the comparison is irrelevant.

The use of the ton-mile as a measuring stick for transport "efficiency" borders on the absurd. To illustrate: it is not at all unusual to have cars containing light-loading, as well as heavy-loading freight, in the consist of the same train. Assume that a train which moves 100 miles contains, among other freight, one carload of foam rubber (about 8,000 pounds) and one carload of steel (about 120,000 pounds). Its performance with respect to the foam rubber is 400 ton-miles; with respect to the steel, 6,000 ton-miles. Now can it be said that the transportation of the steel was performed 15 times as efficiently as that of the foam rubber? In short, a ton-mile is nothing more than a ton of any freight moved 1 mile. Because of differences in the nature of the business of the various transport modes, water and rail carriers generally handle much heavier loading traffic than do motor carriers. But does that fact alone make them more "efficient" than motor carriers? In the final analysis we believe that experience has proved that in the movement of freight, when measured in realistic terms, trucks are the most efficient method of moving those commodities they handle, in the kind of services they provide. Why else would American shippers with free choice between modes, pay three to four times as much per ton-mile for truck service than for rail?

Another shortcoming of the ton-mile as a measure of transportation efficiency includes its failure to distinguish between "real" and "waste" freight movement. Thus, if a shipment moves between two points over a route that is 20 percent longer than the shortest route, this waste mileage is included in the output as measured by ton-miles. Similarly, extra packaging which is necessary to protect a shipment from damage when moving by rail as compared to truck is counted in the ton-mile output. Thus, even on comparable commodities, the fuel used to produce waste ton-miles is not taken into account.

Efficiency of movement is stressed by the Secretary when he examines the motor carrier industry by itself, but is totally overlooked in his energy-usage comparison between motor and rail transportation. Yet the mode which can deliver the freight with the least amount of extra mileage for pickup and distribution generally will have the least total effect on energy consumption. Reducing the amount of handling of shipments necessary to effect final delivery cuts down the times engines are kept idling, large capacity equipment is used to handle small loads, and power is expended at a terminal to operate drag lines and materials handling equipment necessary to break down loads and redirect items of freight. The Secretary does not take into account the fact that trucks generally have the advantage of efficiency of movement. Instead he only recognizes the other special advantages of trucks of speed and reliability.

Strangely enough, there seems to be little concern with the waste of energy involved in circuitous rail routing. Yet, we believe it can be accurately said that circuity in rail movements is far greater, on the whole, than in motor-carrier movements. It is not at all unusual, for example, to have a rail shipment (e.g., lumber) which could move between origin and destination relatively directly, and over a short period of time, routed "all over the country" and involving a much longer time period, for the sole purpose of allowing the shipper to sell the product en route. This practice involves significant waste in the use of the rail car, which becomes, in effect, nothing more than free storage space for the shipper, to say nothing of the waste of fuel and additional emissions due to the circuity of the routing.

Also of interest is a breakdown of the commodities comprising the freight ton-miles used by the Secretary for his energy-usage conclusions. The extent to which freight is interchangeable between rail and truck is greatly exaggerated. Five commodity groups account for more than 60 percent of the approximately 1.4 billion tons of all commodities moved by railroads in 1971, the latest year for which comparable rail, water, and motor data are available. They are: field crops, metallic ores, coal, nonmetallic minerals (except fuels), and lumber and wood products. Railroads handled 848 million tons of these five commodities, class A water carriers handled approximately 91 million tons, and class I motor carriers handled about 13½ million tons. Of these five commodities, railroads accounted for 89 percent, class A water carriers 9½ percent, and class I motor carriers just over 1⅗ percent. Since average haul per ton by trucks, for all commodity groups, is only 261 miles, or 67 percent of the average haul per ton for railroads of 387 miles, it is obvious that trucks would account for an even smaller percentage of ton-mile statistics for these commodities.

From the foregoing data it can be seen that regulated motor carriers are not an important factor in the movement of commodities which make up more than 60 percent of total rail traffic as measured by tons. This leads us to note that shippers' reliance upon rail or motor service is a produce of many factors. A plus or minus on the energy-usage scale will not affect, in the long run, a shipper's utilization of one transportation mode over another. It is the advantages of the various modes that make the difference. Some of the inherent advantages of trucks include speed and flexibility, as stated by the Secretary, and also smaller cargo units. The unique ability of trucks promptly to perform door-to-door service has been closely related to the accelerated dispersal of industrial plants and commercial establishments into suburban and rural areas, eliminating much congestion and spurring the economy in those sometimes depressed areas. Rail lines often are not available at these locations. Finally, improvements in small containers and demountable truck bodies are infinitely more responsive to the needs of those shippers who do not ship in quantities sufficient to enable them to tender carloads of freight to the railroads.

Although not mentioned in the Secretary's testimony, DOT has recently recommended that Congress authorize a modest increase in the weights allowable on the Interstate System over the 1946 standards of the American Associ-

ation of State Highway Officials. These standards, imposed in the 1956 Highway Act, would be raised to levels developed by both the Bureau of Public Roads and AASHO since the present limits were adopted. The increases recommended by the Secretary are from 18,000 to 20,000 on single axles, from 32,000 to 34,000 on tandem axles and from a flat gross weight limit of 73,280 pounds to limits based on the so-called Table B, first published in the report of the Secretary of Commerce to Congress in 1964 (H. Doc. No. 354, 88th Cong., 2d sess.). The fact that the trucking industry is today forced to operate equipment on the country's finest roads to conform to 1946 standards demonstrates graphically the opportunity for increased productivity which is possible with existing motor-carrier equipment, if Congress will only authorize its use.

No single mode of transportation should obtain total governmental endorsement or be supported by policies which would deny to shippers the inherent advantages of any particular mode of transportation. We would therefore agree with the Secretary's statement that trucks, too, deserve support and governmental efforts should concentrate on increased efficiency in the energy-usage of trucks now on the road. We would caution, however, that it is a mistake not to promote any additional carriage by truck and to urge shippers to use another mode of transportation which is not best suited for their needs.

Chairman's Concluding Remarks

Mr. McFall. I think, that from these 2 days of extensive testimony, all of us are in general agreement with respect to the need for, and the problems involved in, developing a useful statement of national transportation policy.

These problems involve Executive agencies, the Congress, and private industry. These hearings, I believe, showed that the status of our transportation policy is not solely the result of the action or inaction of the Department of Transportation. There are other agencies, such as the ICC and CAB, which are involved in the regulatory aspects. Perhaps a review of the regulatory situation needs to go hand-in-hand with the development of a policy. And there are probably some changes which we in Congress can consider to assist in the implementation and, perhaps, formulation of a policy.

While the Secretary's statement was admittedly incomplete and was not as specific as we would have liked, it was, nonetheless, a first step. But more needs to be done. I believe we need a more explicit statement of our goals and objectives. These objectives should, at a minimum, consider whom we hope to serve and the general level of service and safety we should offer. I am not convinced that DOT has the data necessary to start to make these types of policy decisions.

After we analyze the additional written comments on the Secretary's statement, we in the Congress will have to determine what course of action to follow. We may conclude that DOT will be able to come up with a statement that can be submitted to the Congress for approval in a timely fashion. We may conclude that Congress should proceed on this matter by itself. We may conclude, as Congressman Adams suggested, that we need a special blue ribbon Commission on Transportation Policy.

In my opening remarks at yesterday's hearing, I posed the question of our transportation quandary: How are we going to get there from here? This hearing was intended to be a beginning—not an end—of that search for a solution. No problem as important and multi-faceted as this can be resolved in 2 days. We have, however, taken a significant step in the right direction.

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