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95-89 AUTHORIZE APPROPRIATIONS FOR RAIL SAFETY  
GOVERNMENT DOCUMENTS PROGRAMS 1979-80

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HEARING

BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION

OF THE

COMMITTEE ON COMMERCE,  
SCIENCE, AND TRANSPORTATION

UNITED STATES SENATE

NINETY-FIFTH CONGRESS

SECOND SESSION

ON

S. 2897

TO AMEND THE FEDERAL RAILROAD SAFETY ACT OF 1970 TO  
PROVIDE THE SECRETARY OF TRANSPORTATION A LONGER  
PERIOD WITHIN WHICH TO ASSESS CIVIL PENALTIES FOR  
CERTAIN VIOLATIONS, TO EXTEND AUTHORIZATIONS OF  
APPROPRIATIONS FOR FISCAL YEARS 1979 AND 1980 FOR THE  
RAIL SAFETY PROGRAM, AND FOR OTHER PURPOSES

S. 2898

TO AMEND THE FEDERAL RAILROAD SAFETY ACT OF 1970 TO  
AUTHORIZE ADDITIONAL APPROPRIATIONS, AND FOR OTHER  
PURPOSES

APRIL 21, 1978

Serial No. 95-89

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## AUTHORIZE APPROPRIATIONS FOR RAIL SAFETY PROGRAMS FOR 1979-80

FRIDAY, APRIL 21, 1978

U.S. SENATE,  
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,  
SUBCOMMITTEE ON SURFACE TRANSPORTATION,  
Washington, D.C.

The subcommittee met at 9:30 a.m. in room 1202, Dirksen Senate Office Building, Hon. Russell B. Long (chairman of the subcommittee) presiding.

### OPENING STATEMENT BY SENATOR LONG

Senator LONG. This hearing will come to order.

Today's hearing is for the purpose of providing authorizations for fiscal year 1979, under the Federal Railroad Safety Act of 1970. Hopefully, however, these hearings will be able to make another important contribution to the Congress search for effective ways to deal with the serious problem associated with transporting hazardous and toxic materials. A great deal of public attention has recently been focused on railroad safety because of the unfortunate derailments over the past several months.

I am happy to see that a big step forward has been taken by the Department of Transportation in agreeing to start a new rulemaking that would substantially shorten the time required to retrofit tank cars with safety couplers and tank shields.

I will ask that the letter sent to Senator Sasser by Secretary Brock Adams on that subject appear in the record at this point.

[The letter follows:]

THE SECRETARY OF TRANSPORTATION,  
Washington, D.C., April 20, 1978.

HON. JAMES R. SASSER,  
Chairman, Subcommittee on Civil Service and General Services, U.S. Senate,  
Washington, D.C.

DEAR CHAIRMAN SASSER: When representatives of the Department of Transportation appeared before the Subcommittee on March 20, 1978, they conveyed to you my commitment to advise the Subcommittee not later than April 20, 1978, concerning my decision on the retrofit of DOT Specification 112 and 114 pressure tank cars. As you know, the existing regulations require the application of shelf couplers to all cars by July 1, 1979, and the application of head protection and thermal protection by January 1, 1982.

At my direction the Federal Railroad Administration conducted a public inquiry on the acceleration of the retrofit period on April 7, 1978. I personally participated in a portion of the hearing.

As a result of that hearing and our analysis of available information, I am pleased to advise you that we intend to publish proposed rules by May 9, 1978,



which would result in the substantial shortening of the retrofit period. These proposed rules will represent significant advances in the interest of safety.

I have directed that the Departmental elements responsible for executing this rulemaking pursue it as a matter of first priority. We intend to complete the rulemaking within three months of this date. Additional rulemaking will be proposed this summer to improve the safety of DOT Specification 105 pressure tank cars and other equipment used to transport hazardous materials.

As you know, the Department has also acted to bring about the removal from service of the type of freight car wheel which failed in the Waverly accident. FRA Emergency Order No. 7 was issued on March 23, 1977. That order set in motion a national effort to locate 1% carbon cast steel wheels and retire them from service. No car known to have been equipped with these wheels may be hauled in a train containing hazardous materials. All such wheels must be located and removed by the end of this year.

The notice of proposed rulemaking to accelerate the retrofit period will be made available to you as soon as it has been signed. I appreciate your interest and assistance in improving the safety of tank cars.

Sincerely,

BROCK ADAMS.

Senator LONG. However, I am concerned that as a result of the recently released report by the Office of Technology Assessment, our entire rail safety program has been questioned as to its effectiveness in getting the job done.

It ought to concern us all, for example, that increased track inspection in the last few years has not prevented an increase in accidents.

Moreover, the continuously increasing movement of toxic materials poses a far different kind of threat to communities than those associated with previous rail safety considerations.

While the loss of life and limb from rail operations was far greater at the turn of the century than today, today's risks are nevertheless far greater than they were 70 years ago.

We really need to concentrate our attention on the serious problem areas, and I hope these witnesses will provide the necessary insight toward that job.

I have read most of the statements that have been prepared for us in connection with the witnesses and they have been asked to limit themselves to 10 minutes in the summary of their statements.

All the statements will, of course, be printed in full in the record, together with the essential exhibits and attachments to support those statements.

The procedure that we customarily use in the finance committee is to use a timing device to let the witnesses know when their time has expired, and I would urge them not to read their entire statements but to concentrate on the portions of the statements that they want to highlight. It will all be considered by the committee.

[The bills follow:]



**S. 2897**

IN THE SENATE OF THE UNITED STATES

APRIL 12 (legislative day, FEBRUARY 6), 1978

Mr. Long (by request) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

# A BILL

To amend the Federal Railroad Safety Act of 1970 to provide the Secretary of Transportation a longer period within which to assess civil penalties for certain violations, to extend authorizations of appropriations for fiscal year 1979 and 1980 for the rail safety program, and for other purposes.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*  
3       That this Act may be cited as the "Railroad Safety Act  
4       Amendments Act of 1978".

## NOTICE OF VIOLATIONS

6 SEC. 2. The first sentence of section 207 of the Federal  
7 Railroad Safety Act of 1970 (hereinafter in this Act  
8 referred to as the "Safety Act") (49 U.S.C. 436) is



1 amended to read as follows: "In any case in which the  
2 Secretary has failed to assess the civil penalty applicable  
3 under section 209 of this title, or on civil action has been  
4 commenced to obtain injunctive relief under section 210  
5 of this title, with respect to a violation of any railroad  
6 safety rule, regulation, order, or standard issued under this  
7 title, within ninety days after the date on which notification  
8 was received by the Secretary from a State agency par-  
9 ticipating in investigative and surveillance activities under  
10 the provisions of section 206 of this title that State agency  
11 may apply to the district court of the United States within  
12 the jurisdiction of which the violation occurred for the en-  
13 forcement of such rule, regulation, order or standard."

14 ROLE OF DEPARTMENT OF TRANSPORTATION IN RAILROAD  
15 ACCIDENT INVESTIGATIONS; LIABILITY OF DEPART-  
16 MENT OF TRANSPORTATION'S AGENTS

17 SEC. 3. Section 208 of the Safety Act (45 U.S.C. 437)  
18 is amended—

19 (1) by deleting subsection (b) and redesignating  
20 subsections (c) and (d) as subsections (b) and (c)  
21 respectively; and

22 (2) by amending newly designated subsection (b)  
23 to read as follows:

24 "(b) To carry out the Secretary's responsibilities under  
25 this title, officers, employees, or agents of the Secretary are



1 authorized to enter upon, inspect, and examine rail facilities,  
2 equipment, rolling stock, operations and pertinent records at  
3 reasonable times and in a reasonable manner. Such officers,  
4 employees, or agents shall display proper credentials when  
5 requested, and during the course of such inspection or exami-  
6 nation shall be considered employees of the Government for  
7 the purposes of the Federal Tort Claims Act (28 U.S.C.  
8 2671 et seq.).”.

9 AUTHORIZATION OF APPROPRIATIONS

10 SEC. 4. Section 212 of the Safety Act (45 U.S.C. 441)  
11 is amended to read as follows:

12 “SEC. 212. There are authorized to be appropriated to  
13 carry out the provisions of this Act not to exceed \$35,000,000  
14 for the fiscal year ending September 30, 1979, and not to  
15 exceed \$35,000,000 for the fiscal year ending September 30,  
16 1980. Sums appropriated for research and development,  
17 automated track inspection and the State safety grant pro-  
18 gram shall remain available until expended.”.

19 HOURS OF SERVICE ACT; INTERSTATE COMMERCE

20 REQUIREMENT

21 SEC. 5. Subsection (a) of the first section of the Act of  
22 March 4, 1907, as amended (45 U.S.C. 61), is amended  
23 to read as follows:

24 “(a) This Act shall apply to any common carrier  
25 engaged in interstate or foreign commerce by railroad.”.



1        SEC. 6. (a) Section 6 of the Act of April 14, 1910, as  
2 amended (45 U.S.C. 13), and section 9 of the Act of Febru-  
3 ary 17, 1911, as amended (45 U.S.C. 34), are each  
4 amended by inserting "assessed by the Secretary of Trans-  
5 portation and" after "shall be liable to a penalty of not less  
6 than \$250 and not more than \$2,500 for each and every  
7 such violation, to be", where those words appear in the  
8 respective sections.

9        (b) Section 25(h) of part I of the Interstate Com-  
10 merce Act (49 U.S.C. 26(h)), is amended by inserting  
11 "assessed by the Secretary of Transportation and" after "shall  
12 be liable to a penalty of not less than \$250 and not more  
13 than \$2,500 for each and every day such violation, refusal,  
14 or neglect continues, to be".



95TH CONGRESS  
2D SESSION

# S. 2898

## IN THE SENATE OF THE UNITED STATES

APRIL 12 (legislative day, FEBRUARY 6), 1978

Mr. LONG (by request) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

## A BILL

To amend the Federal Railroad Safety Act of 1970 to authorize additional appropriations, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

3

### SHORT TITLE

4

SECTION 1. This Act may be cited as the "Federal Railroad Safety Authorization Act of 1978".

6

### AUTHORIZATION FOR APPROPRIATIONS

7

SEC. 2. Section 212 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 441) is amended to read as follows:

9

### "SEC. 212. AUTHORIZATION FOR APPROPRIATIONS.

10

"(a) There are authorized to be appropriated to carry out the provisions of this Act not to exceed \$37,725,000 for the fiscal year ending September 30, 1979.

12



1       “(b) The amounts appropriated under subsection (a)  
2 of this section for the fiscal year ending September 30, 1979,  
3 shall be available for expenditure in such fiscal year as  
4 follows:

5       “(1) For the Office of Safety, including salaries and  
6 expenses for not more than (A) six hundred safety  
7 inspectors, including one hundred track inspectors and  
8 forty-five signal and train control inspectors, and (B)  
9 one hundred and twenty-five clerical personnel, not to  
10 exceed \$20,725,000. Such funds shall be available for  
11 travel expenses of safety inspectors for not less than  
12 twenty days per month.

13       “(2) To carry out the provisions of section 206 (d)  
14 of this Act, relating to State safety programs, not to  
15 exceed \$3,500,000.

16       “(3) For the Federal Railroad Administration, for  
17 salaries and expenses not otherwise provided for, not  
18 to exceed \$3,500,000.

19       “(4) For conducting safety research and devel-  
20 opment activities under this Act, not to exceed  
21 \$10,000,000.”.

22                                   LIMITATIONS ON FUNDING

23       SEC. 3. At least 50 per centum of the funds authorized  
24 to be appropriated to the Secretary of Transportation for



1 conducting railroad research and development programs  
2 shall be available for safety research, improved track inspec-  
3 tion and data acquisition technology, improved rail freight  
4 service and improved passenger systems. In addition, funds  
5 allotted for any railroad research and development program  
6 shall not exceed the funds allotted for railroad safety research.

7 DESIGNATED TERMINAL

8 SEC. 4. That subsection (b) of the first section of the  
9 Act entitled "An Act to promote the safety of employees  
10 and travelers upon railroads by limiting the hours of service  
11 of employees thereon", approved March 4, 1907 (45 U.S.C.  
12 61 (b) ), is amended by adding at the end thereof the follow-  
13 ing new paragraph:

14 " (4) The term 'designated terminal' means the home  
15 terminal and the away from home terminal for the assign-  
16 ment of a particular crew."

17 LENGTH OF DUTY

18 SEC. 5. That paragraph (1) of section 2 (a) of the Act  
19 entitled "An Act to promote the safety of employees and  
20 travelers on railroads by limiting the hours of service of em-  
21 ployees thereon", approved March 4, 1907 (45 U.S.C. 62  
22 (a) (1) ), is amended to read as follows:

23 " (1) Effective on the expiration of the two-year  
24 period beginning on the effective date of this paragraph,  
25 to require or permit an employee, in case such em-







1           “(B) had filed, instituted, or caused to be filed or  
2       instituted any proceeding against the railroad company  
3       resulting from any alleged violations of this Act or the  
4       regulations promulgated hereunder;

5           “(C) has testified or is about to testify in any pro-  
6       ceeding resulting from the administration or enforcement  
7       of the provisions of this Act;

8           “(D) has refused to operate defective equipment  
9       which he reasonably believes to be in violation of this  
10      Act or the regulations promulgated hereunder; or

11          “(E) has refused to work in an area or surround-  
12      ings where he reasonably believes there is present an  
13      imminent danger to his safety and health.

14          “(2) If an employee refuses to continue at his work on  
15      his then current assignment under conditions existing in sub-  
16      section (i) (1) (D) or (i) (1) (E), he shall have the right,  
17      either individually or in concert with other employees, to  
18      request reassignment without loss in pay and, if he is not  
19      reassigned, he shall have the right, either individually or in  
20      concert with others, to stop working, and all employees exer-  
21      cising their rights under this sentence shall be paid for all  
22      time lost. Any United States district court having venue of  
23      such action shall have original jurisdiction over any dispute,  
24      grievance or claim arising under this subsection (h). Such  
25      grievance, claim or dispute shall not be held to be barred by



1 any limitation of time provided by any agreement, rule or  
2 statute unless it shall appear that the claimant has been  
3 guilty of deliberate and inexcusable laches.

4 “(3) In addition to any other remedies, any railroad  
5 violating any provision in this subsection (i) shall be as-  
6 sessed by the Secretary a civil penalty not to exceed  
7 \$10,000.”.

8 OFFICE OF OCCUPATIONAL SAFETY AND HEALTH

9 SEC. 8. Section 202 of the Federal Railroad Safety Act  
10 of 1970 (45 U.S.C. 441) is amended by adding the follow-  
11 ing new subsection:

12 “(j) (1) There is hereby established within the Federal  
13 Railroad Administration an Office of Occupational Safety and  
14 Health to administer the occupational safety and health func-  
15 tions, powers, and duties of the Federal Railroad  
16 Administration.

17 “(2) The functions, powers, and duties of the employees  
18 of the Office created herein shall be the same for occupa-  
19 tional safety and health as for those persons employed in  
20 the Office of Safety who administer and enforce railroad  
21 safety.

22 “(3) There are authorized to be appropriated to carry  
23 out the provisions of this section a sum not to exceed \$9,-  
24 000,000 for salaries and expenses for not more than two



- 1 hundred occupational safety and health inspectors, and not
- 2 more than forty clerical personnel. Such funds shall be avail-
- 3 able for travel expenses of such inspectors for not less than
- 4 twenty days per month.”.



Senator LONG. Our first witness will be Hon. James King, Chairman of the National Transportation Safety Board (NTSB).

**STATEMENT OF HON. JAMES KING, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD; ACCOMPANIED BY ELMER GARNER, CHIEF, RAILROAD DIVISION**

Mr. KING. Mr. Chairman, it's a pleasure to take this opportunity to introduce the gentleman on my right who is the Chief of our Railroad Division, Mr. Elmer Garner.

I do welcome the opportunity to appear before you today to present the National Transportation Safety Board's views on Senate bill 2898.

Senate bill 2898, in my view, is important in many respects. The bill, as I see it, would allow the Federal Railroad Administration to perform its safety obligations at about the current level of effectiveness with the distinct promise of improvement in the future.

The budget available for inspections is larger and will help to disclose failures if the industry fails to comply with regulations, but it will not correct problems. An improvement in safety cannot be expected, unless money is provided, to correct the detected discrepancies.

The proposed authorization provides that \$31½ million will be devoted to carrying out the provisions of section 206(d) relating to State safety programs.

During the recent hearing of the NTSB concerning derailments and hazardous materials spills, the Board heard testimony from the States indicating that the requirements for participation by the States under this program were too severe. If the statements are well founded, then correction by this committee should certainly be considered.

The NTSB is by no means suggesting that qualifications be lowered, but rather that sufficient funds be provided for qualified personnel.

Further, with regard to the matter of increased inspection and enforcement, we would suggest that provision be made for allocating research funds for the evaluation of existing standards for currency, validity, correctness, and overall reliability.

The Safety Board has investigated accidents in which fatigue has been a contributing factor. Mandating rest is only one small step to insuring the fitness of workers for duty. Unless the entire spectrum of factors—which includes health standards, and most importantly the attitudes of workers and managers in respecting fitness criteria—is dealt with, no observable changes in the safety record will occur.

A section of the bill proposes to limit the length of a freight train to 4,300 feet. The NTSB has never formally determined that the length of a train was the cause of an accident. Many factors are involved in this problem—some of which are the placement of loaded and empty cars in the train, the location of locomotive power, and the design of the braking systems.

This is a subject that requires more detailed examination by FRA and understanding of all factors before an optimum train length is established. We know that the intratrain dynamics involved increases as the number of units increase. However, to our knowledge, no one has established at what point those dynamics could be considered unsafe.



Our accident investigations have often led us to believe that operating discrepancies have gone unreported for fear of reprisal. We support the section of the bill that proposes to correct that condition.

The NTSB has no statutory responsibility for the health and welfare of the employees of the Nation's railroads. We are concerned for them, of course, as fellow beings. We also have another concern.

As previously noted, the fitness of employees has a bearing on safety. The working environment, the tools training, supervision, and the like often provoke human failures.

The NTSB, therefore, supports actions, rules, and regulations that are directed at reducing human error. From that point of view, the requirement of the bill which establishes an Office of Occupational Safety and Health is seen as providing a way to assure the fitness of railroad personnel so that they may carry out their duties with safety to themselves and to the public.

Mr. Chairman, that concludes my comments on S. 2898. I will be available for questions, sir.

Senator LONG. Thank you very much, Mr. King.

I have just one question that I want to ask you. We may have others that we will submit for the record.

You suggest that safety devices be installed on tank cars sooner than the Federal Railroad Administration estimated, and I think you are right about that. But aren't there serious logistic problems, by taking cars out of service when they are badly needed for fertilizers and other products?

My question is: Can the required retrofit be met with minimum disruption in car usage? In other words, can some of those cars be used for materials that aren't hazardous?

Mr. KING. Well, first, Senator, I think what we tried to do at our hearing was to open the horse's mouth and to count his teeth for the first time. We pulled a coupler and showed that it was a reasonably easily executed maneuver; that the time consumed was nowhere near the time that we had been told it would require; that the cost of the coupler wasn't burdensome. And, by the way, we pulled the coupler in 7½ minutes in front of our building.

We've seen this down in the field, even where they are heavily rusted and corroded, it took under 10 minutes. This was done with a three-person crew, with either a forklift or a lifting device of some type. And it can be done in the field.

The headshields that FRA requires is a design standard. We used an improved design of FRA's, and we have no particular product in mind; it was installed in 93 minutes, under field conditions—not under optimum shop conditions.

Right now, a number of the cars, as you suggested, are being moved in anhydrous ammonia service. Anhydrous ammonia service has a green placard that says "nonflammable gas," so it doesn't create a safety problem if one was on the exterior of the tank.

I think it is a question, Senator, of will. I may be too much of a capitalist, in a sense, but I'm convinced that if industry saw that it was in their best interest—and presently, by the way, Senator, it isn't in their best interest to provide the safety for these cars, because as you know, 98 percent of those cars are owned by investors or shippers, not



by the railroads. And those investors are not held liable for the sort of disasters that occur out in the field. The railroads end up cleaning up, and they end up paying up, so that the railroads are hard strapped for cash and have a great burden in this, as do the people who are along the rights-of-way.

The people who own those cars have had no liability, and we have never gathered testimony of any one of the carowners who were really responsible for the car and ever having been held liable and paying one nickel to any injured party.

So, Senator, there is no reason why you would wish to rush out as an investor to improve the safety of any particular car when you have no real interest in its safety and you bear no burden other than that of financial.

Senator, it costs \$2,000 to put the coupler and the headshield on. And that, generally—that came out very clearly—is \$9 a month, over half the life of a car. We don't view that as an unreasonable burden, even as we suggest to the most modest investor.

The problem we are running into now, Senator, is we notice that some of the operators and shippers have gone out to the smaller holders of those cars, and to the pension funds, and told them that they should get \$16,000 quickly because these cars are going to have to be emergency retrofitted. We are talking about a \$2,000 adjustment that will reduce the most common type of puncture—at the head—by 85 percent. We feel that is reasonable, and we feel it can be done more expeditiously than anything being considered right now by the industry.

Senator LONG. Let me ask you this: It is my understanding that the purchase of those cars, and the new rolling stock, was done under an act of Congress that made it a good deal, from the tax point of view, for people to buy the cars.

It would seem to me as though retrofitting of the cars was a good a business proposition as the purchase of the cars; that it would be done a lot quicker, because the people would find it not only good for the public, but good for business.

Has that aspect of it been taken into consideration?

Mr. KING. We have suggested it. There are ways that could be examined. The Safety Board, as a rule, deals with the safety issues rather than the economic—as usual, though, Senator, your comment is directly to the point and goes to the heart of the issue, and the answer is “yes,” it is an unqualified “yes.”

It is a question of: Do we establish that safety in the situation of the public being protected is in fact economical and profitable.

Senator LONG. Thank you very much, Mr. King.

Mr. KING. Thank you, Senator.

[The statement follows:]

STATEMENT OF HON. JAMES KING, CHAIRMAN, NATIONAL TRANSPORTATION  
SAFETY BOARD

Mr. Chairman and Members of the Subcommittee: I welcome the opportunity to appear before you today to present the National Transportation Safety Board's views on Senate Bill 2898.

Senate Bill 2898, in my view, is important in many respects. The Bill as I see it would allow the FRA to perform its safety obligations at about the current level of effectiveness with the promise of limited improvement in the future.

The budget available for inspections is marginally larger and will help to expose the problems that need fixing. But inspections will not fix the problems. An improvement in safety cannot be expected unless money is provided to correct



the detected discrepancies either by redirecting existing funds or increasing the budget.

The proposed authorization for appropriations provides that \$3,500,000 will be devoted to carrying out the provisions of Section 206(d) relating to State safety programs. During the recent hearing of the Safety Board concerning derailments and hazardous materials spills, the Board heard testimony from the states indicating that the requirements for participation by the states under this program were too severe and that the availability of qualified inspectors with suitable technical proficiency to enforce the FRA standards could not be attracted under the present state funding law. Assuming these criticisms are well founded, then correction by this committee must certainly be considered. The NTSB is by no means suggesting that qualifications be relaxed but rather that sufficient funds be provided. Further, with regard to the matter of increased inspection and enforcement, we would suggest that provision be made for allocating research funds for the evaluation of existing standards for currency, validity, correctness and overall reliability.

The NTSB has investigated accidents in which fatigue may have been involved in a train accident.

The head-on collision of two Penn Central Freight Trains near Pettisville, Ohio on the 4th of February 1976 is an example. The lack of communication from the crew, their running through the stop signal and a switch and every indication that the train was not under the control of the crew for at least 16 miles before the collision point suggests that for undetermined reasons the crew was incapacitated. Mandating rest is only one small step to insure the fitness of workers for duty. Unless the entire spectrum of factors, which includes health standards, and most importantly the attitudes of workers and managers in respecting fitness criteria, is dealt with no observable changes in the safety record will occur.

A section of the Bill proposes to limit the length of a freight train to 4300 feet. The NTSB has never formally determined that the length of a train was the cause of an accident.

This is a subject which requires more detailed examination by FRA and understanding of all the factors before an optimum train length is established. We know that the intra-train dynamics involved, increase as the number of units increase; however, no one has established at what point those dynamics could be considered unsafe. In addition, the economic and physical limitations also affect the most appropriate train length. These should all be considered when a maximum train length is established.

Our accident investigations have often led us to believe that operating discrepancies have gone unreported for fear of reprisal. We support the section of the Bill that proposes to correct that condition.

The NTSB has no statutory responsibility for the health and welfare of the employees of the Nation's railroads. We are concerned for them, of course, as fellow beings. We have another concern also. As previously noted the fitness of employees has a bearing on safety. The working environment, the tools, training, supervision and the like often provoke failures. The NTSB, therefore, supports actions, rules, regulations, that are directed at reducing human error. From that point of view the requirement of the Bill which establishes an Office of Occupational Safety and Health is seen as providing a way to assure the fitness of railroad personnel so that they may carry out their duties with safety to themselves and to the public.

Mr. Chairman that concludes our comments on Senate Bill 2898. I want to say again how pleased I am to have had the opportunity to present the views of the NTSB to your committee.

Senator LONG. Next, we will call Mr. John Sullivan, Administrator of the Federal Railroad Administration.

**STATEMENT OF HON. JOHN M. SULLIVAN, ADMINISTRATOR,  
FEDERAL RAILROAD ADMINISTRATION; ACCOMPANIED BY RAY  
JAMES, ACTING ASSOCIATE ADMINISTRATOR FOR SAFETY**

Mr. SULLIVAN. Good morning, Mr. Chairman.

I have with me my Acting Associate Administrator for Safety, Mr. Ray James.



Senator LONG. I'm going to ask that your statement, which is a very thoughtful and somewhat lengthy statement, and which has a lot of good information in it, be put in the record at this point; and that the charts that you have in connection with your statement also be printed as exhibits in the record.

Now, can you summarize your statement in 10 minutes?

Mr. SULLIVAN. Yes, sir.

Our prepared statement presents information on accident trends, causes of accidents, enforcement, and rulemaking activities of the FRA safety research programs, and the efforts that are being made to get better accident and other data to improve the effectiveness of enforcement.

The statement concludes with comments, and the departmental position on various safety amendments which have been referred to the committee.

The central fact is that the accident rate is not turning around. Preliminary figures for calendar year 1977 show a continuing increase in the railroad accident rate from 13.2 accidents per million train miles, to 14 per million train miles, an increase of about 6 percent.

In absolute terms, the number of reportable accidents has topped 10,000. Fatalities from train accidents in 1977 total 98, a decrease of 38 percent from the 1976 total of 158. Injuries declined about 27 percent between 1976 and 1977, or from 1,282 to 942 persons.

Highway grade crossing accidents remain by far the primary source of casualties. Such accidents increased between 1976 and 1977 from 12,144 to 12,438. However, both fatalities and injuries decreased—fatalities from 1,168 to 946, and injuries from 4,887 to 4,419.

Mr. Chairman, we can't quantify the effect of our safety program on these and other accident statistics. We do not, nor does anyone, know how many accidents have been prevented by our inspectors finding defects and requiring their correction, nor do we know how many accidents have been prevented by the existence of a set of specific enforceable safety rules.

On the other side of the equation, you should recognize that any Federal regulation carries with it the danger of being counterproductive. This danger is particularly acute for a cash-short industry like the railroad industry. Each Federal requirement which does not have a safety payback could mean fewer dollars spent on essential maintenance.

Secretary Adams has asked me to stress two points about the safety program. We are determined to take whatever steps we can to achieve a program which is efficient and has integrity.

Second, we have demanded, and it has been done, that the enforcement environment be changed from one laxness to one of vigor.

On the prosecution side, we have increased the litigation and enforcement legal staff over the past year from four attorneys to seven attorneys, and an eighth attorney is included in the 1979 budget.

In addition, three law clerks and a new paralegal position provides support. The result of this reallocation of legal resources is and will be an increase in the number of claims processed and fines collected, and a decrease in the time between violation detection and prosecution.

The department believes that an environment of strict enforce-



ment is conducive to focusing on improvements in the safety program. Both public and private resources should be directed at identifying and eliminating hazards which are most likely to lead to accidents.

We are pursuing several approaches to this end. First, we have begun a full reexamination of all safety regulations. We will propose to eliminate those requirements which are questionable or marginal.

On the other hand, regulations which may miss the mark in defining a hazard, or do not deal at all with a hazard, will be identified for possible rulemaking.

Second, we are exploring alternatives to specific and detailed regulations which would induce the industry to assume more responsibility in preventing accidents. Examples are performance standards with stiff penalties for serious violations and employee certification programs.

Third, we are developing mechanism to marshal accident and other data on a timely basis to identify hazards by carrier and by area so that enforcement efforts can be targeted to where they are most needed and can do the most good.

Fourth, we are very concerned that FRA has not developed systematic and timely mechanisms to identify, analyze, and act upon hazard trends in equipment, operating practices, and other areas. The correction of this deficiency in the safety and research headquarters staff can improve the effectiveness of the safety program far more than the addition of large numbers of inspectors in the field.

Mr. Chairman, this administration intends to face up to the difficult problems confronting the railroad industry. Rigid economic regulation has hindered the industry in competing for business in the private market. Governmental subsidies benefiting other transportation modes and market changes have further eroded the competitive position of the railroads, and the railroad industry has within it certain areas of structural inefficiencies which further weaken the industry's economic ability.

We will be addressing these problems during the year. We look forward to working with the committee and to helping make the railroad system both safe and profitable.

Mr. Chairman, before I close, I would like to announce that Secretary Adams has agreed to reopen the rulemaking on the retrofit of 112 and 114 tank cars in order to shorten the retrofit period.

The Secretary also has ordered that the rulemaking be given the highest priority within the department, and that a final rule be issued before July 12. The specific terms of a shortened retrofit period will be made public in a notice of proposed rulemaking which the Secretary has directed to be issued before May 9.

Mr. Chairman, I would like to respond to any questions you might have.

Senator LONG. You have done a good job of summarizing your statement, which is very thoughtful and useful. Really, every member of the committee ought to spend a couple of hours studying this before he tries to pass judgment on this legislation. And I say that, without meaning to reflect in any respect other than favorably on the very thoughtful statements that have been prepared by the others that will appear here.



I am going to submit two questions that occurred to me in connection with your testimony, and I will ask a third one.

I will ask, with regard to the other two, that you just give us an answer in writing.

Senators Magnuson, Pearson, Danforth, and myself have expressed our interest to you and to Secretary Adams in speeding up the approval of the railroad applications under the redeemable preference share program because this measure was designed primarily for work on track and roadbed, and because people have very poor conditions of track and roadbed that has contributed to derailments. It seems to me that the safety of the communities ought to be of paramount consideration. This fact alone ought to be considered in having the highest ranking of public interest, far higher, in fact, than any consideration of security that the Government receives on its loans or the ability of the applicants to pay years down the road.

I wish that you would see to it that these contributions—at least these considerations start receiving higher rank than other considerations.

Now, let me tell you the part that concerns me, and maybe we ought to amend this bill to take this into account. One of the big things that has been holding up the use of this money the Congress has provided to improve the rails is what I might call the pauper's oath provision, that for a railroad to go get some of this money that was appropriated by Congress to help improve the rails, they have to, in effect, say that they can't get the money from any other financial source.

Now, the way that thing has been administered up to now—and I should have told you that if they were as diligent in applying the law as Congress intended it—but it has been when someone went down to apply, the kind of statements he had to make to make himself available for the credit, sounded like he was on the verge of taking bankruptcy, with the result that his credit was shut off. And the rumors would get around town that they were about to go busted. And that pauper's oath type of thing has been counterproductive in my judgment, and I think we ought to amend that law somehow or another, so that with a little more dignity and without claiming that they're broke or about to go out of business, that those for whom these loans were intended would have them available. How do you think that might be handled?

Mr. SULLIVAN. Well, I think we have had some preliminary discussions with your staff, and this is a problem, and we would like to continue those discussions and see how we can relieve this problem. We do end up with a very small group of the weakest railroads as our horizon for possible assistance, and that doesn't, as a consequence, address the full spectrum of railroad deferred maintenance problems that are out there.

I agree with you, Senator, that it is something we should look at very hard and try to come up with any necessary changes.

Senator LONG. I would be satisfied—and this is just one Senator—to take a chattel mortgage on the rails themselves. You've got some rails and some ties to be put in place. Just take a chattel mortgage on that. It is essentially that the guy can't afford to give them back to you.



Mr. SULLIVAN. Well, recently, Senator, as a for instance, we offered to the Rock Island Railroad, which has been in bankruptcy some 3 years, \$82 million in assistance, and \$50 million of that is track related. And we had looked to identifying a way of just what you were saying, perhaps put those sections of the rails under a separate corporate heading where we could take the stock in that corporation and have a way of owning something. And \$30 million of that we are looking to the project itself, the locomotives and the rolling stock, and not to the health of the corporation or to the earning power of the corporation as security for the money being loaned.

So I think what we are trying to do is to administer the law in the spirit that you are describing and actually get that money out when we can possibly do it.

Senator LONG. Well, I think you see the kind of thing that I'm thinking. Here we are, we need safer rails. In particular, when the passenger trains are rolling over those rails, we need smoother and more comfortable rails now. But—so we have provided money to make loans to put them in place. Now, I find myself thinking back to the time when I was on the Small Business Committee and the Administrator of the SBA came before us and testified that he was getting about the same kind of record on his loans that the banks were getting, and he was not making any bad loans and he wasn't having any losses. My reaction to him was, that proves to me you're not doing your job, because we did not give you this money just to go out there and make a loan that the bank should have made, but through some bad judgment that bank failed to make. We gave you the money to make the loans that the bank would not make. And if all you are doing is finding some loan that the bank should have made but failed to make, then you're not doing what we sent you over there to do.

It seems to me that in this situation, we ought to settle for far less security than the bank would want. But let's just think in practical terms. Here's a railroad with tracks that need to be repaired. If you take a mortgage, a chattel mortgage, on the rails themselves, just the rail, now, theoretically it might seem that when the rails have been put in place, if you had exercised your chattel mortgage, all you're getting back is the steel and you are not being made whole for the labor that had put that steel in place. But on the other hand, if you went and picked the rails up, the guy could not operate the railroad. So it is sort of like Shylock being able to take the pound of flesh closest to the debtor's heart. The debtor can't survive without it. And while the pound of flesh might not be worth as much as Shylock owned in money, the debtor would have to pay the debt if he could.

Now, it would seem to me that if we simply said, all right, in these cases where we thought it would be appropriate, just take a chattel mortgage on the rails, and then if you put some ties under it, under the actual material that you put in place, that ought to be adequate, I would think, for what we're trying to do. They would still have to pay it off, wouldn't they?

Mr. SULLIVAN. Well, yes, sir. I would be very happy to have our staff explore whether we can come up with some suggestions to make those changes in the legislation. I agree with what you're saying, which is that it doesn't do us much good to have \$1, \$2, or \$10 billion



of authority and appropriations on our program if the mechanism is such that we can't get those moneys out.

Senator LONG. Now, furthermore, I hear from some of these people in the rail business that they're going to have to borrow the money, and then your people, or at least somebody with the Government, if not in your shop, in some shop around here, then wants to go out and take the company's books over and allocate their money for them as between one account and another; which again, from their point of view, makes them feel like, while they would like to take the money and use it to improve the rails, they don't want to do it. They can't do it because they don't want the Government to come in here and try to run their business in detail on these intracorporate decisions.

But it seems to me that you don't need to do that. You have simply—you give them the credit in a situation where, if they are going to stay in business, they're going to have to pay it off. But you ought to come in behind the other creditors, because you don't want to keep the private banks and the other lenders from making credit available to them. But you take a security. That means that if they can survive and if they can stay in business, you are going to be paid; and if they don't survive, you'll come in behind these other creditors who have loaned them money prior to that time, and perhaps somebody who is willing to put some more money into it later on.

But I don't think—and I hope that if you get into it, then I think that we ought to get this settled—we shouldn't be in the position of putting ourselves in shape so that when they borrow money from the Government, they can't borrow money from anybody else thereafter; should we? At least, I don't think we ought to. How do you feel about that?

Mr. SULLIVAN. Well, I think, going to your earlier statement, Mr. Chairman, that when railroads come to us on these programs, they have usually exhausted their other avenues of borrowing. The way the law is written, we have no choice but to treat these in the form of loans that are to be paid back. We have tried very hard to be as liberal as we can, and I can assure you that we will scrutinize our procedures and simplify them to the maximum extent possible. But we are in the posture now of administering a law that says we must look toward the repayment of these loans.

Senator LONG. Let me just give you an example. Let's assume that the railroad needs some rails. It also needs some locomotives. If you make a loan that helps them get some rails, if you don't take a priority position over the guy that makes the loan to buy the locomotives, they can perhaps buy the locomotive and give them a mortgage on the locomotive. But if you are going to take a prior position against the creditors who loan money thereafter, then the fellow who might be willing to loan the money for the locomotive finds he can't make the loan.

Now, all I'm saying is, if we want to help the railroads, we ought to help them, and if we don't want to help them, then we shouldn't help them. But it just amazes me to see all of this money we've made available that has not been used. Now, in other words, here the tracks are there and in terrible shape. How much money did we have this time last year for loans? There was \$600 million in that program to be loaned. How much of that has been loaned out?



Mr. SULLIVAN. I think the amount appropriated for fiscal year 1977 was \$70 million, and we obligated \$60 million of that. There was a later add-on to that which brought it up to \$120 million. That is under section 505 for preference shares. The 511 loan guarantees, which end up costing the applicant higher interest rates, have not been utilized very much. We have questioned why that is so. We think that the people with the greatest need went to the lower interest rates first. In any case, in the next several months we would anticipate obligating another \$200 million between the two programs, and we feel that these programs are moving out and would match the rate at which the funds were actually being appropriated.

Senator LONG. Well, I hope they are. But here's what a staff member handed me. It is my understanding—and I don't care to go into any great depth about it today, because we have other witnesses waiting to testify, and we can explore it later on—but my impression was that we made available \$600 million for that program. Now, here is a chart I have here that I will just ask to be submitted for the record, which shows applications for \$401.9 million, and shows an agreement for \$61.9 million of that \$401 million that has been applied for. Now, that would look to me like it is just 10 percent of what we thought we made available. And if that's the case, then I would be very disappointed. [The chart follows:]

RAILROAD REVITALIZATION AND REGULATORY REFORM ACT OF 1976—APPLICATIONS RECEIVED AND AGREEMENTS EXECUTED AS OF MAR. 31, 1978

[Dollar amounts in millions]

| By applicant                                   | Preference shares    |           | Obligation guarantees |           |
|------------------------------------------------|----------------------|-----------|-----------------------|-----------|
|                                                | Application(s)       | Agreement | Application(s)        | Agreement |
| Chicago, Milwaukee, St. Paul & Pacific RR. Co. | <sup>1</sup> \$102.1 | \$9.3     | <sup>1</sup> \$19.6   |           |
| Chicago & North Western Transportation Co.     | 24.6                 | 24.6      | 17.6                  | \$17.6    |
| Columbus & Greenville Ry.                      | 4.1                  | 4.1       |                       |           |
| Chicago, Rock Island & Pacific RR. Co.         | <sup>2</sup> 72.0    |           | <sup>3</sup> 88.2     |           |
| Illinois Central Gulf RR. Co.                  | 164.7                | 23.9      |                       |           |
| Boston & Maine Corp.                           | <sup>4</sup> 25.9    |           |                       |           |
| Peoria & Pekin Union Ry. Co.                   | 3.5                  |           |                       |           |
| Missouri-Kansas-Texas RR. Co.                  |                      |           | 12.0                  | 12.0      |
| Delaware & Hudson Ry. Co.                      |                      |           | 8.0                   | 8.0       |
| Utah Ry. Co.                                   | 5.0                  |           |                       |           |
| Total                                          | 401.9                | 61.9      | 145.4                 | 37.6      |
| By type of project:                            |                      |           |                       |           |
| Facilities                                     | 397.9                | 61.9      | 20.7                  | 12.0      |
| Equipment                                      | 4.0                  | 0         | 124.7                 | 25.6      |
| Total                                          | 401.9                | 61.9      | 145.4                 | 37.6      |

<sup>1</sup> Being reviewed by new trustee for resubmission.

<sup>2</sup> 3 applications.

<sup>3</sup> 2 applications.

<sup>4</sup> Court problem in Massachusetts is tying up application.

Mr. SULLIVAN. In the section 511 loan guarantee program, there is an authorization for \$600 million, and we have been very disappointed and have been trying to determine why there haven't been more applications. As of this date, we only have \$140 million of applications under this program. I think the people in the most dire need chose to go for section 505 funds, where, as an inducement to give track projects the highest priority, we offered the lowest interest rates and the



longest moratorium on repayment; and we think that that is perhaps some of the reason. We now see a broader spectrum of people expressing interest in these programs. And, as I say, we have under consideration right now, another \$200 million of assistance.

Senator LONG. Well, it seems to me that we ought to say, if we leave the bill like this, to get rid of this pauper's oath business, so that in order to borrow some money, a fellow doesn't have to destroy or reduce his capacity to borrow money from somebody else, from private sources. Now, that is No. 1.

No. 2: Reach some understanding as to minimal amount of security, so that where they've got something they can pledge to borrow money from other sources, the Government doesn't go hog up all of their potential of borrowing from private sources in order to get some of the Government's money.

And then, three, take a look to see what else there is involved in this thing, like the interference in other aspects of the business, and get that out of there. So that if somebody wants to borrow some money, he can come up and borrow some money where he is pledging. If that were me, I would take no more security than the rails and ties themselves. He just pledges what he's getting out of it, that you can go pick it up, if need be, and then—which, of course, would put him out of business if you did, because if he's got a 10-mile stretch of road with no tracks on it, he can't roll a train down it. But then proceed to say that he has a long period of time to pay it out, and if you are as reasonable as you can afford to be on the repayment terms, you ought to do some good here.

But we ought to fix it up so that all the people who need the help to improve their rails and roadbed can get it, and so that it is on terms that don't prevent them from operating efficiently and effectively in getting credit they need in other connections. And I hope very much that you will look at that. And then let's get back together then, perhaps at a hearing or perhaps just at a meeting, and talk about what can be done, because I want to make the program work. And if we made \$600 million available and we've only got \$61 million of it moving out into something that we hoped to have \$600 million worth on, we would like to step it up.

Mr. SULLIVAN. We would be happy to work with you on that.

Senator LONG. Thank you very much.

Mr. SULLIVAN. Thank you, sir.

[The statement follows:]

STATEMENT OF HON. JOHN M. SULLIVAN, ADMINISTRATOR, FEDERAL RAILROAD ADMINISTRATION

Mr. Chairman, recent major accidents at Pensacola, Florida, on November 9, 1977, at Waverly, Tennessee, on February 22, 1978, and at Lewisville, Arkansas, on March 29, 1978, in combination with an incident of apparent vandalism near Youngstown, Florida, on February 26, 1978, have once again focused national attention on the railroad safety problem.

Over seven years after passage of the Federal Railroad Safety Act of 1970, a problem which was to have been corrected by the adoption of comprehensive Federal regulations has, in some instances, worsened instead of diminished. Our duty here today is to report to the Subcommittee on the scope of the railroad safety problem, the underlying causes of the problem, and the steps we are taking to fulfill our responsibilities.



In preface to this discussion, we wish to affirm to the Subcommittee that we intend to do everything in our power to bring about an acceptable level of safety on the Nation's railroads. The Secretary of Transportation, as you know, is himself intimately familiar with this problem. He has given the Federal Railroad Administration a mandate to do everything which can be done to assure compliance with the Federal railroad safety laws and regulations.

If temporizing has been a problem in the past, it is not a problem today. If Federal inspectors have doubted the degree of commitment to railroad safety among persons in policy roles, they have no reason to feel that way today. Indeed, recent months have been characterized by intensive work, often long hours, and close coordination among our Field inspectors and the leadership in Washington. While it is too early to measure the results of our efforts, common sense tells us that we will have a positive impact. With that preface, we turn to the current accident picture.

#### TRENDS

Over the past 50 years freight revenue ton miles have increased more than 250%, but the rail share of the intercity freight market has decreased by over 50%. In addition, railroad employment has dropped 70% and intercity passenger traffic decreased from 77% to six percent. In short, there are fewer passengers and employees, but more freight.

The casualty trend has generally been decreasing over the past several years while, after adjusting for inflation, the loss and damage to track, roadbed, equipment and lading has increased by about 25%.

#### FATALITIES

The largest percentage (almost 63%) of total fatalities made up of persons killed in grade crossing accidents. In 1977, there were 946 fatalities due to grade crossing accidents.

Trespassers account for approximately 30 percent of the total fatalities, or 455 in 1977.

Employee fatalities have comprised approximately seven percent of all railroad accidents fatalities over the past several years. Employee fatalities have decreased from a recent high of 190 in 1969 to 99 in 1977, a 48 percent reduction. It should be noted that FRA statistics are quite inclusive, so a number of these deaths annually are from highway accidents involving carrier automobiles, trucks, or vans. A number of these deaths also involve industrial or construction hazards such as those common to other industries, areas covered by the Occupational Safety and Health Administration (OSHA). We will discuss our relationship with OSHA in a minute.

Passenger fatalities account for less than one percent of total railroad accident fatalities.

#### Injuries

In 1977, there were 61,029 injuries to railroad employees. This is a 5.4 percent increase over 1976 and constituted over 91 percent of total railroad injuries. FRA reporting requirements for the railroad industry were significantly changed in 1975 to conform with the reporting requirements imposed by the Department of Labor on all other segments of American industry. These new reporting requirements have greatly increased the number of personal injuries to be reported. Therefore, rates of injury prior to 1975 are not comparable with injury rates following the implementation of the reporting revisions. However, in 1974, under the previous reporting requirement, employee injuries still constituted almost three-fourths ( $\frac{3}{4}$ ) of the total injuries.

After normalizing for changes in hours of employment employee injuries remained fairly constant in the period 1966-1974 with the major causes as follows:

| Major cause:                                              | Percent of total employee injuries |
|-----------------------------------------------------------|------------------------------------|
| Getting on or off trains.....                             | 16.6                               |
| Construction and maintenance of cars and locomotives..... | 12.2                               |
| Construction and maintenance of track.....                | 8.9                                |
| Stumbling, slipping and falling (not on train).....       | 7.9                                |
| Coupling and uncoupling.....                              | 6.6                                |
| Flying or falling objects, burns, etc.....                | 4.8                                |



Of all the employee categories, trainmen and enginemen accounted for 55 percent of employee injuries. The yard brakemen and yard helpers, a subset of trainmen and enginemen, have by far the largest problem considering a combination of frequency and severity of injuries.

Of the remaining nine percent of total railroad injuries, seven percent resulted from grade crossing accidents and the remaining two percent of all injuries were incurred by trespassers and passengers.

#### *Train accidents*

Train accidents have increased since 1966 and there has been a corresponding increase in their costs. After adjusting the monetary threshold for inflation and normalizing for changes in ton mileage, the increase in train accidents has been approximately 15 percent. Train accidents per million train miles increased by 6.1 percent in 1977 over 1976. By contributing cause; defects in way or structures (track) account for 43 percent; equipment failures, 25 percent; human factors, 20 percent; and all other causes, 12 percent.

Track is not only the largest but also is the most rapidly increasing contributing cause. The increase in track-caused accidents has been 105 percent since 1966, but there has been a 15 percent decrease in both equipment and human factor caused accidents and a slight decrease in accidents attributed to miscellaneous causes.

Collisions have decreased by 15 percent since 1966, but derailments have increased over 40 percent, with defects in track the largest and most rapidly increasing single cause of derailments.

Increased axle loadings appear to be related with increased track-caused accidents. This is due to increased wear and tear on the roadbed without an attendant increase in the maintenance of the roadbed to allow for these changes. Additional research is being conducted to determine the specific relationships between increased axle loadings and track-caused accidents with respect to the types of problems generated and appropriate remedial action.

Car dynamics (principally the "rock and roll" effect caused by a high center of gravity in association with otherwise tolerable track irregularities) has been identified as a major cause of train accidents (specifically derailments) and has fostered a steadily upward trend in both the number of equipment caused derailments and the dollar damage caused by these derailments.

#### *Hazardous Materials Accidents*

In 1977, there were approximately 500 derailments involving placarded tank cars. In those 500 accidents, a total of 1,400 tank cars derailed. Approximately 150 of these cars released hazardous materials. In 1977, there were four fatalities, 500 injuries (150 of which were serious) and 14 evacuations involving a total of 19,000 people.

The Waverly, Tennessee, accident of February 22, 1978, resulted in the loss of 14 lives, the hospitalization of some 50 people, and the evacuation of over 2,000 people from their homes.

#### *Dollar Costs*

After adjusting for inflation, total costs to the carriers resulting from all railroad accidents rose 38 percent between 1966 and 1975 and increased from 2.4 percent of operating revenues to 3.5 percent. Since net rail income in the 1970's has declined significantly as a percentage of operating revenues, accident costs are beginning to play an even more crucial role with respect to the economic health of the industry.

#### UNDERLYING CAUSES

The underlying causes of the numerous kinds of railroad accidents are, of course, many and varied. No single explanation is appropriate for all areas of concern.

FRA is concerned that we know relatively little about why employee injuries in general continue to remain at significant levels. This is an area which will require more detailed analysis. Poor maintenance of locomotives and safety appliances and poor operating practices are, of course, among the major factors with which we deal every day. FRA also investigates all employee fatalities. We know as a result of those investigations that a great number of fatal accidents result from lack of vigilance to inherent transportation hazards.

Significant progress has been made in the grade crossing problem through the efforts of the states, the railroads and the Department of Transportation, but



increased automotive traffic has kept absolute casualty figures at significant levels.

The train accident problem, of course, is the problem on which most public attention is now concentrated.

There are now 135,000 tank cars in hazardous materials service. In 1976, there were one million placarded tank carloads transported, with an estimated tonnage of 80 million. The transportation service provided totaled 2.4 billion ton miles. While most train accidents involve relatively small losses and no injury to persons, the carriage of large quantities of hazardous materials through populated areas together with obvious hazards to train crews make the train accident situation serious.

As noted above, train accidents are generally attributable to track, equipment, and human factors. The track and equipment areas are the most easily addressed through regulation, although FRA has regulated in all three fields.

We believe that strict carrier adherence to existing track and equipment standards would reverse the train accident trend and materially reduce the number of train accidents. However, among many railroads, compliance with the regulations is poor.

Poor compliance on individual properties is itself caused by several identifiable factors or some combination of these factors. Regardless of the extent of efforts to comply, widespread deferral of track maintenance over the past 25 years continues to take its toll. While individual carriers have either maintained track in good condition or have instituted commendable catch-up programs in the last few years, the industry as a whole is suffering from a long-term net disinvestment in track and roadbed.

Equipment maintenance has also been neglected. Whenever operating income falls, car repair forces tend to be reduced, and equipment inspection and repair efforts inevitably fall off.

The poor economic condition of the industry has also promoted reliance on heavier equipment designed to carry almost twice as much as the conventional cars of 30 years ago. By reducing the labor component of overall costs in this way and by instituting other measures the rail industry has been better able to compete with other surface modes which have benefited from massive indirect subsidies. Larger and heavier cars interact to produce greater forces on other equipment and track structures. Small deviations from standards which in earlier days would have been tolerable seem now to become critical. Maintenance and rehabilitation programs seem not to keep pace with the damage done by heavy axle loadings.

This is the reality we face in 1978 with respect to the economic condition of the industry. At the same time, FRA is aware that many safety problems are the result of poor maintenance and inspection activities in circumstances where little or no additional outlay of funds would be required to comply with applicable standards and procedures. Most often, but not always, persistent neglect of this kind can be attributed to an indifference on the part of management or a failure by management to hold supervisors and employees accountable for compliance.

FRA's basic role in relation to the train accident problem should be clearer. First, FRA must use administrative orders, penalties and persuasion to hold in check the tendency of some carriers to take chances with the public safety. We hasten to add that many railroads have good records of compliance with Federal standards and excellent safety programs on their own properties.

Second, FRA must assist carriers in identifying dangerous conditions or practices which otherwise might go unnoticed, insisting that accountability systems are instituted to forestall the repetition of such problems.

Third, FRA must increase its emphasis on predicting the development of problems such as those which have been experienced with uninsulated tank cars, heavier freight cars generally, and certain of the newer locomotives. FRA must stand ready to compel remedial action before major disasters occur, rather than after the damage is done. It is this responsibility which is most difficult, however, because of the formidable technical and practical problems associated with attempting to predict future events.

#### THE FRA RESPONSE

For the balance of this statement we would like to address what FRA has done and is attempting to do to promote railroad safety. Our first priority is the enforcement of those railroad safety laws entrusted to the Secretary of Trans-



portation, together with regulations issued under those laws. We would like to mention in that connection the requests for the new resources contained in the President's Budget. However, we also have important work to do in the area of regulatory development. The program relies heavily on research and testing. Through cooperative efforts of various kinds we learn a great deal from the industry, labor groups and other parties and attempt to perform a reciprocal educative function as well. Finally, the special concerns of our relationship with the Occupational Safety and Health Administration and the State Participation Program deserve separate comment. We would like to discuss briefly each of these areas of FRA activity.

#### ENFORCEMENT

FRA field compliance activities are directed to two basic objectives: motivating the railroads to comply with the safety laws and regulations; and assuring that the railroads understand what is required. In pursuing those objectives FRA inspectors also assist carriers by identifying local situations where supervision is failing to execute carrier safety programs.

In many cases, railroads follow the safety recommendations of our inspectors on a voluntary basis, obviating the necessity of FRA bringing into play its full range of enforcement tools. Despite this generally cooperative spirit, however, FRA has increasingly found that the use of out of service orders, penalties, and other legal tools is both necessary and appropriate.

Nowhere is this more obvious than in the area of civil penalties. In Fiscal Year 1977, penalty collections amounted to over \$3.4 million, an increase of approximately 126 percent over Fiscal Year 1976, the previous record year. Collections are expected to increase substantially in FY 1978 both because of more aggressive collection and because of the statutory increase in penalty amounts.

Since January 1, FRA attorneys have reviewed and transmitted to the carriers over 240 files containing claims of violations with total assessment exceeding \$7.8 million. Included among these are 26 files alleging violations of the Track Safety Standards, an area of particular concern in derailments. The penalties assessed for the track claims exceed \$1,200,000. Increased penalties alert the industry that we will no longer tolerate lax compliance with safety regulations and the resultant increase in accidents.

The application of legal sanctions in the area of hazardous materials transportation has also been dramatically increased in recent months.

Prior to the passage of the Hazardous Materials Transportation Act of 1974 (HMTA), violations of hazardous materials regulations were enforceable only by the institution of a criminal case in the Federal Courts by the appropriate United States Attorney. Fines were nominal. As a result of other demands on prosecutorial resources, these cases were not given high priority by those offices. Thus, there was a lack of active enforcement of these regulations in the past. There has, however, been vigorous enforcement of violation of Emergency Order No. 5, which was issued under the Federal Railroad Safety Act of 1970 after the Decatur, Illinois, disaster in order to regulate the switching of tank cars containing flammable compressed gas. In FY 1977 and the first half of FY 1978, 48 of these claims were reviewed and transmitted to the carriers. Of these, 19 have already been settled for a total of approximately \$24,000 and another three have been tentatively settled for \$6,000.

On January 3, 1977, the Materials Transportation Bureau reissued the more comprehensive hazardous materials regulations under the authority of the HMTA, making these regulations subject to civil as well as criminal penalty sanctions. Since that time, we have been conducting a series of classes to familiarize our inspectors with the new regulations which have begun to generate an increasing volume of violation reports.

On October 28, 1977, FRA published in the Federal Register its procedures for carrying out these sanctions. These procedures call for direct handling of the claims by the Office of Chief Counsel, and we wish to assure this Committee that this enforcement effort is now receiving top priority in that office. Since January 1 of this year, notices alleging 26 violations against shippers by rail for a total proposed assessment of \$153,000 and 103 violations against carriers for a total proposed assessment of \$258,000 have been issued by that office. With respect to these claims, the Office of Chief Counsel has already issued several orders assessing civil penalties and is engaged in active informal negotiations of the remaining counts. A formal hearing has been requested on 22 counts.



Due to our concern over the recent accidents and derailments involving hazardous materials, we intend to continue this effort of vigorously enforcing these regulations.

FRA will implement a uniform policy of safety enforcement towards all carriers regardless of financial condition. Treating financially weak carriers more leniently in the enforcement of civil fines would reduce the incentive of those carriers to apply limited resources to correct conditions that are violative of Federal safety requirements.

Penalty sanctions are but one tool, however, and we are both continuing the use of traditional non-monetary sanctions and seeking new ways of using our available tools in combination with one another.

In 1977, FRA inspectors ordered out of service 392 seriously defective locomotives. In the current calendar period, we have intensified this effort, making clear to our inspectors that the deterioration of locomotive fleets on some of the properties must not be allowed to continue.

We have also had occasion to invoke the emergency powers granted to the Secretary in the Federal Railroad Safety Act. Our investigations revealed that the Illinois Central Gulf Railroad (ICG) had allowed vines, trees and other vegetation to grow around and into the poles supporting the signal lines and entangled the lines themselves, causing several known instances of false proceed signals. Although we gave the ICG several warnings regarding the deteriorated condition of this line, they chose not to devote sufficient funds and personnel to the projects. Because of our concern for the safety of train crews operating over this line, on December 7 we issued Emergency Order No. 6 ordering the line in question out of service until the vegetation had been cleared from the signal lines.

The railroad succeeded in obtaining a court injunction rendering our order unenforceable. However, before a hearing on the merits which was to occur seven days after we issued the emergency order, the railroad committed 75 employees and 16 bulldozers to the project and had substantially cleaned all the vegetation from the signal lines. The Administrator revoked the emergency order before the court hearing on the merits as the emergency condition had ceased to exist due to the efforts of the railroad.

We have come quite close to ordering the cessation of service in a number of other instances in the past few months, but the railroads involved took appropriate action to abate hazards when we made clear to them that we were willing to take whatever action might be required in the interest of safety.

In a major exercise of the emergency powers, FRA acted on March 23, 1978, to require the removal from service of 1% carbon content freight car wheels which have experienced an unusually high failure rate. A total of 270,820 70-ton 1 percent carbon cast steel wheels (commonly referred to as "70T U-1 wheels") were produced during the period 1958-1969. No "70T U-1 wheels" have been produced since late 1969. The relatively high carbon content in these wheels (all wheels produced since 1970 contain not more than .75 percent carbon) reduces wheel wear. However, it also increases the susceptibility of these wheels to thermal abuse or cracking as a result of heat generated when the brake shoes are applied to these wheels during heavy, prolonged braking.

During the month of February 1978, two major accidents occurred which involved the failure of "70T U-1 wheels" and the derailment of trains carrying hazardous materials. The first accident occurred at Waverly, Tennessee, on February 22, 1978. On February 24, 1978, a derailed tank car containing liquified petroleum gas (propane) exploded, resulting in the death of 14 persons and injury to approximately 50 persons. The force of the explosion destroyed two city blocks and caused much additional damage.

The second major accident involving the failure of a "70T U-1 wheel" occurred on February 28, 1978, at Bristow, Kentucky (near Bowling Green). Although the accident resulted in no casualties or release of hazardous materials, 33 cars were derailed at a speed of 48 m.p.h. causing extensive damage to equipment and lading.

On March 14, 1978, the FRA initiated a special safety inquiry to obtain sufficient information concerning the nature and scope of the safety problem presented by these wheels to devise an effective solution that can be implemented as soon as possible. A public hearing was held on March 17, 1978.

As a result of this hearing, FRA issued an emergency order restricting the use of freight cars with high carbon cast steel wheels, prescribing a mandatory pro-



gram for locating those wheels and removing them from cars, and requiring that all these wheels be removed from service before January 1, 1979.

The vigorous assessment of penalties and use of other sanctions will fall short of optimum effectiveness, however, unless we focus our field compliance resources on areas of greatest need. At the present time we are concentrating many of our inspectors on those carriers with a recent record of serious accidents. Our inspectors play the dual role of helping to diagnose the problems giving rise to serious accidents and forcing the remediation of those problems. We believe that by being persistent we can force less cooperative carriers to make difficult choices concerning the commitment of resources and the upgrading of inspection and maintenance practices.

We are hopeful that the Carrier Performance Profile which we currently have under development will help us identify problem areas by quantifying each railroad's accident record, its compliance record, and its record of defects. Our High Accident Corridor Program, which we will discuss in connection with our rule-making effort, should also assist us in this area.

Altogether, we are moving toward a better coordinated and more muscular safety enforcement program.

As explained earlier, Track caused accidents comprise 43 percent of the total accidents. These accidents can be reduced by increased surveillance and increased carrier maintenance. Even if carriers defer maintenance, the number and severity of accidents can be reduced through the reaction of track speed classification and, if necessary, closing of sections of track. Fifteen additional track inspectors are requested for fiscal year 1979 to perform the increased surveillance. Approval of this request would raise the number of authorized Federal track inspectors to 95, representing a 40% increase under the new Administration. In addition to the 15 new track inspectors, we are requesting three clerical support positions for the field staff and seven new positions for Safety Headquarters to provide the necessary evaluation support for the Automated Track Inspection Program (+4) and the Data Management Program (+3). The analyses performed in connection with these programs on those areas of greatest need.

The total request for 425 Federal positions under the Railroad Safety Appropriation represents an increase of 25 positions over fiscal year 1978 and a total increase of 49 positions over fiscal year 1977.

Furthermore, there are currently 23 states participating in the Grants-in-Aid for Railroad Safety Program with 38 track inspectors and 19 equipment inspectors. In the last 18 months, there has been a 70 percent increase in both the number of states and the number of inspectors participating. We anticipate having 30 states participating by the end of fiscal year 1978 with 100 inspectors or trainees, a level which we plan to maintain during fiscal year 1979.

#### AUTOMATED TRACK INSPECTION PROGRAM (ATIP)

The Automated Track Inspection Program is designed to provide FRA field investigators with a set of measurement tools that will increase their capability to determine carrier compliance with the Federal Track Safety Standards. These tools are in the form of high speed full-size geometry measuring vehicles and highway-rail vehicles equipped with ultrasonic rail flaw detection equipment. The use of both of these types of vehicles will provide the Office of Safety with much needed data on track conditions.

The use of geometry measuring vehicles allows the field investigators to focus their attention on those areas of carrier high-speed trackage where problems exist. While the vehicles do not identify specific defects like broken angle bars, switch defects or bad ties, they do, by measuring various geometric parameters of the track, indicate critical areas. Using the data generated during each survey, the FRA track inspector can conduct on-the-ground monitoring activities, concentrating on these critical areas.

Three units are operating in this phase of the program. It is anticipated that the three vehicles will be capable of gathering track geometry measurements for over 75,000 miles of track per year.

A single highway-rail vehicle equipped with ultrasonic rail flaw detection equipment capable of measuring two basic geometry parameters, gage and cross-level, is presently in the field and will be available for use by track inspectors in the near future. A second vehicle will be in operation later.



The purpose of the vehicles will be to monitor carrier compliance with Section 213.113 of the Track Safety Standards—Defective Rails. The vehicles will inspect for internal defects on predetermined segments not to exceed 10 percent to 15 percent of the total mileage between designated points. The geometry instrumentation will be operated over the entire route. This will be primarily done at speeds between five and 15 m.p.h. on tracks with a maximum authorized speed of 30 m.p.h. or less.

Because of the slow operating speed, visual observation of the track structure can be made with little difficulty. This permits the FRA track inspector to observe not only geometry defects but also the condition of bolts, ties, bars and ballast for examples.

#### REGULATORY ACTION PROGRAM

##### *The rulemaking process*

FRA has been granted broad regulatory authority to identify and address all areas of rail safety. The FRA safety program has been built around the issuance of regulations and monitoring of railroads for compliance with the regulations. The program proceeds on the assumption that the standards are correctly conceived and that compliance with them will enhance safety.

In conjunction with Departmental policy designed to ensure that both proposed and existing regulations do not impose unnecessary burdens upon the private sector, consumers, or Federal, State and local governments, the Office of Safety has formed a task force to improve the soundness and clarity of proposed regulations and to eliminate unnecessary or unduly burdensome regulations. The task force will: 1. review existing regulations to ensure continued economic soundness and necessity; 2. assess proposed regulations in terms of cost to the general public, industry and government; and 3. justify the need for any proposed regulation deemed either potentially costly or controversial.

FRA works closely with labor and industry in formulating and amending our safety rules.

FRA prepares special analyses of economic impact to determine probable costs and benefits of pending regulations which are potentially costly or controversial. To improve our performance in this area, we have awarded a contract for the development of economic and cost benefit analysis in support of the FRA regulatory function. This study will provide an improved methodology to be used in evaluating the effectiveness of the Agency's regulations and all proposed remedial safety actions in promoting the safety of the Nation's railroads.

For many years the Office of Safety has been collecting accident reports of various types from all of the Nation's railroads. In general, this data has been used primarily in the formulation of the regulations used in promoting safety for the railroad industry, and to provide FRA with information concerning hazardous conditions associated with track and equipment operated by these railroads.

Under another contract an analysis will be conducted to evaluate the adequacy of the available data bases and the relevance of data collected in inspecting the railroads. This will serve to pinpoint the areas of deficiency in the data base and identify other parameters of value for use in future evaluations.

##### *Hazard analysis and priority determination*

FRA must rely on hard data and credible analyses in identifying safety hazards, planning countermeasures to attack those hazards and determine resource allocations on a priority basis.

Although we perform sorting and tabulations of accidents by various means which aid in identifying some of the problem areas, more in-depth analyses are necessary to assist in determining accident causes and potential problems.

We have awarded a contract to the Transportation Systems Center (TSC) to assist FRA in determining underlying accident causal factors and to forecast the number and severity of accidents and accident exposure. From this, TSC will make a systematic assessment of the cost and effectiveness of measures available to the Office of Safety to combat these dangers to provide a rational foundation for applying FRA resources to inspection, enforcement, and regulatory activities.

The determination of an appropriate mix of countermeasures will, of course, consider not only the cost to FRA to implement each alternative, but the cost to the industry and the public as well.



### *High accident corridors*

The Office of Safety is utilizing the nationwide transportation corridor density maps to show the geographical location of rail accidents. The accident data can then be readily displayed on maps in order to show the geographic distribution of the various accident variables including hazardous materials accidents or incidents, population density, traffic pattern, track conditions and Federal and State inspection activities.

Under the Hazard Analysis and Priority Determination contract, TSC is characterizing the flow of hazardous materials over the Nation's rail network and will utilize this high accident corridor information to aid in assessing the current and future exposure and risk associated with the rail transportation of hazardous materials.

### *Recent rulemaking activity*

The primary area for rulemaking activity other than that statutorily mandated is the transportation of hazardous materials. The current retrofit timetable for 112 and 114 tank car calls for:

1. Existing specification 112 and 114 tank cars used to transport flammable gases are required to have both thermal and tank head protection and are to be retrofitted over a four-year period ending on December 31, 1981.

2. Existing specification 112 and 114 tank cars used to transport anhydrous ammonia are required to have tank head protection (such as a head shield) installed and are to be retrofitted with this protection over a four-year period ending on December 31, 1981.

3. All specification 112 and 114 tank cars are to be equipped with special couplers designed to resist coupler vertical disengagements. These couplers are to be retrofitted on all cars by July 1, 1979.

The recent major hazardous materials accidents directed attention toward the possibility of accelerating the retrofit timetable for 112 and 114 tank cars. While the retrofit timetable is part of the hazardous materials regulations issued by the MTB, it is the result of joint efforts of both the FRA and the MTB. In accordance with internal Departmental procedures, the FRA develops the substantive requirements of these regulations that pertain to the rail transportation of hazardous materials and the MTB performs a review function and issues the regulations. The revision of the retrofit schedule is basically a technical matter.

In order to obtain sufficient information to determine whether the existing tank car retrofit schedule can be accelerated the FRA conducted a special inquiry on April 7, 1978. At FRA's request the AAR, NTSB, tank car builders, coupler manufacturers, shippers and other interested parties actively participated in this inquiry by providing knowledgeable witnesses and pertinent manufacturing and maintenance data.

FRA has reviewed the information we received as a result of this inquiry and within a week we will be making an appropriate recommendation to MTB concerning the retrofit schedule.

Many DOT specification 105 tank cars are used to transport the same products as are transported in 112 and 114 tank cars. In addition, the 105 insulated pressure tank cars carry other more hazardous products such as chlorine, hydrogen chloride and hydrocyanic acid. Yet the 105 tank cars may not have as good thermal and tank head puncture resistance protection as is being specified for the 112 and 114 cars. The FRA, therefore, conducted a special safety inquiry, on April 13, 1978, concerning the need to improve present safety standards for the design and construction of new and existing DOT specification 105 tank cars.

The AAR, NTSB, tank car builders, coupler manufacturers, and other interested parties actively participated in this inquiry by providing knowledgeable witnesses and pertinent technical manufacturing service and cost data.

As a result of this inquiry, the FRA is considering development of improved safety standards for the design and construction of 105 tank cars that will be at least equivalent to those prescribed for 112 and 114 tank cars. Among the items under consideration to minimize the hazards associated with transportation of these products are improvements in couplers, tank head protection, thermal protection and safety relief devices.

Due to a series of serious accidents involving uninsulated pressure tank cars transporting these materials and to the requirement for help from the industry, the FRA undertook a program of tank car research at a cost of \$5 million. The



result of this research and FRA's analysis of hazardous materials accidents was the issuance of regulations by the Department's Materials Transportation Bureau which implement performance specifications developed.

Another major rulemaking in the hazardous materials area was the issuance on October 28, 1977, of procedures for the enforcement of the regulations as authorized by the Hazardous Materials Transportation Act of 1974. The procedures call for a response by the respondent within 30 days of the issuance of a notice of probable violation by the Office of Chief Counsel. A right to a formal hearing is provided.

The FRA recently reviewed reports of all derailments caused by wheel deficiencies during the period of November 1, 1976 through December 31, 1977. During this 14 month period, railroads reported a total of 502 derailments caused by wheel deficiencies on cars identified by ownership and car number. Of these 502 derailments, 87 or 17.3 percent were attributed to wheels on Trailer Train Company (TTX) cars. These derailments were not concentrated in any single series of cars nor on any particular railroad.

The TTX has a fleet of approximately 78,600 freight cars. These cars constitute approximately 4.6 percent of the Nation's fleet of 1,700,000 freight cars. TTX cars generally are assigned to high speed service where they experience more heavy braking and accumulate considerably more mileage than most cars. Nevertheless, the fact that the 4.6 percent of the Nation's car fleet that consists of TTX cars is experiencing 17.3 percent of the Nation's derailments attributed to wheel deficiencies warrants further investigation and prompt initiation of appropriate corrective measures. FRA, therefore, initiated a special safety inquiry, conducted on March 30, 1978, concerning the safety performance of freight car wheels on TTX.

The purpose of this special inquiry was to obtain sufficient information (to enable the FRA to define the nature and scope of this safety problem in order to devise and implement an effective solution as soon as possible without unduly disrupting essential rail service.

At FRA's request the Association of American Railroads (AAR), the American Short Line Railroad Association, TTX, wheel manufacturers, the NTSB, the Brotherhood of Railroad Carmen (BRC), the United Transportation Union (UTU), and several major railroads actively participated in this inquiry by providing knowledgeable witnesses and pertinent maintenance, service, accident and manufacturing data.

The FRA is reviewing the information we received as a result of this inquiry and will initiate appropriate action in the near future.

FRA has had a final rule in effect since June 1, 1976, providing blue flag protection of railroad employees engaged in servicing activities which require them to work on, under, or between rolling equipment. The 1976 safety amendments (Public Law 94-348) prescribed additional protection in the form of locking manually operated switches against movement onto tracks where employees are working. On November 2, 1976, FRA published a notice of proposed rulemaking to implement that mandate of the amendments and to clarify the existing regulations. The final rule, published January 11, 1977, provides further clarification with respect to applicability to train and yard crews and to operations within repair facilities. However, additional problems have been experienced in constraining the Congressional mandate as implemented by the current rules, and further rulemaking is underway to resolve these issues.

Also in accordance with the 1976 amendments, the FRA published a final rule on January 11, 1977, establishing a single performance standard for highly visible rear-end marking devices for passenger, commuter, and freight trains. After examining the variety of circumstances in which rear-end protection might be required, FRA has developed a conspicuity standard and procedures for qualification of devices. Given the use of existing locomotive headlight technology by the industry, it does not appear that passive or retroreflective markers will qualify. The Association of American Railroads has submitted a petition for reconsideration in connection with the rulemaking, but the effective date is now set for July 1, 1978.

On January 27, 1977, FRA published final rules setting minimum standards for the use of radio communications in railroad operations. These were adopted in accordance with a NTSB recommendation after study indicated their feasibility, value, and slight cost to the industry.



Additional activities include the issuance pursuant to the Noise Control Act of compliance regulations and procedures for the issuance of compliance orders under the Federal Railroad Safety Act of 1970.

The 1976 amendments also required that any new construction or reconstruction of crew sleeping quarters be located outside the immediate vicinity of any railroad switching or humping operations. Interim regulations have been in effect since December 3, 1976. Due to the need to compile data and to study comments initially received as well as those received after an extension to January 14, 1977, the final issuance of the rule has been delayed. It has, however, already been prepared and will be published in the very near future.

The extension of the coverage of the Hours of Service Act to hostlers and signal maintainers by the amendments contained in the Federal Railroad Safety Authorization Act of 1976 necessitated the issuance of a statement of agency policy and interpretation and several technical changes in the regulations. A proposed statement of agency policy and interpretation was issued September 28, 1976, and a more comprehensive interim statement was issued January 25, 1977. A final statement awaits the outcome of proposed technical amendments to the 1976 amendments. On January 28, 1978, FRA issued regulations making technical changes primarily in recordkeeping.

Advanced notices of proposed rulemaking have been issued on safety standards for caboose cars, glazing materials for locomotive cabs, cabooses and passenger cars, maintenance of highway grade crossing protection devices, and locomotive strobe lights.

#### SAFETY RESEARCH AND DEVELOPMENT

FRA's Safety R&D program encompasses all forms of support, from direct support of rulemaking activities to support of other activities such as improved safety inspection equipment, development of the knowledge to permit safer equipment to be designed, etc. The program also includes the analytical support to define what R&D should be done, how it should be done, when and why it should be done and who should do it.

The continuing high rate of railroad accidents mandated that FRA concentrate its R&D efforts on producing significant near term safety improvements. Safety R&D has the highest priority among R&D programs. While incorporation of research results in a lengthy process, past research efforts have produced substantial results while building the foundation for future safety improvements. The two major safety oriented programs are the Safety Research Program, and the Improved Track, Inspection and Data Acquisition Technology Program.

The Improved Track, Inspection and Data Acquisition Technology Program, which is authorized under the DOT Act of 1976, is divided into two subprograms, Improved Track Structures, and Inspection and Test Support Services.

The primary objective of the Improved Track Structures subprogram is to prevent track-caused accidents. The outputs from this subprogram form the basis for recommended changes to FRA's Track Safety Standards. Major outputs obtained thus far include:

- Development of computer models to predict track performance and component stress.

- Evaluation of a process which greatly reduces bolt-hole cracks and subsequent rail failure.

- Development of a methodology for analyzing track stability. This is currently being used to develop track safety guidelines.

- Completion of Amtrak locomotive tests to assess derailment mechanism, resulting in decision by the manufacturers to modify the locomotives to resolve the problems.

Examples of future planned projects include:

- Definition of safe track load capacity.

- Development of safe track design criteria.

- Development of a track stiffness measurement system.

- Determination of required frequency of rail flaw detection and critical flaw size.

The Inspection and Test Support Services subprogram is aimed at the development of track and vehicle inspection systems and devices. An additional objec-



tive is the development and application of a methodology to evaluate safe service life of track and vehicle systems and components. Advancements in track inspection technology are implemented via the Automated Track Inspection Program to check compliance with the Track Safety Standards. Prior major projects include:

- Development of high speed, all weather track geometry measuring system and a low speed rail flaw detection system.

- Development of an automatic device for detecting hot bearings.

Future efforts will focus on obtaining outputs such as development of a high speed rail flaw detection capability, enhancement of track geometry measurement systems, evaluation of on-board and wayside vehicle inspection systems, and development of guidelines for evaluating the safe life of locomotives.

The Safety Research Program, which is authorized by the Safety Act, consists of three subprograms: Grade Crossing, Human Factors, and Rolling Stock.

The objective of the Grade Crossing subprogram is to reduce the number of grade crossing accidents through improvement in the performance and credibility of train detection and warning devices. Major prior projects have included the development of strobe lights to improve locomotive conspicuity and lower cost and more reliable grade crossing protection devices. Significant achievements expected in the future include development and evaluation of constant warning time systems and alternatives for increasing freight car conspicuity.

The Human Factor subprogram addresses accidents related to human error and man-machine interactions. Examples of major prior projects are as follows:

- Development of a Draft Buff Indicator, a device which depicts the distribution of stretching and compressing forces throughout a train, enabling the locomotive engineer to alleviate dangerous forces by either braking or accelerating.

- Completion of performance specification for the Research Locomotive and Train Handling Evaluator which will be used to evaluate train handling aids, procedures and environmental effects on operator performance.

- Development of a totally new locomotive cab concept with improved visibility, crash protection, and operator controls and displays.

Future efforts will concentrate on the design, fabrication, and application of the Evaluator to a wide range of human factors experiments. Greater emphasis will be placed on developing countermeasures to occupational injuries to railroad employees. Other outputs will include guidelines for crew vigilance devices and procedures previously tested on FRA's Facility for Accelerated Service Testing (FAST) and evaluation of the new cab design.

The Rolling Stock subprogram is directed toward reducing the likelihood and severity of accidents caused by equipment defects or limitations and adverse track-train interactions. Specific projects address hazardous material transport, train dynamics and operation, vehicle occupant protection, component failures prevention, and improved braking systems.

As we have indicated, performance specifications were issued last Fall for cars carrying liquefied flammable gases and ammonia and appropriate implementation is in process. The Safety devices included in the performance specification (couplers, head shields, and insulation materials) successfully withstood 95,000 miles of testing on our Facility for Accelerated Service Testing (FAST). Other major outputs recently obtained from Rolling Stock subprogram include:

- Performance specifications for rear-end markings which were incorporated in a rule.

- Performance specifications and supporting data for rail vehicle glazing materials for the protection of railroad employees from acts of vandalism.

Major future activities expected from this subprogram include performance specifications and operational guidelines for cars carrying radioactive and explosive cargoes. In addition, performance specifications will be developed for braking systems and other critical vehicle components, such as wheels, axles and bearings. We will also be evaluating concepts to improve vehicle occupant protection and developing a better understanding of adverse track-time dynamics.

Additional safety benefits will be derived from the Facility for Accelerated Service Testing. This facility will permit us to gain the equivalent of 7-10 years of in-service experience in one year of testing by operating a train over a closed loop track for 12 hours a day, five days a week. This will permit improvements in safety to be adopted much more rapidly and with greater confidence.

The experiments being conducted on FAST will result in data which can be used in helping to improve the safety of railroads. Specific types of information



which will be used are failure rate data on components and data to help predict the useful life of components so that they can be removed from service before failures and accidents occur. Additionally, appropriate rail inspection frequency data will be collected along with information on the way in which residual stresses in rail accumulate as a function of extended service. All of these data will directly support on-going, safety related projects and will be reflected in recommendations for improved track safety standards.

#### COOPERATIVE EFFORTS

The Federal Government works with all interested groups in reviewing railroad safety programs, seeking to foster a uniform understanding of safety goals and objectives. Working with the AAR and Short line organizations, FRA has conducted seminars and training sessions for member railroads and their working forces. Conducted in selected geographical locations, these seminars are used to provide the industry access to training materials and visual aids pertinent to safety laws. These aids are used throughout the industry in carrier employee training situations to enhance the industry safety posture.

FRA has participated in the work of various groups constituted to study a particular phase of the railroad safety problem. One such effort is the Railroad Safety Research Board where direction is given to research programs, both Federal and private, to assure the wise investment of resources in improving railroad safety. Another example was the work of the Railroad Operating Rules Advisory Committee (RORAC) where government, railroad management and railroad labor joined together to examine, discuss and advise all concerned in the standardization of railroad operating rules to achieve safer operating conditions. RORAC helped formulate FRA's initial mandatory operating rules. The Locomotive Cab Committee, with a similar sector mix, advises both manufacturers and government in the configuration of the locomotive cabs conducive to operator and crew safety.

FRA is also participating in a comprehensive study of the adequacy of carrier training programs. There is significant evidence to indicate the number of experienced employees in the railroad industry will, in the next few years, prove completely inadequate to meet the needs of the industry. In general, it appears that an alarming number of employees are very close to retirement age. A well trained work force results in not only increased productivity, but safer operations as well.

In light of this, FRA commissioned a study by an independent consulting firm to examine industry training needs and problems and to outline possible research efforts which FRA could sponsor to address those needs and problems. A sample of eight railroads, including both rail labor and management representatives, were interviewed to determine the extent of existing training and to ascertain the extent of the emerging problem.

This study will assist FRA and the industry by serving as a discussion piece and a common reference document regarding railroad training efforts. In this context, it should serve as the necessary first step for FRA to determine its role, if any, in the training field.

While the Federal Government principally performs a regulatory and enforcement function in its relationship with rail carriers, it does provide considerable assistance to the industry in its efforts to provide safe working conditions and safe operations. However, carriers must maintain primary responsibility for ensuring safety of railroad operations.

#### OCCUPATIONAL SAFETY AND HEALTH

The first Federal enactment addressing the issue of occupational safety in the railroad industry was the original Safety Appliance Act of 1893. Since the effective date of that law, the Interstate Commerce Commission and its successor, the FRA, have been deeply involved in occupational safety problems. In 1970, Congress enacted both the Occupational Safety and Health Act and the Federal Railroad Safety Act. Section 4(b)(1) of the Occupational Safety and Health Act excludes from its coverage working conditions as to which another Federal agency exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health. The adjustment of jurisdictional questions relating to regulated transportation industries has been a matter of concern to the Department of Transportation and Labor, the Occupational Safety



and Health Review Commission, the courts, and all affected parties since that time.

In 1975, FRA proposed to end the jurisdictional uncertainty in the area of railroad safety and health by adopting substantial portions of the Department of Labor "consensus" regulations. That process was underway when the present Administration took office, but initial standards paralleling the Department of Labor regulations had not yet been issued. At that point, we undertook a complete reexamination of our approach.

Our chief concern was that FRA would have to acquire a substantial technical capability relating to general industrial and construction standards duplicating the capability under development by the Department of Labor. Further, significant attention to this area would inevitably distract our attention from our central concern, the safety of railroad operations.

After reviewing all of the pertinent considerations, we decided that the institution of a massive regulatory program in this area would not be in the best interest of employee health and safety in the rail industry. However, we recognized the need to articulate (1) the extent to which we have exercised jurisdiction over railroad safety and (2) the proper relationship between FRA and the Occupational Safety and Health Administration with respect to major fields of regulatory activity. The result of our efforts is a public notice terminating our general occupational safety and health docket. The notice includes a policy statement which we believe will help to dispel most jurisdictional questions by affirming Department of Labor jurisdiction over working conditions not rooted in railroad operations. To the extent some overlap continues to exist or the Department of Labor require assistance in applying its standards to conditions in the railroad industry, the two departments of government should be able to cooperate in assuring comprehensive protection while preserving the integrity of both regulatory programs. A good working relationship already exists between our respective compliance offices and we will seek more formal, structured arrangements in the near future.

#### STATE PARTICIPATION

Section 206 of the Federal Railroad Safety Act of 1970 authorizes the states to assist the Secretary of Transportation in carrying out investigative and surveillance activities concerning regulations issued under the Act. At the present time 23 states are participating by certification or agreement in the program. Of those 23 states, 20 are participating in inspections under the Track Safety Standards, 11 are involved in Freight Car Safety Standards inspections, with eight states doing both. Altogether, the states employ 57 inspectors and inspector trainees. This represents a significant growth in the State Participation Program over previous years. As explained earlier, we anticipate having 30 states participating by the end of fiscal year 1978 with 100 inspectors or trainees, a level which we plan to maintain during fiscal year 1979. A chart showing the states and their level of participation is attached.

The Act provides for 50 percent Federal funding of state costs attributable to the program. Total obligations under this program were \$705,000 in fiscal year 1977. During fiscal year 1978 there is budgeted out of our railroad safety appropriation \$1,920,000 for grants in aid to the states. These funds are available from unobligated balances of prior years. We are requesting \$1,940,000 in budget authority for fiscal year 1979. Because many of the decisions affecting the growth of this program rest with the state regulatory commission, funds authorized for this purpose should remain available until expended.

The future of the State Participation Program in relation to the overall inspection effort is a matter of serious concern to us. It was the impression of the Congress in 1970 that the states generally had at their disposal a significant capability which could be tapped to supplement Federal enforcement resources. With respect to track and freight car safety, at least, this has not turned out to be the case in most instances. State commissions generally have more expertise in areas such as grade crossing safety. Therefore, the states, with a very few exceptions, have been forced to acquire qualified personnel. FRA has established an inspector trainee program to help the states in this regard.

Nevertheless, because many state governments have salary scales which do not permit the compensation of qualified inspectors at a level equivalent to that provided by the railroad industry or the Federal government, difficulties have apparently been experienced in bringing aboard both qualified inspectors and



qualified inspector trainees. FRA will continue to facilitate the entry of states possessing the requisite capability and will assist states in acquiring this capability.

States participating in the rail safety program under Section 206 of the Federal Railroad Safety Act of 1970 as of April 20, 1978, are:

| State              | Track      |                         | Equipment  |                     |
|--------------------|------------|-------------------------|------------|---------------------|
|                    | Inspectors | Participation           | Inspectors | Participation       |
| Alabama.....       | 1          | Certification.....      | 2          | Certification.      |
| Arizona.....       | 1          | Full certification..... | 1          | Full certification. |
| Connecticut.....   | 1          | Agreement.....          |            |                     |
| Illinois.....      | 3          | do.....                 |            |                     |
| Indiana.....       | 1          | do.....                 |            |                     |
| Iowa.....          | 3          | Full certification..... |            |                     |
| Kansas.....        | 1          | Agreement.....          |            |                     |
| Massachusetts..... |            |                         | 1          | Certification.      |
| Maryland.....      | 1          | Agreement.....          | 1          | Full certification. |
| Maine.....         | 1          | do.....                 |            |                     |
| Michigan.....      | 3          | Certification.....      |            |                     |
| Minnesota.....     | 2          | Agreement.....          |            |                     |
| Missouri.....      | 2          | do.....                 |            |                     |
| Nebraska.....      | 1          | do.....                 |            |                     |
| New Hampshire..... | 1          | do.....                 |            |                     |
| New York.....      | 3          | do.....                 | 3          | Agreement.          |
| Ohio.....          | 1          | do.....                 | 1          | Do.                 |
| Oregon.....        | 2          | Full certification..... | 1          | Full certification. |
| Pennsylvania.....  | 3          | Certification.....      | 4          | Do.                 |
| Utah.....          |            |                         | 1          | Agreement.          |
| Vermont.....       | 2          | Agreement.....          |            |                     |
| Washington.....    | 2          | Full certification..... | 2          | Full certification. |
| West Virginia..... |            |                         | 2          | Do.                 |
| Total.....         | 38         |                         | 19         |                     |

<sup>1</sup> Denotes trainee (8 track, 1 equipment).

#### DEPARTMENTAL PROPOSALS (S. 2897)

Mr. Chairman, you have been kind enough to introduce S. 2897, which embodies those portions of the Department's legislative program dealing with railroad safety. In particular section 4 of the bill would authorize appropriations for railroad safety for fiscal years 1979 and 1980. We ask that \$35 million be allotted for each of these years, an amount which should adequately cover our budget needs. In addition, we request that sums appropriated for research and development, automated track inspection and the State safety participation program remain available until expended.

The remaining safety amendments are largely technical in nature, but are important to the effective and efficient conduct of our responsibilities. The Federal Railroad Safety Act of 1970 and the other important railroad safety statutes provide us with ample authority to regulate in this area.

In addition to our requested authorization, the Department's proposed safety amendments are as follows:

Section 2 of the bill would amend section 207 of the Federal Railroad Safety Act of 1970 to allow the Secretary 90 days after receipt of a violation report from a participating State to commence an enforcement action. The law presently allows the Secretary 90 days after the date the violation occurs. Adoption of this amendment would help to preserve uniformity of interpretation of the railroad safety regulations while assuring prompt attention to violation reports after they have been submitted for action.

Section 3 of the bill would amend section 208 of the Federal Railroad Safety Act of 1970 to (1) remove archaic references to the National Transportation Safety Board (NTSB) and (2) provide that certain agents of the Department shall be considered employees of the Government for purposes of the Federal Tort Claims Act.

References to the NTSB would be deleted because they are no longer appropriate following the re-establishment of the NTSB as an independent agency in 1975 (Title III, Pub. L. 93-633). The revision would also help to avoid confusion concerning the Secretary's own authority to investigate accidents to ascertain compliance with the safety laws and to gather background data required for rulemaking under section 208 of the 1970 enactment.



Agents of the Department engaged in railroad safety inspections would be made subject to the Federal Tort Claims Act so that it would no longer be necessary to acquire expensive liability insurance, which is charged to the Government as a part of the contract cost of services. Contract agents are used to provide services related to the operation of automated track inspection vehicles.

Section 5 of the bill would amend the Hours of Service Act to make that law applicable to the activities of common carriers engaged in interstate or foreign commerce by railroad.

During the period the Hours of Service Act was first construed by the Supreme Court, the Commerce Clause of the United States Constitution was read very restrictively. As a result, the language of subsection 1(a) of the Act was seized upon by the Court as a vehicle for avoiding any potential unconstitutional overbreadth. Specifically, the Court said that the language on interstate transportation limits the words "any common carrier or carriers, their officers, agents, and employees." Therefore, by the logic of the Court, the Act applies to an employee's period of service only when it is demonstrated that the employee is personally engaged in the movement of interstate traffic. *Baltimore & Ohio R.R. v. Interstate Commerce Commission*, 221 U.S. 612 (1911).

This particular restriction on applicability is unique among the railroad safety statutes. In the case of the Safety Appliance Acts (45 U.S.C. 1-16), for instance, the Supreme Court recognized that all of the railroad activities of a common carrier have the real potential for impact on the interstate transportation of persons and property. In *Southern Ry. v. United States*, 222 U.S. 20 (1911), the Court stated: "the true test of [the Safety Appliance Acts'] application is the use of the vehicle on a railroad which is a highway of interstate commerce, and not its use in moving interstate traffic." The same logic should apply to the service of employees for a common carrier, since the crew of a train moving intrastate traffic on a "highway of interstate commerce" can affect the safety of interstate trains, either directly or indirectly. In any event, this is an area in which the paramount need for uniform regulation is manifest. Of course, previous imagined limitations on the Commerce Clause have long since been removed by the courts.

Unfortunately, the dictum of the 1911 Supreme Court decision remains as the sole authoritative interpretation of the reach of the Hours of Service Act. Therefore, this proposed amendment is needed to rectify the theoretical gap in coverage and to conform the language of the Hours of Service Act to that of the other special-purpose railroad safety statutes.

The amendment would have the further beneficial effect of reducing the workload of the administering agency by eliminating the requirement that proof be submitted concerning violations involving the movement of interstate cars in trains which originate and terminate within the boundaries of a single state. The amendment would not result in any significant impact on the industry, since all but a very few train movements do involve interstate commerce as currently described; and the limitations of the Act are generally observed with respect to the remaining operations.

Section 6 of the bill would amend the Safety Appliance Acts, Locomotive Inspection Act, and Signal Inspection Act to provide that the Secretary shall assess the civil penalties provided for in those laws.

In 1976, the penalty amounts for these statutes were increased to parallel those set forth in section 209 of the Federal Railroad Safety Act of 1970 (\$250-2,500). These technical amendments would give the Secretary the same assessment authority under the older safety laws which he possesses under the 1970 legislation. Vesting this power in the Secretary will assure that penalty amounts within the statutory range are uniform nationally and will discourage carriers faced with substantial penalty demands from insisting on litigation solely on the chance that a court might enter judgment for lesser amounts.

#### COMMENTS ON S. 2898

S. 2898 was introduced at the request of rail labor organizations. We have had only a very limited amount of time to review its provisions. Therefore, our comments on S. 2898 are preliminary in nature. We will be advising you shortly on our final position on this bill.

Section 2 of the bill would authorize railroad safety appropriations for fiscal year 1979 in a total amount not to exceed \$37,725,000. The Department has requested a two-year authorization at \$35,000,000 per year.



The Department opposes the form of authorization contained in S. 2898. First, we believe a two-year authorization is more appropriate to assure adequate planning. Second, the elimination of section 212(c) deletes one necessary phrase authorizing funds for research and development ("R&D") under section 212(b) (4) to remain available until expended. A provision should be added to provide that such funds and funds authorized for automatic track inspection and the State safety participation program shall remain available until expended.

Finally, the President's FY 1979 budget includes the salaries of 301 inspectors (an increase of 15 inspectors), 50 headquarters professionals, and 74 administrative/clerical personnel nationwide at a total cost of \$22.2 million (including the procurement and operation of track inspection equipment and data collection). We believe that FRA can adequately carry out its safety responsibilities with the resources we have requested.

Section 3 of the bill sets limitations on FRA research and development (R&D) activities, other than the safety research program, largely replacing the former section 212(c). The first sentence of the section provides that at least 50 percent of the funds authorized to be appropriated to the Secretary for conducting railroad R&D programs shall be available for safety research, improved track inspection and data acquisition technology, improved rail freight service, and improved passenger systems. However, these categories are very broad and the terms are not defined; these "programs" are administrative subdivisions of funds set by FRA. We are not proposing to do so this year, but all of FRA's R&D could easily be classified under these four headings, making the provision meaningless.

The second sentence provides that no FRA R&D "program" can exceed funds allocated for railroad safety research (which is limited to \$10 million by 212(b) (4) and is in fact budgeted at \$7.37 million). Ironically, under FRA's current administration subdivisions of R&D funds, this would directly reduce only two programs which advance safety related track research: the Improved Track, Inspection and Data Acquisition Program, and the Facility for Accelerated Service Testing Program (FAST) at Pueblo, Colorado. The former program is designed to improve track safety standards; develop methods for track construction and maintenance in order to reduce track-caused accidents and increase performance; and to improve automated track inspection capabilities. The FAST program, which is a full system approach to the simultaneous testing of the reliability and safety of track and roadbed components, rolling stock, maintenance equipment and techniques, under accelerated and realistic high tonnage conditions, would, in fact, be eliminated. Substantial reductions would also be incurred in the Transportation Test Center budget request for construction, equipment and the operation and maintenance of the facility itself.

Another point that must be emphasized is that improvements in safety do not necessarily result exclusively from expenditures for safety R&D. To the contrary, work done in areas such as freight car management improvement, commodity research and financial and system structure analysis can have an ultimate impact on railroad profitability that will permit the kind of spending on plant and equipment by the railroads that safety requires. For these reasons, then, it would be inadvisable to place an arbitrary limitation on the amounts of funds spent for other than safety R&D.

Section 4 of the bill would amend the Hours of Service Act to define the term "designated terminal" to mean the home or away from home terminal of a particular crew assignment. Under the Act, rest periods for employees at other than "designated terminals" are considered on-duty time. The designated terminal concept was introduced into the law in 1969 and has led to considerable controversy and litigation between the Government and the railroad industry.

In the initial test case on the issue, the U.S. Court of Appeals for the Ninth Circuit upheld the position advanced by the FRA, which is that a "designated terminal" is the home or away from home terminal of the particular crew assignment, or another terminal where suitable facilities for food and lodging are available which has been bilaterally designated as a release point for that crew. In the view of FRA, as the administering agency, this position best carries forth the intent of the Congress at the time of the 1969 amendments to the Act.

However, a recent Eighth Circuit Court of Appeals decision rejected the opinion of the Ninth Circuit and held that a designated terminal is any terminal on a railroad where suitable facilities for food and lodging are available. This position is similar to an amendment proposed by the Association of American Railroads in 1969 which was not adopted.



Thus, there is now a conflict between circuits. We will recommend to the Department of Justice that a writ of certiorari to the Supreme Court be sought to resolve the conflict. Unfortunately, the time lag involved in obtaining such review will only add to the burden already faced by FRA in this regard. Inspectors have spent thousands of hours investigating complaints from employees alleging that they have been improperly released. Because of the legal uncertainty which now prevails outside the Ninth Circuit, until Congress acts to define the term we will be forced to decline enforcement of alleged violations involving improper points of release, assuming the point of release is a terminal on the particular line of railroad.

The Department supports a clarification of legislative intent to put an end to the uncertainty and litigation which this undefined term has produced. In our view, a clarification of the intent of Congress in 1969 would provide that a designated terminal is a home or away from home terminal of the particular crew assignment or such other terminal having suitable facilities for food and lodging as may be jointly agreed upon as a point of release by the railroad and its employees.

Section 5 would amend section 2 of the Hours of Service Act to reduce the maximum hours of train and engine crews from the current twelve hours to ten hours.

The purpose of the Hours of Service Act is "to promote the safety of employees thereon." Since it has not been established that any further reduction in maximum hours of service would have any positive impact on railroad safety, the Department opposes enactment of this section.

The issue of safety should be central to all deliberations on this provision. A study by the Interstate Commerce Commission in early 1967 concerning the relationship between hours of service and railroad accidents under the then existing sixteen-hour limitation failed to establish any definite correlation. (The Act was amended in 1969 by Public Law 91-169, which reduced the maximum hours of service of covered operating employees from sixteen to twelve.) Moreover, an analysis by the Federal Railroad Administration (FRA) of all accidents caused by human factors during 1975-1976 also failed to disclose any such correlation within the current permitted hours.

The Department believes that the resolution of further disagreements concerning work hours should be handled within the established collective bargaining framework. We fully agree with the position taken by the Senate Commerce Committee in its report on the 1969 hours of service legislation: "The committee intends that this section should not only permit but should also promote collective bargaining in the hope that further resort to legislation will not be sought by either railroad management or labor". S. Rep. No. 604, 91st Cong., 1st Sess. 10 (1969).

Another significant objection to the proposed provision is its potential cost. Railroad terminals are fixed facilities which are often spaced at considerable distances. Based on the Department's experience in administering the current statute, we believe there are a significant number of assignments which could not be completed within ten hours or for which that time period would not allow any margin of error to accommodate the operational difficulties which are common in the industry. While many assignments could probably be redefined at minimal cost to the public, others could not be redefined without considerable outlays for deadhead transportation due to the great distances between terminals.

Section 6 of the bill would add a new subsection (h) to section 202 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 431). The subsection would provide that no common carrier by railroad shall run, or permit to be run over its line or road, any freight train which is in excess of 4,300 in length, exclusive of caboose. This represents an average of approximately seventy-five (75) cars.

The bill contains no congressional findings setting forth the reasons for this proposal. However, proponents have stated that this proposal is designed to enhance railroad safety by reducing the incidence of train accidents. We do not believe that conclusive evidence exists establishing that a limitation on train length would, by itself, result in an appreciable net reduction in train accidents. Further, we are concerned that the proposed legislation would impose a significant economic burden on the railroad industry before a safety need has been conclusively demonstrated. Regulation on other than safety grounds would be an inappropriate Federal intrusion into railroad management responsibility. Should



such limitations be desirable from an industry viewpoint, they are better accomplished through management decisions, or where work rules are involved, through collective bargaining.

The correlation between train length and the safety of train operations has been a source of dispute within the industry and in previous Congresses. In 1957, the Committee on Interstate and Foreign Commerce added an amendment to the Power or Train Brakes Safety Appliance Act which was intended to deny the Interstate Commerce Commission the authority to regulate train length. H.R. Rep. No. 1205, 85th Cong., 1st Sess. (1957). The amendatory language was inserted in the legislation following a discussion of the authority of the I.C.C. (now the Secretary of Transportation) to make changes in the power brake rules mandated by the statute, and it reads as follows: "Provided, however, that such rules or standards of instructions or changes therein shall be promulgated solely for the purpose of achieving safety." 45 U.S.C. 9. In explanation of this provision, the committee stated:

The purpose of including such language is to make clear that these rules are for the purpose of safety, and not for the purpose of limiting the length of trains. The relationship of train length to safety is a matter for separate consideration.

The Federal Railroad Safety Act of 1970 now provides adequate authority to regulate in the area of train length whenever a safety need is apparent. The Department believes that complicated regulatory judgments such as those involved in proposed restrictions on train length are best made by the administering agency after appropriate research, analysis, and opportunity for public comment. To date, no petition for rulemaking has been submitted to FRA embodying the regulatory proposal contained in the bill. However, FRA appreciates the concerns underlying the legislative proposal and is conducting research into track-train dynamics which may have direct application to this problem.

Analysis of accident data relating to frequency of train accidents for trains of different lengths is extremely difficult due to a number of variable factors involved. However, an analysis of national train accident statistics for calendar year 1975 and 1976 suggests that less than forty percent (40%) of train accidents occur in trains of seventy-five (75) or more cars. (A chart displaying these statistics is attached.) Data compiled by the Association of American Railroads (AAR) suggests that the percentage of trains which exceed seventy-five cars averages approximately thirty-two percent (32%). While available data would not permit the reliable normalization of FRA statistics to fully evaluate whether a significant correlation may exist between train length and train accidents, the data which is available does not indicate a positive correlation. The single exception to this rule may be equipment-caused train accidents. Since a greater number of cars in the consist will increase the statistical possibility that a serious defective car will be present, that is not a correlation which would necessarily support any limitation on train size.

Certainly train length in combination with increasing tonnages, poor train placement of empty and loaded cars, poor train handling, and equipment defects will be productive of a higher accident level. The problems are real and they are of major concern to FRA. However, imposition of an arbitrary train length limitation without regard to other factors would appear to be an inappropriate response to a problem which has not yet been quantified.

Indeed, it is entirely possible that an arbitrary and inflexible train length limitation might actually result in an increase in accident frequency and severity. The higher traffic density on main lines with shorter trains would produce would greatly increase the number of situations in which trains would meet or be overtaken, heightening the statistical possibilities for collision in the event of human error or failure of a signal system. Since most grade crossing accidents involve a motor vehicle being struck by a locomotive rather than a motor vehicle proceeding into the side of the train, increased train traffic might result in an increase in grade crossing accidents—the source of most of the fatalities related to railroad operations.

The Department believes that the best immediate answer to train accidents is the strict enforcement of Federal laws and regulations governing track, equipment and human factors. In the past year, new emphasis has been placed on meaningful enforcement activity. Additional resources are being requested for this purpose. We believe it would be untimely for the Congress to mandate a limitation on train length in light of the uncertain safety consequences of the measure and ongoing efforts to enforce safety laws and regulations which address



hazards more directly and with greater precision. Any further regulatory activity related to the operation of long trains should be undertaken by FRA and should take into consideration (1) the advances in train handling permitted by the use of radio-controlled "slave locomotives", (2) the special factors associated with the unit train concept, and (3) other matters bearing on the safety of long trains. As noted above, FRA is presently conducting research which will assist in addressing the train accident problem from the point of view of methods of train handling.

The Department is also concerned that this legislation could have a severe detrimental impact on the economic health of the railroad industry. While no precise estimate can be made of the costs rail carriers would incur from such a regulation, it is clear that the level would be extremely high—much higher than many of the firms in the industry could bear, given their financial condition. The investment in new locomotives, cabooses, changes in passing sidings and yard configurations would be considerable. The restriction would have a great impact on the operating practices of every carrier. Operating characteristics of railroads differ, depending on size or commodities carried, terrain, management philosophy and numerous other factors. However, individual carriers have estimated in submissions to the AAR that this legislation would result in an increase in number of trains per year of from 6 percent to 46 percent. Estimated total new investment per carrier ranged from \$18 million to \$340 million.

The impact on operations and maintenance expenditures would also be considerable. Additional trains require more fuel, more maintenance, and cause the need for track work. But, above all, they require more crews. The railroads' estimates for increases in the total number of road crew employees alone ranged from 6 percent to 33 percent; this does not include any increase in maintenance of way or other personnel. At an average yearly cost per four man crew of \$95,044 as estimated by the Interstate Commerce Commission (not including benefits), this could amount to a considerable sum.

The impact of the 4,300 foot length restriction will probably be seen most clearly in coal transportation. Unit train service is the most efficient way to move large volumes of coal, from the points of view of both railroad and utility. Typically, such trains consist of 100 hopper cars (although many trains are longer) and three or four locomotives. According to the National Coal Association, over 168 million tons of coal were moved this way in 1975, which is approximately 40% of all rail coal originated. Under the Railroad Revitalization and Regulatory Reform Act of 1976 (RRRRA), the ICC has begun to allow some portion of the investment made for new movements such as these to be incorporated in the tariff charged, to allow the railroads to be able to attract the capital to make such movements possible. To the extent that the ICC allows the rate of return on such expenditures to be incorporated, the higher charges are passed on to the utility, and ultimately, to the consumer. Rates governing existing unit train movements were set before the "capital incentive rate" provision of the RRRRA went into effect, however, so the coal carriers would probably have to petition the ICC for an increase in all existing tariffs to cover not only new investment but increases in number of crews as well. Again, depending on the decision, some or all of this increase in cost must ultimately be borne by the utility customers, or may result in loss of rail market share.

It is true that there has been much research into the economics of small trains which indicates that, in many cases, such operations are more efficient than longer trains. This is especially true in movements of TOFC trains, where shippers need fast, reliable delivery times. However, such types of operations are not efficient for all types of service, especially if trains must carry full crews. Several short train studies done by various railroads, and cited in Robert Leilich's "A Study of the Economics of Short Trains" (Peat, Marwick, Mitchel and Company, 1974) indicate that crew costs in particular and labor cost per ton-mile in general are the major impediments to such service although, in isolated cases, it has proven efficient despite these factors.

The central point with respect to the economic impact of the bill is that an absolute limitation on train size which does not take into account the type of freight hauled or existing labor agreements concerning crew size would have an immediate and significant effect on the industry, shippers, and consumers.

Because it cannot be demonstrated with available data that a 4,300 foot limit on train length is an appropriate response to the train accident problem, because an increase in the number of trains could result in an upward counter-vailing



trend in grade crossing accidents and train collisions, and because the economic impact of the limitation on the industry would be severe, the Department strongly opposes enactment of the provision.

Section 7 of the bill would add a new subsection (i) to section 202 of the Federal Railroad Safety Act of 1970 to protect any employee who reports safety violations to FRA, refuses to operate defective equipment, or refuses to work in surroundings where the employee "reasonably believes there is present an imminent danger to his safety and health."

We feel that this provision requires detailed comment on our part and would prefer to postpone formal comment until we can provide the Subcommittee with a fully coordinated position on this issue.

Section 8 of the bill would establish within the FRA an Office of Occupational Safety and Health to administer "the occupational safety and health functions, powers, and duties of the Federal Railroad Administration." As we have previously noted in this statement, FRA has already determined that it should limit its occupational safety and health program to those working environments which are affected by railroad operations. FRA published a policy statement on the respective roles of FRA and the Department of Labor concerning occupational safety and health in the railroad industry on March 14, 1978 (43 Fed. Reg. 10583). We believe that this policy statement, which affirms Department of Labor jurisdiction over many important areas of concern, should be given an opportunity to work. Also, it is our hope that this policy statement will be the starting point for the resolution of further jurisdictional questions involving the two Departments.

No case has been made that railroad workers experience a materially higher degree of risk from non-operational hazards than do the employees of other industries. Therefore, FRA believes that the establishment of a separate office for this purpose within FRA cannot presently be justified. We will continue to monitor the compatibility and combined effectiveness of efforts by the Department of Labor and FRA to foster safe and healthful working conditions in the railroad industry and will make such recommendations as might prove warranted.



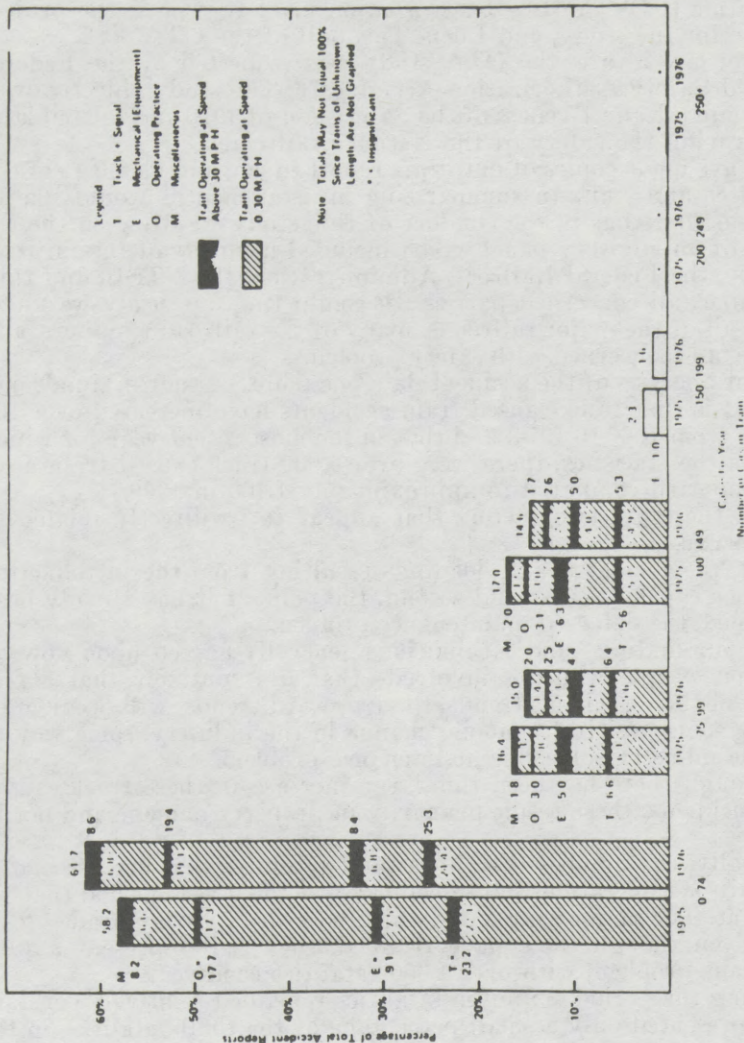


Fig. 1 - Number of Train Accidents by Length of Train in Calendar Years 1975 and 1976

Senator LONG. The next witness will be Mr. Robert L. Maxwell, Transportation Program Manager of the Office of Technology Assessment.

**STATEMENT OF ROBERT L. MAXWELL, TRANSPORTATION PROGRAM MANAGER, OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS; ACCOMPANIED BY LEE DICKINSON; AND LUCIA TURNBULL**

Mr. MAXWELL. Mr. Chairman, I am pleased to report to you today on the findings of the Office of Technology Assessment's evaluation of railroad safety and on those aspects of safety which may be relevant to the legislation that you have before you.



With me today are Lee Dickinson, on my left, who is the project director for the study, and Lucia Turnbull of the OTA staff.

As you are aware, the OTA study was requested by the Federal Railroad Safety Authorization Act of 1976. The study objective was to evaluate the effectiveness of the Safety Act of 1970 and related laws in improving the safety of the Nation's railroads.

We have made copies of our draft report to you and members of the committee and staff. In summarizing my statement I would like to point out first that in the conduct of this study we drew on the expertise of an advisory panel which included members of the railroad industry, the Federal Railroad Administration, the NTSB, and railroad labor, all concerned parties. In conducting our study we interviewed all of the major railroads, many of the railroad suppliers, and other people concerned with safety problems.

In our analysis of the accident data one point, of course, stands out, and that is that track-caused train accidents have increased over 100 percent from 1966 to 1974, and that in the most recent year for which we have the statistics, there were over 4,000 track-caused train accidents reported compared to approximately 1,400 in 1966.

Now, there are two factors that appear to be directly related to these increases:

First, the increased axle loadings resulting from the introduction of higher capacity cars; and second, the point that has already been mentioned, the deferred maintenance problem.

It is our finding—and I think it is generally agreed upon now by the other people who are involved—that it is unlikely that a real change in these accident trends, these upward trends, will occur until there is some positive economic change in the industry, some way to help the industry solve this maintenance problem.

Although there has been this large increase in these track-caused train accidents, these result primarily in property damage and not in casualties.

Actually, the number of injuries and fatalities that are associated with railroad operations have declined over the 9-year period that we looked at. The major source of fatalities is rail highway grade crossings. Even though these have declined, they still represent a very significant problem, with over 1,000 fatalities each year.

During the period employee fatalities remained relatively constant and represented only a small percentage of the total fatalities in the industry.

Injuries to employees, when normalized by taking into account the changes in the man-hours worked, increased slightly and represented over 74 percent of the total injuries in the railroad operations.

The chief reported causes for these injuries were not, as you might expect, derailments but rather the sort of day-to-day activities, such as getting on and off trains, accidents in the maintenance of cars and track, stumbling, slipping, and falling, and the coupling and uncoupling of cars.

So much for the accidents themselves.

The results of this are that the total cost of railroad accidents, if you put them in constant 1975 dollars, increased over 38 percent from 1966 through 1975. Railroad accident costs amounted to over \$575



million, or 31½ percent of total industry operating revenues in the year 1975.

Now, in an industry where the return on investment is less than 2 percent, this is a very crucial problem.

Turning to solutions to these problems, I think we all recognize that experience in many fields has shown that adopting a comprehensive and systematic approach to problems as complex as this often has greater returns in the long run than dealing with individual problems as they arise.

I think the Congress recognized this need when it enacted the Safety Act of 1970 and the Hazardous Materials Transportation Act.

One of the items that we were asked to examine was the laws on the books to see whether they were adequate. Our finding is that the statutory authority appears to be there.

However, a more systematic development of a comprehensive safety policy and program appears to be needed.

Summarizing the four principal conclusions of the OTA study—first, we found that the Federal Government has not made adequate use of accident data to determine the nature, extent, and causes of specific safety problems, and to set priorities in addressing these problems prior to the initiation of Federal regulatory activities.

Second, alternatives to regulation, such as incentive programs, do not seem to have been systematically considered. The general response to the safety hazard has been to adopt another law or regulation.

Third, measures of effectiveness have not been designed into these regulations and inspection activities.

And finally, some of the jurisdictional conflicts among the Federal agencies, such as OSHA and FRA and between Federal and State entities, have hampered the implementation of these activities.

One of the things that we found in reviewing the record of rule-making activities, at least it does not appear in the record, was why particular rules were judged to be the best means of dealing with a specific problem. We don't see that the regulatory proceedings reflect that all of the aspects of the problems have been systematically considered, or have adequately addressed the costs and benefits.

Concerning inspections, the accident rate does not appear to have been affected by increased inspection activity.

As Mr. King, I believe it was, pointed out, we can't tell how many accidents actually have been prevented by the inspection process. But, if you look at the fact that the number of Federal inspectors have doubled since 1970 and accidents are still increasing, you have to reach the conclusion that the inspection activities are not being effective.

We looked at the allocation of inspectors and we find that it doesn't coincide with the accident pattern.

Looking at the research and development activities, in the past more emphasis has been placed on property damage than on casualties. Most of the recent R. & D. efforts have been directed at track structures and rolling stock, which have a greater impact on reducing property losses rather than casualties.

Now, this is not all bad, and we feel that an increase in activities, particularly activities such as the test and evaluation program of the



FRA at the transportation test center in Pueblo, Colo., will benefit the entire industry, not only in dealing with safety problems but also with operations.

In conclusion, Mr. Chairman, we see that a primary problem is the increase in track-caused train accidents, and until maintenance is improved, it is unlikely that this trend will be reversed.

In our study we outlined a number of alternatives which could be considered in future safety programs. I think the one point that should be borne out is that before additional laws, regulations, standards and procedures are adopted, we should have a systematic review of the probable effectiveness of these laws, regulations, and standards, and we should try to seek to minimize the additional administrative burdens.

Senator LONG. I have read your statement in its entirety, and your statement will be printed in its entirety. But let me just submit for the record—and I will ask that it be printed—in connection with Mr. Maxwell's statement, some interesting statistics on railroad accidents which I believe to be very enlightening. And I think they help to pinpoint, as the witness has set forth, where the accidents are involved and the nature of the accidents and the factors that seem to have contributed most to them.

I don't have any questions for the witness beyond the statement. I think it is a very useful statement. It is very clear.

But we might want to submit some questions to you after the hearings are over with, Mr. Maxwell.

I want to thank you and your assistants for your very useful statement and also for some very good information that supports that.

Thank you very much.

Mr. MAXWELL. Thank you.

[The statement and materials referred to follow:]

STATEMENT OF ROBERT L. MAXWELL, TRANSPORTATION PROGRAM MANAGER,  
OFFICE OF TECHNOLOGY ASSESSMENT U.S. CONGRESS

Mr. Chairman and members of the Subcommittee, I am pleased to report to you today on the findings of the OTA evaluation of railroad safety, and on those aspects of the study which may be relevant to the legislation now under consideration. With me today are Lee Dickinson, Project Director for the Railroad safety Study, and Lucia Turnbull.

The OTA study was requested by the Federal Railroad Safety Authorization Act of 1976, Public Law 94-348. The study objective was to evaluate the effectiveness of the Federal Railroad Safety Act of 1970 and related laws in improving the safety of the nation's railroads. Copies of the draft report responding to this request have been provided to members of the Subcommittee.

In the conduct of this study we drew on the expertise of an advisory panel comprised of representatives from government agencies, railroad management, and railroad labor. In addition, outside contractors and consultants assisted in the examination and analysis of railroad safety data, and in conducting interviews with representatives of the major railroads, railroad suppliers, federal and state agencies and labor organizations.

ACCIDENT DATA

An analysis of the Federal Railroad Administration's accident data has shown that track-caused train accidents have increased over 100 percent from 1966 to 1974. The 1975 and 1976 accident data indicate that the trend of increases in track-caused train accidents is continuing. In 1976, 4,260 track-caused train accidents were reported as compared to 1,428 reported in 1966.



Two factors appear to be related to the increases in track-caused accidents. These are increased axle loadings and deferred maintenance. Axle loadings have increased, in part, because of the introduction of higher capacity cars, specifically the 100-ton freight car. It has been estimated that over \$6 billion of maintenance has been deferred through 1975 because of financial problems in the industry. These two factors appear to be working against railroad safety.

The fact that train accidents have been increasing rapidly, primarily because of track failure, makes the deferral of maintenance by the economically hard-pressed railroads of special concern. A means of improving track maintenance appears essential to furthering railroad safety. It is unlikely that a change in track-caused train accidents will occur until there are positive economic changes in the industry.

Track-caused train accidents result primarily in property damage, with relatively few casualties. The number of injuries and fatalities associated with railroad operations has declined over the period from 1966 to 1974. The major source of fatalities, rail-highway grade crossings, has also declined, however these accidents continue to be a serious safety problem. In 1976 there were 1,168 fatalities at rail-highway grade crossings, representing 69 percent of the total railroad fatalities for that year.

During the nine years investigated, employee fatalities remained relatively constant and represented only 7 percent of total railroad fatalities; injuries to employees, normalized by manhours worked, increased slightly and represented 74 percent of all railroad accident injuries. The chief reported causes for employee injuries are "getting on and off trains; construction and maintenance of cars, track and locomotives; stumbling, slipping and falling; coupling and uncoupling; and due to flying or falling objects."

#### ACCIDENT COSTS

The total cost of railroad accidents, in constant 1975 dollars, increased by 38 percent over the 10 years, 1966 through 1975. Railroad accident costs accounted for 3.5 percent of total industry operating revenues in 1975, up from 2.4 percent in 1966. Casualty claims accounted for 45 percent of this total; property and lading loss and damage also accounted for 45 percent.

#### A SYSTEMATIC APPROACH

Experience in many fields has shown that adopting a comprehensive systematic approach to problems usually proves more effective in the long term than addressing them individually and reactively. It appears that a more systematic approach to identifying and addressing safety problems is needed.

Congress recognized this need when it enacted the Federal Railroad Safety Act of 1970, and the Hazardous Materials Transportation Act. We believe that the statutory authority provided by these and other acts is adequate to deal with safety problems. However, a more systematic development of a comprehensive safety policy and program appears to be needed.

The OTA study found that:

The federal government has not made adequate use of accident data to determine the nature, extent, and causes of specific safety problems—and to set priorities for addressing problems—prior to the initiation of federal regulatory and R&D activities.

Alternatives to regulation such as incentive programs, have not been systematically considered. The general response to a particular safety hazard has been to adopt a law or regulation to require or prohibit certain actions.

Measures of effectiveness have not been designed into current regulations, inspection activities, and R&D programs.

Jurisdictional conflicts among federal agencies, and between federal and state entities, regarding the administration of rail safety programs has hampered implementation of effective safety activities.

#### REGULATIONS

It appears that FRA's typical response to a problem has been through regulation. In some cases the rulemaking record fails to demonstrate why the rule was judged to be the best means for dealing with the hazard in question. The regula-



tory proceeding does not systematically consider alternatives, nor adequately assess costs and benefits. In addition, measures by which the effectiveness may be evaluated have not been included in the standards or the rulemaking process.

#### INSPECTION

The accident rate does not appear to have been affected by the increased federal inspection activity resulting from the 1970 Safety Act. Before enactment of the 1970 Safety Act, there were 124 federal inspectors. Now there are 221. However, the accident rate is still increasing. Furthermore, the allocation of inspectors does not coincide with the accident pattern.

FRA inspection programs are based on the premise that these inspections provide preventive safety measures. The adequacy of the FRA inspection strategy and standards, and the possibility of approaches other than inspections being useful in promoting safety, have not been appropriately addressed in the administration of the FRA Safety Program.

#### RESEARCH AND DEVELOPMENT

Both government and industry railroad safety related research and development activities have placed more emphasis on property damage than on casualties. Most of the recent R&D efforts have been directed at track structures and rolling stock which have a greater impact upon reducing property losses than reducing casualties. We believe however, that an increase in activities, such as the test and evaluation program of the Federal Railroad Administration at the Transportation Test Center in Pueblo, Colorado, will benefit the entire industry.

Of safety research and development directed at casualties, most attention has been focused on grade crossings and the movement of hazardous materials. Less attention has been given to employee casualties.

#### CONCLUDING REMARKS

As we see it, a primary problem is the increase in track-caused train accidents that stem from inadequate maintenance of track and roadbed. Until maintenance improves, it is unlikely that the increasing accident trend will be reversed. More inspection of track will not be productive unless it leads to better maintenance. For many railroads, the lack of economic resources to devote to track maintenance is the major obstacle to improving railroad safety.

In establishing the future approach to railroad safety there are a number of alternatives which may be considered. For example:

- Assembling a more accurate data base;
- More adequate analysis and use of the data;
- A more systematic approach in establishing regulations and inspection standards;
- A determination of the appropriate levels and allocation of federal and railroad inspection personnel;
- Greater attention to quality control in equipment and rolling stock;
- Increases in preventive maintenance, rehabilitation, and repair;
- Increased emphasis on research and development to obtain a better understanding of accident causes;
- More complete evaluation of safety measures at all levels.

In evaluating these alternatives, certain general considerations should be borne in mind. The railroads play a vital role in transporting the nation's goods, particularly bulk commodities such as grain, coal, chemicals, and fuels—some of which are toxic, flammable, or explosive. Because of this, such additional laws, regulations, standards, and procedures which may be considered should seek to minimize the additional administrative and financial burdens on the railroad industry. We should seek to preserve, or enhance, the industry's competitive position in providing transportation services, and we should seek to minimize the increases in the cost of transportation, which must ultimately be passed on to the consumer and taxpayer.

These considerations point to giving priority to those actions which will assist the railroads in carrying out better maintenance of track, rolling stock, and equipment. Before imposing new federal regulations, adding more inspectors, or increasing reporting requirements these alternatives should be examined carefully in light of their potential impact on the economic viability of the industry.



On the other hand, more detailed analysis of available accident data by the FRA, and assistance to railroad management and labor in applying the results of this analysis to achieve safer and more effective operations, may be desirable. Also, a better understanding of the safety problem through research and development is needed.

Because of the complex nature of the railroad system continued cooperation between the Federal Government, railroad management, and railroad labor, is essential if railroad safety is to be improved.

Thank you, Mr. Chairman for this opportunity to speak before the Subcommittee on this matter.

#### OTA'S ONE PAGER ON RAILROAD SAFETY

An OTA study indicates that from 1966-74 track-caused train accidents per ton-mile increased by more than 100 percent. Although changes in data reporting made in 1975 make comparison with earlier data difficult, it is clear that the increase in track-caused accidents is continuing. This increase appears to relate both to an extensive and growing deferral of maintenance and to increased axle loadings.

The actual number of fatalities and injuries has decreased over a 9-year period by 29 and 19 percent respectively. However, when adjusted for changes in exposure, the casualty rate has remained relatively constant, except for a decrease in rail-highway grade-crossing accidents.

Track-caused train accidents are not likely to be reduced until the financial condition of the railroads improves. Substantial economic losses to the railroad industry resulting from accidents aggravate the outlook for economic improvement. The cost of railroad accidents totalled \$575 million and accounted for 3.5 percent of total industry operating revenue in 1975. During 1966-74, accident costs increased by 38 percent, casualty claims by 46 percent, and property and lading losses resulting primarily from train accidents by 21 percent.

The legal framework is adequate for addressing railroad safety problems. However, Federal efforts to reduce casualties and property losses have been impaired because:

Accident data have not been adequately used to analyze the nature, extent, and causes of specific safety problems, or in setting priorities for addressing these problems.

Measures of effectiveness have not been designed into current regulatory, inspection, and R&D programs.

Alternative approaches to the regulatory process, such as incentive programs, have not been systematically considered.

Divided jurisdiction—among Federal and State agencies, and the railroads—has impeded the administration of safety efforts.

The Federal Railroad Administration has failed to indicate how specific requirements or standards will reduce or eliminate particular hazards.

Inspections, authorized by the 1970 Railroad Safety Act, do not appear to have affected the accident rate. Current inspection programs and strategies have not effectively dealt with the safety problems that they were established to address.

R&D programs have emphasized reducing the causes of property damage rather than reducing the causes of casualties.

Increased cooperation among Government, industry, and labor would provide substantially greater opportunity for reductions in both property and casualty losses.

Copies of the OTA final report will be available in 4 to 6 weeks.

OFFICE OF TECHNOLOGY ASSESSMENT BRIEFING ON EVALUATION OF RAILROAD SAFETY, APRIL 15, 1978

#### *Chronology of Railroad Safety Legislation and Related Laws*

| Law   |                      |
|-------|----------------------|
| Year: |                      |
| 1893  | Safety Appliance Act |
| 1903  | Safety Appliance Act |
| 1906  | Block Signal Systems |
| 1907  | Hours of Service Act |



## Law

## Year—Continued

|      |                                                            |
|------|------------------------------------------------------------|
| 1908 | Federal Employer's Liability Act                           |
| 1908 | Ash Pan Act                                                |
| 1908 | Safety Devices Testing Authorization                       |
| 1908 | Transportation of Explosives                               |
| 1909 | Transportation of Explosives and Other Hazardous Materials |
| 1910 | Accident Reports Act                                       |
| 1910 | Safety Appliance Act                                       |
| 1911 | Locomotive Inspection Act                                  |
| 1920 | Signal Inspection Act                                      |
| 1937 | Signal Inspection Amendments                               |
| 1958 | Safety Appliances Amendment                                |
| 1960 | Explosives and Other Dangerous Articles                    |
| 1966 | Federal Claims Collection Act                              |
| 1969 | Hours of Service Amendments                                |
| 1970 | Railroads Safety Act and Hazardous Materials Act           |
| 1970 | Occupational Safety & Health Act                           |
| 1972 | Noise Control Act                                          |
| 1973 | Highway Safety Act                                         |
| 1973 | Passenger Assistance Act                                   |
| 1974 | Transportation Safety Act                                  |
| 1976 | Railroad Revitalization and Regulatory Reform Act          |
| 1976 | Railroad Safety Authorization Act                          |
| 1976 | Highway Safety Act Amended                                 |

*Safety regulations**Part:**Page*

|     |                                                                                                                            |
|-----|----------------------------------------------------------------------------------------------------------------------------|
| 211 | Rule-making and related procedures.....                                                                                    |
| 212 | State participation regulations.....                                                                                       |
| 213 | Track safety standards.....                                                                                                |
| 215 | Railroad freight car safety standards.....                                                                                 |
| 216 | Special notice and emergency order procedures: railroad track,<br>locomotive and equipment.....                            |
| 217 | Railroad operating rules.....                                                                                              |
| 218 | Railroad operating rules.....                                                                                              |
| 225 | Railroad accidents/incidents: reports classification, and<br>investigations .....                                          |
| 228 | Hours of service of railroad employees.....                                                                                |
| 230 | Locomotive inspection.....                                                                                                 |
| 231 | Railroad safety appliance standards.....                                                                                   |
| 232 | Railroad power brakes and drawbars.....                                                                                    |
| 233 | Signal systems reporting requirements.....                                                                                 |
| 234 | [Reserved]                                                                                                                 |
| 235 | Instructions governing applications for approval of a discon-<br>tinuance or material modification of a signal system..... |
| 236 | Installation, inspection, maintenance, and repair of systems,<br>devices, and appliances.....                              |



## RAILROAD ACCIDENTS

| Year  | Train accidents |          |           | Train service accidents |          |           | Nontrain accidents |          |           | Total railroad accidents |          |           |
|-------|-----------------|----------|-----------|-------------------------|----------|-----------|--------------------|----------|-----------|--------------------------|----------|-----------|
|       | Fatalities      | Injuries | Accidents | Fatalities              | Injuries | Accidents | Fatalities         | Injuries | Accidents | Fatalities               | Injuries | Accidents |
| 1966  | 214             | 900      | 6,793     | 2,387                   | 16,489   | 16,839    | 83                 | 8,163    | 8,152     | 2,684                    | 35,552   | 31,784    |
| 1967  | 170             | 754      | 7,294     | 2,238                   | 15,888   | 16,240    | 75                 | 7,881    | 7,846     | 2,483                    | 24,523   | 31,380    |
| 1968  | 142             | 293      | 8,028     | 2,141                   | 15,500   | 15,934    | 76                 | 7,815    | 7,765     | 2,359                    | 24,608   | 31,727    |
| 1969  | 203             | 1,173    | 8,543     | 2,011                   | 14,986   | 15,388    | 85                 | 7,197    | 7,170     | 2,299                    | 23,356   | 31,101    |
| 1970  | 210             | 627      | 8,095     | 1,936                   | 13,878   | 14,419    | 79                 | 6,822    | 6,812     | 2,225                    | 21,327   | 29,326    |
| 1971  | 171             | 694      | 7,304     | 1,792                   | 12,171   | 12,562    | 47                 | 6,107    | 6,068     | 2,010                    | 18,972   | 25,934    |
| 1972  | 171             | 777      | 7,532     | 1,704                   | 11,507   | 11,825    | 70                 | 5,646    | 5,632     | 1,945                    | 17,930   | 24,989    |
| 1973  | 149             | 758      | 9,698     | 1,704                   | 11,946   | 12,384    | 63                 | 5,541    | 5,538     | 1,916                    | 18,245   | 27,620    |
| 1974  | 139             | 911      | 10,694    | 1,692                   | 12,878   | 13,185    | 77                 | 7,029    | 7,017     | 1,908                    | 20,818   | 30,896    |
| Total | 1,569           | 7,887    | 73,981    | 17,605                  | 125,243  | 128,776   | 655                | 62,201   | 62,000    | 19,829                   | 195,331  | 264,757   |



## CASUALTIES RESULTING FROM CLASS I AND II RAILROAD ACCIDENTS

[Unnormalized]

| Year                | Employees   |           | Passengers  |           | Trespassers |           | Other <sup>1</sup> |           | Total       |           |
|---------------------|-------------|-----------|-------------|-----------|-------------|-----------|--------------------|-----------|-------------|-----------|
|                     | Fatal-ities | In-juries | Fatal-ities | In-juries | Fatal-ities | In-juries | Fatal-ities        | In-juries | Fatal-ities | In-juries |
| 1966 .....          | 168         | 18,651    | 23          | 1,244     | 678         | 702       | 1,815              | 4,955     | 2,684       | 25,552    |
| 1967 .....          | 176         | 18,055    | 12          | 1,054     | 646         | 696       | 1,649              | 4,718     | 2,438       | 24,523    |
| 1968 .....          | 150         | 18,116    | 11          | 1,329     | 628         | 663       | 1,570              | 4,500     | 2,359       | 24,608    |
| 1969 .....          | 190         | 17,255    | 6           | 862       | 627         | 674       | 1,476              | 4,565     | 2,299       | 23,356    |
| 1970 .....          | 172         | 16,285    | 8           | 489       | 593         | 646       | 1,452              | 3,907     | 2,225       | 21,327    |
| 1971 .....          | 123         | 14,191    | 16          | 536       | 551         | 607       | 1,320              | 3,638     | 2,010       | 18,972    |
| 1972 .....          | 133         | 12,973    | 47          | 680       | 537         | 586       | 1,228              | 3,691     | 1,945       | 17,930    |
| 1973 .....          | 161         | 13,511    | 6           | 503       | 578         | 614       | 1,171              | 3,577     | 1,916       | 18,245    |
| 1974 .....          | 144         | 16,002    | 7           | 574       | 565         | 674       | 1,192              | 3,568     | 1,908       | 20,818    |
| Total .....         | 1,417       | 145,079   | 136         | 7,271     | 5,403       | 5,862     | 12,873             | 37,119    | 19,829      | 195,331   |
| Percent total ..... | 7.1         | 74.3      | 0.7         | 3.7       | 27.3        | 3.0       | 64.9               | 19.0      | 100.0       | 100.0     |

<sup>1</sup> Other includes all persons not included as employees, passengers or trespassers. (This group was made up primarily of casualties resulting from grade-crossing accidents.)

## MAJOR CAUSES OF EMPLOYEE INJURIES AND FATALITIES (1966-74)

[Employee in uries]

| Major causes                                                | Percent of total employee injuries | Employee injuries |
|-------------------------------------------------------------|------------------------------------|-------------------|
| Getting on or off trains .....                              | 16.6                               | 24,083            |
| Construction and maintenance of cars and locomotives .....  | 12.2                               | 17,700            |
| Construction and maintenance of track, ties, and rail ..... | 8.9                                | 12,912            |
| Stumbling, slipping, and falling (not on train) .....       | 7.9                                | 11,461            |
| Coupling and uncoupling .....                               | 5.6                                | 8,124             |
| Flying or falling objects, burns, etc. ....                 | 4.8                                | 6,964             |

## EMPLOYEE FATALITIES

|                                                                                        | Percent of total employee fatalities | Employee fatalities |
|----------------------------------------------------------------------------------------|--------------------------------------|---------------------|
| Struck or runover at places other than public rail-highway crossing <sup>1</sup> ..... | 26.7                                 | 378                 |
| Various causes of collisions, derailments, and other train accidents .....             | 17.9                                 | 254                 |
| Coupling and uncoupling .....                                                          | 7.0                                  | 99                  |
| Stumbling, slipping, and falling (while on train) .....                                | 5.8                                  | 82                  |
| Getting on or off trains .....                                                         | 5.2                                  | 74                  |
| Construction and maintenance of cars .....                                             | 3.7                                  | 52                  |

<sup>1</sup> Includes those employees killed while walking or working along track.

## TRAIN ACCIDENTS AND ASSOCIATED COSTS

| Year:      | Train accidents | Loss and damage to track, roadbed equipment and lading (current millions) |
|------------|-----------------|---------------------------------------------------------------------------|
| 1966 ..... | 6,793           | \$117.6                                                                   |
| 1967 ..... | 7,294           | 118.0                                                                     |
| 1968 ..... | 8,028           | 140.3                                                                     |
| 1969 ..... | 8,543           | 161.7                                                                     |
| 1970 ..... | 8,095           | 158.4                                                                     |
| 1971 ..... | 7,304           | 144.8                                                                     |
| 1972 ..... | 7,532           | 140.3                                                                     |
| 1973 ..... | 9,698           | 188.4                                                                     |
| 1974 ..... | 10,694          | 243.2                                                                     |



TRAIN ACCIDENTS BY CLASS  
[Unnormalized]

|           | Derailments | Collisions | Other | Total train accidents |
|-----------|-------------|------------|-------|-----------------------|
| Year:     |             |            |       |                       |
| 1966..... | 4,447       | 1,552      | 794   | 6,793                 |
| 1967..... | 4,960       | 1,522      | 812   | 7,294                 |
| 1968..... | 5,487       | 1,727      | 814   | 8,028                 |
| 1969..... | 5,960       | 1,810      | 773   | 8,543                 |
| 1970..... | 5,602       | 1,756      | 737   | 8,095                 |
| 1971..... | 5,131       | 1,529      | 644   | 7,304                 |
| 1972..... | 5,509       | 1,348      | 675   | 7,532                 |
| 1973..... | 7,389       | 1,657      | 652   | 9,698                 |
| 1974..... | 8,513       | 1,551      | 630   | 10,694                |

TRAIN ACCIDENTS BY CONTRIBUTING CAUSE  
[Unnormalized]

| Cause              | Train accidents |        |
|--------------------|-----------------|--------|
|                    | 1966            | 1974   |
| Human factors..... | 1,999           | 2,238  |
| Equipment.....     | 1,843           | 2,175  |
| Track.....         | 1,428           | 4,264  |
| Miscellaneous..... | 1,523           | 2,017  |
| Total.....         | 6,793           | 10,694 |

RAILROAD ACCIDENT COSTS  
[In millions of dollars]

| Accident cost category                   | Accident cost   |              |              | Percent change |
|------------------------------------------|-----------------|--------------|--------------|----------------|
|                                          | 1966            |              | 1975 dollars |                |
|                                          | Current dollars | 1975 dollars |              |                |
| Casualty claims <sup>1</sup>             | 108.5           | 170.9        | 262.2        | +45.8          |
| Total loss and damage of property        | 119.2           | 197.6        | 240.0        | +21.4          |
| Damage to railroad property <sup>2</sup> | 99.0            | 164.1        | 177.4        | +8.1           |
| Damage to livestock <sup>1</sup>         | 1.5             | 2.5          | 1.9          | -26.8          |
| Freight loss and damage <sup>1</sup>     | 18.7            | 31.0         | 60.7         | +95.9          |
| Clearing wrecks <sup>1</sup>             | 23.0            | 38.1         | 73.2         | +92.1          |
| Grand total                              | 250.6           | 415.7        | 575.4        | +38.4          |
| Operating revenues                       | 10,654.7        |              | 16,401.9     |                |

<sup>1</sup> Interstate Commerce Commission, Transport Statistics in the United States, Railroad Companies, 1966-75.

<sup>2</sup> Federal Railroad Administration, Accident Bulletin Summary and Analysis of Accidents on Railroads in the United States, 1966-75.

Senator LONG. Next we will call Mr. William Dempsey, the president of the Association of American Railroads.

Mr. Dempsey, you have submitted to us various statements here. This statement deserves a very close study and the attention of every member of the committee. And it has a number of charts and a number of tables and supporting statements. And I will ask—and there are also some comments and appendixes, and I will ask that all of it be included in the record.



And I hope that you can summarize this statement—it is a very formidable document—in 10 minutes. Do you think you can do that?

**STATEMENTS OF WILLIAM H. DEMPSEY, PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS; WILLIAM J. HARRIS, VICE PRESIDENT, RESEARCH AND TEST; JAMES E. MARTIN, VICE PRESIDENT, OPERATIONS AND MAINTENANCE; AND LAWRENCE CENA, PRESIDENT, ATCHISON, TOPEKA & SANTA FE RAILROAD**

Mr. DEMPSEY. I think I can do that, Mr. Chairman.

I would like to introduce my associates.

Dr. William Harris, to my immediate left.

He is the vice president, research and test, for the association.

Mr. James Martin is to his left. He is the vice president, operations and maintenance.

And to my right is Mr. Lawrence Cena, the president of the Atchison, Topeka & Santa Fe Railroad.

Each of them will speak to one or another particular issue before the committee.

For my part, I would like to speak in terms of an overview of problems that we have in the safety of railroad operations.

As you are aware, as you indicated in your opening statement, there is a general public concern about the safety of rail transportation, so I won't talk about that. And then there is the second problem of employee safety which is addressed in S. 2898, and I want to say something about that, and my associates will, as well.

I would like to make four or five main points.

First of all, I want to talk about the association's position on rail safety.

Second, of course, there is room for improvement, and so I would like to indicate what it is that we are doing to try to bring improvement and what type of an affirmative safety program we would like to present at the appropriate time to the Congress for consideration. We would hope for this committee's support in that legislative program to the extent that it falls within the jurisdiction of this committee.

And finally, I would like to touch upon some of the concrete proposals that have been made, particularly those in S. 2898, which we oppose strongly and which we believe would be deleterious to rail safety.

In general, I find myself in accord with the comments that have been made orally by the witnesses that preceded me. I think everything that they have said has been very constructive, and we would regard it as a sound approach to rail safety.

I would like to have just one or two of the large charts examined by the chairman.

As some of the witnesses have already indicated, our record with respect to fatalities has improved rather dramatically in recent years, and this chart just indicates that. The largest decrease has been with respect to highway-crossing accidents, but also we've had a decline with respect to fatalities to trespassers and a slight decline with respect



to fatalities to employees. That is so even if we normalize the charts by virtue of the volume of train operations.

Here are the employee fatalities normalized by a million man-hours, and as you can see, there, too, there has been a slight decline.

Insofar as injuries are concerned, we have had a decade-long downward trend. We had 25 percent fewer injuries in 1974 than we did in 1964, and that is the last year for which the data are really comparable, because recordkeeping was put on a different basis in 1975.

Now, that is the area of safety that we're most concerned with, of course; the deaths and injuries, and injuries to employees, in particular. At the same time, we have this rather depressing phenomenon of increasing train accidents.

Before I get to that, I think I should say this and refer you to one of our appendixes. We display the data in appendix C, and as you will see, railroads show up significantly better than all transportation in terms of employee fatalities—significantly better than construction, significantly better than mining—in other words, better than other industries that could be regarded as comparable.

As I say, though, at the same time we've had this phenomenon of increasing train accidents.

Now, train accidents doesn't necessarily—and most of them don't—involve injuries or fatalities. Reporting of train accidents depends upon the amount of property damage involved. And the threshold is very low right now. It is \$2,300. Before that it was \$1,750. And from 1957 through 1974, it was \$750. We have had this increase of about 57 percent from 1966 to 1974.

Now, you have to adjust that by virtue of inflation, because costs have gone up, and by virtue of frequency of operations. And when you do, you find about a 16-percent increase in that 10-year period of time in train accidents. That is not enormous, but it is not satisfactory, either.

And I think the question then is, well, why is this happening? Why are we having train accidents escalating but at the same time fatalities and injuries either leveling or falling off?

In order to come to an appreciation of how that anomaly can be explained, you really have to talk about the causes of train accidents.

I would like to discuss what seems to be a rather widespread view that what is happening here is that we are having this great escalation in train accidents because of deterioration of track.

Train accidents, of course, are caused by a number of different reasons. Certainly, track is one of those, and there isn't any question that in the Northeast and the East and parts of the Middle West, large segments of the track are in deteriorated condition and indeed need to be improved. That isn't true for the West, and it isn't true, by and large, for the Southeast. It is true in some sections of the East and some areas in the Middle West.

Now, there isn't any question that this deteriorated condition of the track has led to more train accidents. It has led to more derailments, and derailments is the one category of train accidents which is going up.



At the same time, it is also true that this has not meant an increase in injuries, fatalities, or serious derailments.

Now, what we've done here—if I could have the next chart that I would like to have you examine—is to look at the bankrupt railroads in terms of their derailments.

We have taken the predecessor railroads of ConRail, and we've looked at their train accident and derailment experience.

This indicates how they stack up in terms of their gross-ton-miles. This indicates how they stack up in terms of their train accidents, and the green, how they stack up in terms of derailments. And as you can see, they have more train accidents and many more derailments than you would expect in terms of their gross-ton-miles.

That is what you would expect. Their tracks are in bad shape, and the trains will derail. But at the same time, that experience is not reflected in serious derailments.

This chart is constructed the same way except that what we've done is to look at derailments causing more than \$100,000 damage, more than \$250,000, and more than a half a million dollars' damage. And here you can see the picture is exactly the opposite for these bankrupt railroads.

They have fewer derailments over \$100,000 than you would expect, still fewer over \$250,000, and still fewer over a half a million dollars.

Well, the answer is clear. The reason for that is that these railroads compensate for the bad condition of their track by imposing stringent speed limits. And so it is just as if you took the car fleet, the automobile fleet, and made it 10 years older. So you would have more blowouts and more brake accidents and things of that sort, but you put a 35-mile-an-hour speed limit on, you would have more fender-benders, but you would have fewer serious accidents and fewer casualties. And that is what is happening now.

This is a terribly serious matter insofar as service to shippers is concerned. Economically, it is dreadful for these carriers and for the whole industry. But it has tamped the number of accidents that you might otherwise expect.

I don't mean to suggest that it is not serious. It is serious. But it isn't the only problem we have. It isn't the main problem, indeed, that is causing the escalation in major accidents, nor is it at the heart of our experience in hazardous materials transportation problems.

Let me go then to the question of hazardous materials transportation, if I may.

If you look at the data on the most serious accidents that we have with hazardous materials, you will see the same kind of pattern reflected.

Out of the most recent 15, something like only 3 of those were on carriers that were in the bottom third of our industry financially. About four of them were on carriers that were in the top third. And the rest of them were distributed among the middle range.

That is about what you would expect from these kinds of data that I have indicated.

Now, the fact, of course, is that with respect to hazardous materials, railroads are by far one of the safest methods of transportation of these materials, notwithstanding these recent tragic incidents in Florida.



Mr. King has so stated in the past. As he pointed out, the railroads carry about 40 percent of the tonnage of hazardous materials, and since they have the long hauls, about 70 percent of the transportation. But we have only about 9 percent of the accidents. About 91 percent of the accidents are on the highways.

I don't mean to be critical of motor carriers, but they operate in a less controlled environment than the railroads, so they experience far more in the way of accidents in the transportation of hazardous materials, far more in the way of casualties, far more in the way of deaths. So I think that it is terribly important that we remember this as we look at this problem which has to do with the transportation of hazardous materials.

And I display all of the relevant data, as you know, Mr. Chairman, in my statement.

We are, notwithstanding that, deeply concerned about the question of hazardous materials, and I'm going to have Dr. Harris review with you the tank car safety research and test project that we embarked upon in 1970 after we had some serious accidents involving the transportation of hazardous materials.

I was going to do that right now; but Bill, if you don't mind, I'm just going to complete what I had and then turn to Dr. Harris, if I could do that.

I would like to say a few words about what more can be done than we are doing, because surely there can be ways to improve the situation. But before I do that, I would like to say that the things that have been proposed in the bill that has been introduced would be really counterproductive, because what they would do would be to greatly increase the cost of rail transportation without having any appreciable impact on the safety of this transportation.

Now, Mr. Cena is going to testify about two of these proposals, and Mr. Martin will say that they are terribly costly and therefore would divert the funds of the industry from the safety area, where they ought to be spent.

Senator LONG. I read that statement, and my understanding is that you would have 10 minutes, and the other witnesses were going to have about 5 minutes each to explain their proposals. So who would you like to call on next?

Mr. MARTIN. Let me call on Dr. Harris so he can talk about the tank car safety project.

Mr. HARRIS. Mr. Chairman, I would like to talk about the tank car safety project and about the AAR safety research program because they are closely related. The problem of safe movement of hazardous materials is obviously a very critical one. In 1970, we joined with the Railway Progress Institute, through its committee made up of car-builders, in a study of the containment of hazardous materials after a derailment occurred. In those studies we clearly defined the nature of penetration of the tank car shell in accidents. We looked carefully at the sequence of events in accidents.

From that analysis, which took a year or a little more to complete, we identified a series of preventive measures designed to protect the tank against head penetration and, should a tank be involved in a fire, measures to reduce the heat flow into the tank. Those protective measures are now reflected in HM-144. It is critically important to



recognize that not only must the tank head be protected by top and bottom shelf couplers and head shields, but also thermal insulation of the shell crucial to reduce the number of violent ruptures of tank cars.

Unless that whole package is put into place, as is mandated by HM-144, as quickly as possible, we will not achieve the total safety that HM-144 will provide.

The second part of the problem of hazardous materials safety transportation has to do with the prevention of derailments, because if trains do not derail, tank cars are safe. We have been examining, in a number of cooperative research programs, with Government, the FRA, with the suppliers, and on occasion with rail labor, opportunities to improve safety by improving track, including rail and the whole track structure, by improving equipment, such as by improving the quality of wheels and the way in which they are inspected so as to remove wheels with flaws that may lead to failures; by examining the human factors problem and the man-machine interface; by providing better information to a locomotive engineer, so he can handle trains more effectively, and through a variety of actions to deal with miscellaneous causes involving the dynamic action of a train on the track structure.

In such programs as track dynamics, we have made very significant progress in understanding these matters and translating them into better guidelines for operating trains and improving specifications. But as we have examined the derailment problem, we came on the notion, as has been stated by previous witnesses, through analyses that we did of the accident data, that employee safety would not be advanced as much as it should be only by derailment control. If we eliminated all derailments, we would reduce employee injuries only about 4 percent and employee fatalities less than 20 percent.

Fatalities and injuries come about as a result of accidents, as Mr. Maxwell testified, in getting on and off trains, coupling equipment, and maintaining track and equipment. And so we have a number of human factor-related research programs in place now, designed to identify what we can do about training, about designing equipment, and about changing the content of jobs so as to enhance employee safety.

All of these programs on hazardous materials, on derailment control and prevention, and employee safety have been substantially advanced by the extensiveness of the cooperation between the FRA and ourselves, with deep involvement by individual railroads and the supply companies. And I think from the results of that research we can expect to build a sounder base upon which to continue to improve railroad safety.

In addition to the safety programs, of course, we have other programs aimed at improving the effectiveness of rail transportation, the efficiency of car utilization, that are all part and parcel of what has to be done to advance the railroads' capability to be even more an effective mode of transportation.

Thank you.

Mr. DEMPSEY. Mr. Martin will be next.

Mr. MARTIN. Thank you, Mr. Chairman. I would like to confine my remarks specifically to section 6(a) of the legislative proposal, to limit



train length to 4,300 feet. Train length is introduced as a safety measure, but it has very little relationship to overall safety. It would, however, have a substantial economic and operational impact on the railroad industry.

In 1976, 32 percent of all trains operated by class 1 railroads contained more than 75 cars. And AAR's analysis of operations of a representative sample of class 1 railroads shows the following: Limiting train length to 75 cars would require operating 29 percent more trains and 24 percent more train-miles. The additional trains and train-miles that would be required to simply perform the same amount of transportation as in 1976, at a substantially higher cost. Running more and shorter trains will mean purchasing more locomotives, more cabooses, more freight cars, and hiring more employees. When you consider nearly three-quarters of a million dollars for new road locomotives, \$45,000 roughly for a caboose, and \$30,000 for the average new freight car, that is a substantial amount of money.

Even though no additional equipment is economically justifiable to perform the service at the same levels, AAR's study of representative class 1 carriers showed that a restriction of 75 car lengths would require 3,000 additional locomotives, 2,000 more cabooses, and more than 3,000 new freight cars, at a cost of \$2.5 billion.

Operating more trains requires additional passing tracks and other railway facilities, at an estimated cost of over \$500 million. Signal facilities and communications facilities cost would be about \$230 million. That additional investment would be twice as much as that that was spent for improvements in 1976, and operating costs will increase by \$1.2 billion in the area of fuel and labor costs.

One particular railroad reported that they would have the usage of an additional 200 million gallons of diesel fuel, and crew wages and fringes would increase by \$82 million.

And for the added investment cost for equipment of over \$3 billion and additional operating cost of \$1.2 billion, the industry is supposed to be able to buy more safety. The facts just do not support that that would be the net result. Train accidents, as you have heard, are divided into four main categories: track caused, representing 41.6 percent; equipment caused, 21 percent; human factors, 23 percent; and all others, 14 percent.

Track-caused accidents would probably remain about the same because the total tonnage would remain constant. And through passage of the bill, it would have little effect on track-caused accidents. In addition, maintenance production would suffer with more trains. More trains would result in less working time on track for maintenance of way equipment.

Equipment-caused accidents show that 70 percent of those accidents involving trains of over 75 cars were caused by cars positioned before the 76th car, and only 9 percent of the equipment-caused accidents were caused by cars positioned after the 100th car. The equipment defects that do occur seem to occur more frequently on long trains, are related to air brake hoses, couplers, and raft gear systems. Usually, those trains experience less frequent problems with truck components and wheels. Air brake systems are constantly being improved by the railroads and air brake companies, and the new-style air brakes increases the rate of applying and releasing, which greatly reduces the



chance of break-in-two and improves the control of the train. With 65 percent of the national fleet now equipped with the new-style brakes, long-train brake problems are decreasing.

Accidents attributable to the human factors cause about 23 percent of train accidents each year. Other causes are mainly grade crossing accidents, which is 14 percent. Since this bill calls for the operation of more trains, human failure accidents can be expected to increase; and in a similar manner, grade crossing accidents are more dependent on the number of trains moving across grade crossings than on the total number of cars in a single train. It is therefore likely that the incident of grade crossing accidents will rise. But in the area of railroad operations, the impact would be the greatest.

Very basic and fundamental to providing rail transportation services is the ability to provide those services with a good measure of flexibility. If rail transportation is to be tailored to meet the needs of the shippers and receivers, those rigid, impractical, and uneconomic restrictions cannot be imposed on rail carriers. In order for them to adjust their operations to the volume fluctuations, farmers, coal producers, automobile manufacturers, and many other industrial concerns have a right to expect shipments to move on a current basis. The carriers have a right to maximize the utilization of their investment, and the consumer has a right to expect that railroad common carriers will deliver products in the most economic and efficient manner possible.

The type problems that we see with a limited or restricted train length: In line haul we would have a greater interference with a greater number of trains. Sidings and spacing strategies have been developed, and those will have to be changed. Where one train is operated, it would require two trains; 75 cars means that when 80 or 90 cars are available to move, some traffic will have to be delayed and held over. And special impact would be felt on the trailer on flat car or piggyback service where freight cars are the longest and trailers and containers are light. For if a 4,300-foot train of 130 loaded ore jennies with a trailing weight of more than 17,000 tons is considered safe to operate, then a 7,000-foot train of 75 trailer container cars with just over 4,000 trailing tons could hardly be said to be unsafe.

The train length restrictions would have a severe impact on the operation of unit trains. As you know, they are designed to move large volumes of single commodities in single trains from one origin to one destination. The unit train operations are extremely important for the movement of coal, grain, and fertilizer. Train length restrictions will mean that unit trains and train load operations, for all practical purposes, will cease to exist.

The run-through trains, trains usually preblocked, running across several carriers without changing locomotives or cabooses, will be severely affected. The expedited handling of reduced transit times and the bypassing of terminals, with the resultant savings, will be lost. Yard operations will be impacted severely. Modern-class yards are designed to handle long trains, allowing for classifying and assembling on a production line basis. Short trains will not allow the industry to maximize production and will result in the underutilization of facilities. And the enormous investment in yard facilities is predicated on flexibility and productivity.



Branch line operations will suffer. On branch lines where only one train is operated, short trains will force traffic to additional trains. Many of those branch lines have no passing sidings. The coal industry in particular would be affected by the adverse impact on branch lines. Most of this empty equipment, coal equipment, and loaded trains are handled in 100-car units. If more trains are put on branch lines, the operating cost will increase. Car utilization would be hampered by train length restrictions.

Long trains of empty equipment must be moved to the area of need, particularly when they move one-way traffic such as grain and coal. And many times large volumes of gondolas, covered hoppers, and box-cars must be moved from a surplus area to an area in short supply in a hurry, and any restriction placed on the railroads' ability to move any and all cars will affect car utilization.

Specialized unit trains have been established on the basis of 100-car lengths. Loading and unloading facilities, along with transit time, has been developed to meet the needs at a most advantageous cost.

Senator LONG. I'm going to have to call time. I've read the whole statement, sir, and it will all be printed in the record.

Mr. DEMPSEY. Mr. Cena will be next.

Mr. CENA. I have on the end of my statement there just three exhibits that I was going to speak to. The first exhibit simply refers to the conclusions testified to this morning, that the problem of increasing train accidents is not related to human error, but it is to the maintenance of roadbeds. The track structure isn't the culprit in this increase. The human error accidents which would possibly be conceivably be thought as the extension of a reduction of hours of service would improve the safety records just simply do not exist. In other words, it cannot be said that injuries or accidents, train accidents, would not be decreased with a shorter period of service.

On exhibit B is an interesting explanation of the comparison of personal injuries with time on duty. Now, again, this reflects that injuries do not increase with time on duty. And in fact, it is exactly the opposite.

In exhibit C, we attempt to compare train accidents with time on duty. And here, once again, I believe we have conclusively shown that the time on duty has frequently little to do with when the accidents would occur.

Senator LONG. How do you explain that?

Mr. CENA. Well, I am caught in the bind of trying to summarize, a rather difficult thing for me to do at this moment. And if you would take a look at exhibit B there, I can take you through.

Senator LONG. I have been looking at it.

Mr. CENA. In the first hour of employment, the injuries are less than in the second hour of employment. Exhibit B is a comparison of personal injury with time on duty. This exhibit reflects, from an AAR study, the employees—well, I'm just going to have to back up here. I beg your pardon. I've gotten myself confused.

Exhibit B is a comparison of personal injuries with time on duty. The red bars represent the percentage of injuries which occurred in each time band. The blue bars show the percentage of man-hours worked in each time band. As you can see, the 2d, the 3d, the 4th, the 5th, and the 12th hours are relatively less safe, while the 6th through



the 11th hours are relatively safer. In other words, it cannot be said that injuries increased with time on duty.

Now, what this reflects to me is that by extending the period of time that an employee works it would not reflect that it would be a more unsafe situation for the employee. On the train accident side, we have showed the relationship between accidents caused by human factors or by engineers. The train accidents now—data was provided by FRA and reflects all accidents based on human factors which occurred in 1976. The man-hours worked by engineers are from an AAR survey of 14 railroads representing 80 percent of the employment of class 1 railroads in May and November of 1976.

The red bars again here represent the percentage of human factor train accidents in each time band. The blue bars show the percentage of engineer man-hours worked in each time band. All the red bars total 100 percent, the blue bars 100 percent. Exhibits B and C show that train accidents with personal injuries do not increase with time on duty, and there is no basis for assuming that employee fatigue is a significant safety hazard.

In addition, this legislation would require tremendous expenditures and would not return any safety productivity or service improvement.

I would like to say a couple of words here about section 5 of S. 2898, which imposes the definition of "designated terminal." This provision is not a mere technical amendment, but I believe it would seriously affect railroad operations. I understand that the meaning of this phrase has been considered by the courts, and that FRA intends to present the matter to the U.S. Supreme Court. I think we should await the outcome of this judicial process.

Finally, I certainly share your concern for railroad safety. Under my direction, in the last 10 years on the Sante Fe, we have established the best safety record in the industry. And I thought—or, if I thought that this legislation would improve safety, I certainly would not be here today, Mr. Chairman.

I would like to urge that the amendments of the Hours of Service Act contained in S. 2898 not be enacted.

Senator LONG. Thank you very much, sir.

Mr. DEMPSEY. Thank you, Mr. Chairman.

Senator LONG. As I said, we will print all of your presentation, together with the charts—I don't know whether we can accommodate you by printing the charts in color, but if not we will shade them so people can see what the difference is.

I had planned ask a couple of questions, but I think you have answered them in the course of your testimony, so thank you very much, gentlemen.

Mr. DEMPSEY. Thank you, Mr. Chairman.

[The statements follow:]

STATEMENT OF WILLIAM H. DEMPSEY, PRESIDENT, ASSOCIATION  
OF AMERICAN RAILROADS

My name is William H. Dempsey, and I am President of the Association of American Railroads. The railroads which are members of the Association operate 92 percent of the total line-haul mileage, employ 94 percent of the workers and produce 97 percent of the freight revenues of all railroads in the United States.



Appearing with me are William J. Harris, Vice President, Research and Test, of the AAR and James E. Martin, Vice President, Operations and Maintenance, of the AAR. Mr. Martin will also be testifying later with regard to a legislative proposal concerning train lengths and Mr. Lawrence Cena, President of the Santa Fe Railroad, will testify on a proposal concerning the hours of service.

Contrary to some assumptions made in the aftermath of occurrences earlier this year in Florida and Tennessee, the facts on railroad safety are rather encouraging when viewed in perspective.

The railroad safety record—both in general operations and with regard to hazardous materials—is a good one. Preliminary Federal Railroad Administration (FRA) figures indicate that total fatalities in railroad accidents during 1977 were the lowest since record-keeping began in the last century. And 1977 was not an anomaly. The next lowest year was 1975 and the third lowest was 1976. From 1966 to 1976—the last year for which final figures are available—fatalities showed a 37 percent drop. (A complete breakdown of fatality statistics is included in Appendix A.) The Subcommittee will note the data show significant declines in all classes of fatalities—employees, grade crossing casualties, trespassers, passengers and others.

It is revealing to look at fatality statistics in the light of the tempo of rail operations. While rail freight traffic, expressed in ton-miles, was 11.5 percent greater in 1977 than in 1971 and passenger-miles showed an increase of 15.5 percent, fatalities resulting from railroad accidents have declined nearly 25 percent over the same period.

Injuries from rail accidents have also shown a decade-long downward trend. In 1974, total injuries were 20,818, which was nearly 25 percent lower than in 1964.<sup>1</sup>

This ability of the railroad industry to increase its business volume while reducing the loss of life resulting from the relatively hazardous environment in which railroads must operate has few parallels. This progress has stemmed from a variety of factors including increased employee and public safety programs initiated by the Nation's railroads; extensive state and local grade crossing educational and enforcement programs carried on under the name, "Operation Lifesaver"; greater Federal involvement in improving grade crossing protection; and a massive expansion of the industry's safety research programs which have been supplemented by rail labor and government participation. In addition, this record has been made possible by the ability of the railroads to provide more freight service with fewer trains and fewer employees, trends which have reduced the chance for fatalities and injuries.

It is an ironic fact that at the same time death and injury rates were dropping, the number of reported train accidents has risen. This is a result, to some extent, of the kinds of accidents railroads have, the way these accidents are reported, and the standards by which they are viewed.

The FRA categorizes accidents into three groupings for reporting purposes: train accidents, train incidents and non-train accidents.

Train incidents refer to occurrences in which there was relatively little financial loss but which resulted in death or injury. As a result of the changes in reporting criteria for injuries beginning in 1975 (see footnote 1), the total number of incidents is now larger than it was in earlier years. In 1976, this category resulted in 1,299 deaths, the vast majority of which occurred at grade crossings.<sup>2</sup>

Non-train accidents relate to injuries or deaths not involving the movement of trains.<sup>3</sup>

Train accidents is the category which receives the most public attention. Such accidents may or may not involve injury or death. The reporting criterion is tied to financial loss. Since January 1, 1977, an accident is a "train accident" if it involves at least \$2,300 damage to railroad property—whether or not it involves any injuries. Even a simple yard derailment—far less serious potentially than a truck tire blowout—can result in costs that are this high. In 1975 and 1976, the

<sup>1</sup> After January 1, 1975, the Federal Railroad Administration changed its reporting criteria which resulted in injuries and occupational illnesses being reported that had not been reported in the past because they did not result in at least one day's lost time. All injuries requiring more than first aid must now be reported. Thus, current figures are not comparable with earlier ones.

<sup>2</sup> Fatalities at grade crossings have also been dropping. Preliminary FRA figures show the 1977 total down 47 percent from the 1966 total despite substantial increases in highway traffic.

<sup>3</sup> Such accidents claimed 227 lives in 1976.



threshold was \$1,750. From 1957 through the end of 1974—the only extended period during which the data are comparable—the threshold for a reportable train accident was set at \$750. Although the total number of reported train accidents increased 57.4 percent from 1966 to 1974, this growth resulted partly because of expanded operations and partly because inflation caused mishaps to be reported which would not have been included in the number before. Taking those factors into account, the increase over the nine-year period was 15.9 percent.<sup>4</sup>

In 1976, there were 10,248 train accidents. Approximately 42 percent of these accidents were caused by defects in track or structures, 21 percent by equipment problems, 23 percent by human factors, and 14 percent by other factors. Deaths in this category totaled 158. Stated another way, train accidents accounted for only about nine percent of total deaths. (Reported train accident statistics for 1966–1976 are provided in Appendix B.)

Of those train accidents, 7,934 were derailments. The average monetary damage incurred in derailments was \$23,226—less than the price of one new freight car. On Class I railroads, there were 7,658 derailments. Of these, only 381 involved damage of more than \$100,000. Only 115 of that number involved damage of more than \$250,000, and only 24 of that number involved damage of \$500,000 or more. Such a great difference between the most costly accidents and the average cost indicates that the vast majority of derailments are, indeed, not very serious in monetary terms.

Moreover—and more significantly—if the inflation factor is removed by applying 1976 dollars to the cost of derailments on Class I roads from 1966 to 1976 it can be seen that the number of serious derailments—those involving the most property damage—and the most serious threat of death and injury—has dropped substantially in recent years. (Appendix C presents this information in full for the years 1966–1976; see also pages 12–14.)

I have not made this explanation for the purpose of criticizing the FRA or its reporting standards. Obviously some criteria must be applied. But, if the criteria are not fully understood, one reading them could easily get a totally false picture of the trends in railroad safety.

Let us turn now to the subject of railroad transportation of hazardous materials—a subject of much attention in the wake of the recent tragedies.

It is important to remember that great amounts of these materials are carried by rail, not despite the fact that they are hazardous—but rather because of it. Railroad carriage of hazardous materials is, generally speaking, the safest mode of transit for these substances necessary to everyday life and commerce.

In a recent appearance on television's "Good Morning America," James King, chairman of the National Transportation Safety Board, noted that about 2.4 percent of all transportation accidents involve hazardous materials. However, he said that 91 percent of those accidents, 75 percent of the injuries, and about 80 percent of the fatalities occur on highways and involve motor vehicles.

It would follow from this assessment that less than nine percent of all accidents involving hazardous materials occur in rail transportation. Yet, according to the Department of Commerce's 1972 Census of Transportation—the most recent available—more than 40 percent of all tonnage of major hazardous materials, excluding petroleum, moved by rail. Since the railroads have a higher share of the longer movement, 70 percent of the transportation (ton-miles) of these products were provided by rail service.

According to a report of the Secretary of Transportation on Hazardous Materials Control, the years 1975 and 1976 saw a total of 45 deaths resulting from the transportation of hazardous materials. Of these, two occurred on the railroads. The other 43 occurred in movements by private and for-hire highway carriers.

Let me emphasize that I am neither trying to transfer attention to the motor carriers, which operate in a more uncontrollable environment, nor am I trying to wipe away the deaths that occurred this year. But I think these figures illustrate the thesis with which I began this discussion.

First, that it is necessary that hazardous materials be transported, and, second, that—in an imperfect world—railroads are generally the safest way to transport most such materials.

In 1976, more than a million carloads—about 80 million tons—of materials classified as hazardous traveled by rail. Most such materials traveled in tank

<sup>4</sup> See Preliminary Draft (March 3, 1978) of OTA study, *An Evaluation of Railroad Safety*, p. V-15.



cars. There are 170,000 tank cars in the national rail fleet, of which railroads own only about 2,675—about 1.5 percent of the total. The majority are owned by private non-railroad companies.

Of the million carloads which moved by rail in 1976, 150 were involved in accidents in which release of material was reported. Not all were serious accidents. In fact, 135 involved damage of less than \$250,000. Only 11 of the 150 reports of released material involved violent ruptures of the cars.

Because of the potential for disaster inherent to the movement of hazardous materials, the railroads are not complacent about their record simply because it is good in comparison with highway movements. We devote a great deal of attention to this subject in the Association of American Railroads. Our Bureau of Explosives—composed of recognized experts in the field—serves all modes of transportation by acting as a central agency for the collection, analysis, and dissemination of information about hazardous materials. In addition, the Bureau performs over 400 functions outlined in the Department of Transportation's hazardous materials regulations. AAR and government regulations cover loading, operating practices, equipment specifications, inspection of cars carrying hazardous materials, and procedures to be followed in the event of an accident.

In 1970, after several major accidents involving hazardous materials, the Association of American Railroads and five major tank car builders, through the Railway Progress Institute and with Federal Railroad Administration cooperation, launched a Tank Car Safety Research and Test Project—one of the most extensive freight safety studies ever undertaken by private companies. This study has yielded important results and should continue to have significant positive effects on the transportation of hazardous materials. The cost of this project—including contributed manpower—totaled \$3 million.

An early finding of this study was that more than half of the claims resulting from tank car accidents were attributed to accidents involving cars officially designated by the U.S. Department of Transportation as Class 112 and Class 114. These types of cars—there are about 23,000 in the 170,000-car tank car fleet—are all pressurized.

After intensive analysis of accident reports covering hazardous materials and exhaustive testing of tank car components, this study produced recommendations that those tank cars which carry the most dangerous commodities be equipped with head shields, metal plates attached to the ends of each tank car. These plates guard against the possibility of "spearing" by the coupler of an adjoining car in a derailment, a phenomenon which had been identified as a major cause of tank car punctures in derailments in the accident analysis.

Another recommendation directed at the same problem is the "shelf-type" coupler, which resists vertical disengagement and thus helps keep adjoining cars coupled to a tank car in a derailment.

A third major proposal called for thermal insulation to protect a tank car from the effects of heat which could be generated by a fire in an accident.

The Department of Transportation generally adopted these concepts, and pressurized tank cars manufactured after December 31, 1977, are required to carry these improvements. In addition, the regulations establish a schedule for retrofit of the improvements onto cars already in service, and the FRA has recently held hearings to determine whether or not the schedule can be accelerated. About 23,000 cars will be affected. By the end of December 31, 1981, all those cars will have at least the first two of these features—head shields and "shelf" couplers—although many of them will be retrofitted sooner. The couplers, for example, will be retrofitted by July 1, 1979. The retrofit schedule for head shields calls for 20 percent of the cars to be fitted after one year, 50 percent at the end of the second year, and 80 percent after three years. A similar schedule is set for thermal protection. It is tragically ironic that the accidents at Waverly, Tennessee and Youngstown, Florida should have occurred hard on the heels of the introduction of these improvements that will soon significantly reduce the chances of similar accidents.

Another note of irony in this connection concerns the establishment of a hazardous materials task force made up of key executives of railroads, chemical companies, and associated interests. The decision to form this task force, which will explore additional ways of improving public safety while moving these essential goods, was made just days before the Waverly, Tennessee accident.

I would now like to turn to the question of accident causes. The recent derailments sparked, in many minds, the immediate conclusion that decrepit track on



the Nation's railroads had created an extremely unsafe condition. As I have demonstrated, the first fault in that conclusion is that railroad safety—in terms of human safety—is improving, not deteriorating.

The second fault is that track conditions have not been the cause of most serious railroad accidents involving hazardous commodities. They were not, according to the preliminary findings of the National Transportation Safety Board, the cause of the two recent tragedies—unless one would stretch the term “track conditions” far enough to encompass sabotage.

I will certainly not deny that some railroads have sections of track which are in less than satisfactory condition. This has generally been the result of serious financial problems affecting the railroads which own the track. However, not all railroads are in such financial difficulty. Railroads in the West and Southeast are, in the main, relatively prosperous and the condition of their mainline track reflects that ability to finance the necessary levels of maintenance. Some carriers in the East have also been able to avoid the problems besetting bankrupt and marginal carriers.

However, there is no demonstrably significant relationship between the frequency of major accidents and either the financial conditions or maintenance levels of particular roads. The explanation for the seeming incongruity lies in the operating practices adopted by the weaker railroads.

All railroads attempt to protect employees and cargo as well as minimize the possibility of accidents by adjusting train speeds to take known track conditions into account. This has become a frequent practice on bankrupt and marginal railroads which can ill afford the losses inherent in a major accident.<sup>5</sup> These speed reductions can have a very adverse effect on service and operating costs, and accordingly, they represent a major competitive drawback in an interdependent industry in which an estimated 70 percent of total revenues involve shipments over two or more railroads. Unless the earnings of these companies are sharply improved and the repayable financing provided by the Congress under the 4-R Act fully distributed, it is doubtful the estimated \$4 billion in deferred maintenance can be reduced significantly.

At the same time, these deficiencies have not led to an increase in major accidents. In fact, several industry safety awards have been won by some of the most financially pressed railroads in recent years.

To examine the relative frequency of accidents and derailments on the so-called weaker railroads, we have examined all train accidents and all derailments involving Class I railroads for the 11-year period, 1966–1976, which would have qualified as reportable accidents under the FRA reporting criteria in 1976.<sup>6</sup> The total accidents and derailments for all Class I carriers were adjusted to restate the property damage in terms of 1976 dollars throughout the period, and the results were then compared with similar statistics for seven bankrupt carriers and ConRail.<sup>7</sup>

As Appendix C indicates, the selected carriers, which provided 17 percent of the total gross ton-miles of passenger and freight service, were responsible for 21.7 percent of all accidents and 23.2 percent of all derailments in this period. Throughout this period, these selected carriers accounted for a higher percent of the industry's accidents than they did of total operations measured in gross ton-miles.

However, a more important observation is that these same financially troubled carriers were responsible for a smaller percentage of derailments involving major property damage between 1966–1976. With 17 percent of the gross ton-miles of operations during the period, the eight bankrupt carriers had 16.7 percent of the derailments involving \$100,000 or more in property damage, 15.5 percent of those over \$250,000, and 14.5 percent of those over \$500,000.

From 1971 through 1976, the excellent record of these marginal carriers is more pronounced. With 15.9 percent of the industry's gross ton-miles in those six years, these carriers had only 11.9 percent of the total derailments over \$100,000, 8.5 percent of those over \$250,000, and 6.2 percent of those over \$500,000.

Appendix C also shows that there has been a decline in costly derailments for the industry as a whole in recent years. From 1966 through 1976, derailments

<sup>5</sup> Most railroads carry insurance, but deductible features may range up to \$5 million. Thus, most railroads are, in essence, “self-insured” for rather substantial amounts.

<sup>6</sup> In effect, this adjustment eliminates certain inexpensive accidents in earlier years which would not have been reported in later years even if they were increased to reflect inflation. The adjustment thus places accidents on a constant dollar basis consistent with the 1976 criteria.

<sup>7</sup> These railroads are the Boston and Maine, the Central of New Jersey, Conrail, Erie Lackawanna, Lehigh Valley, Penn Central, Reading and Rock Island.



causing over \$100,000 (1976 dollars) declined 14.8 percent, those over \$250,000 dropped 45.8 percent, and those over \$500,000 decreased by 64.7 percent despite traffic increases.

In short, the number of costly derailments has shown a consistent downward pattern for all major railroads, with the most financially pressed carriers registering fewer such accidents than the industry average.

Turning again to the movement of hazardous materials, we find a similar lack of correlation between major accidents and the financial condition of various railroads. An examination of the 15 most serious accidents from 1969 through 1975 involving the movement of dangerous substances shows causes that virtually defy classification—but only one was definitely attributed to track by the NTSB. (Appendix D gives an account of these accidents.)

Only two of the major accidents took place on those railroads—bankrupt or marginal—which (at the time of the accidents) ranked in the lowest third of all major railroads in terms of earnings. Four occurred on the properties of railroads which ranked in the top third, and the other nine involved railroads in the middle of the industry's financial spectrum. The same general distribution of accidents is found when these 15 major accidents are classified in terms of the level of track maintenance.

I would like to make clear, however, that railroads have not been ignoring track problems. There are instances of deferred maintenance by financially pressed railroads, to be sure, but industrywide spending for capital improvements and maintenance is at record levels.

In 1976, spending for these purposes reached more than \$8 billion, and this was topped in 1977 by a new all-time high of more than \$9 billion. And I should point out that these spending records were achieved in the face of industry earnings which for the past three years have been the lowest since prior to World War II.

In 1977, railroads invested \$3.3 billion for maintenance of way (track, roadbed, and facilities), a 50 percent increase from the \$2.2 billion spent in 1975. Expenditures last year for equipment maintenance were \$2.9 billion, up 40 percent from the \$2.2 billion invested in 1975. (These advances came about as the result of higher spending in all three railroad territories.) And capital expenditures for non-equipment projects in 1977 reached another all-time mark—\$750 million, a 54 percent increase over '75.

The industry's latest figures (through 1976) show that 27 million new ties were installed in 1976. That's the most in 20 years, representing a 35 percent increase over the average of the past 10 years. Some 802,000 tons of new rail were laid in 1976, again the largest amount in the past 20 years and 33 percent more than the past ten-year average. Figures for 1977 are expected to equal or exceed these results.

To help provide a smoother ride and greater safety, some 55,000 miles of welded rails were in service going into 1978. This represents about half of the mainline in the industry, and installation is continuing at the rate of approximately 4,000 miles annually. Welded rails eliminate the wear factor at joints which is present when sections of rail are laid end-to-end and bolted together.

Recently, Federal aid programs have been established to aid railroads in rehabilitating their plant. The largest modernization projects carried out under the programs enacted in 1976 are in the Northeast and Midwest, where much of the track maintenance problems are concentrated. In those areas, the Consolidated Rail Corporation (ConRail) has begun a massive ten-year, multibillion-dollar rehabilitation program of the properties formerly operated by six bankrupt railroads. To date \$2.1 billion in repayable financing has been authorized for these purposes with even more funds provided by the new railroad from private sources.

In addition, the Department of Transportation and Amtrak have initiated a \$1.7 billion Federally funded, five-year project to upgrade facilities in the Northeast Corridor from Boston to Washington and to improve high-speed passenger service. Full-scale efforts in this area have not yet commenced.

Under the 4-R Act of 1976, a total \$62 million in preference shares and \$12 million in guaranteed loans have been put to work by five other railroads, improving tracks and equipment. The Act authorizes the Department of Transportation to provide a total \$600 million in low interest, repayable financing and \$1 billion in guaranteed loans to railroads for track and equipment improvements. The railroad industry is hopeful that much more of the unused funds will be made available by the Department of Transportation in the near future.



The Office of Technology Assessment has recently released an evaluation of railroad safety. We generally support the findings of this study, particularly statements which say, basically, that the regulatory activities of the Federal government have not, apparently, had any effect on the railroad accident rate and may, in some instances, have been counterproductive.

We can also easily agree with a finding that "Because of the complex nature of the railroad system, continued cooperation among concerned parties is essential if further efforts to reduce safety losses are to occur."

(Comments on the OTA report are provided in Appendix E.)

A few years ago, the National Transportation Safety Board, in analyzing projected freight traffic volume in 1980, estimated that a 4.4 percent increase in the railroads' share of traffic, and a comparable decline in truck traffic, could mean a saving of 533 lives and 7,302 injuries in that year alone.

This is a testimonial to the comparative safety of railroad freight transportation. Proof of further improvements is offered by the industry's declining fatality rates and rapid escalation in track maintenance programs.

Now, however, a few spectacular tragedies, combined with an erroneous reading of complex statistics, have prompted a flood of proposals framed for the stated purpose of improving railroad safety.

There is no evidence that implementations of these proposals would improve public safety—and virtually every one of the proposals I have heard would have the unwelcome result of increasing greatly the cost of rail operations or reducing the efficiency of rail freight operations—or both. For example, the proposal to reduce hours of service to ten would cost the industry more than \$¾ billion in operating costs each year and another \$1.45 billion in new investment. The proposal limiting train length to 4300 feet would cost the industry an estimated \$1 billion annually in operating costs and more than \$3 billion in additional capital costs. At the same time, a statistical analysis of these proposals indicates that their effect on railroad safety would be negligible. Thus, two proposals which are unlikely to have any appreciable beneficial effect on public safety would initially drain nearly \$7 billion from an industry which, in 1976, had a net income of only \$355 million.<sup>8</sup>

Long before the full measure of such drastic projected losses was incurred, railroad safety would be substantially jeopardized. Equipment maintenance programs would have been curtailed, the industry's safety research programs—greatly expanded in recent years—would have been scaled down and the railroads' grade crossing protection efforts and corollary public education programs, which have been a great success in recent months, would also have to be reduced.

Railroad safety effects aside, the likely result of these proposals would be a diversion of rail traffic to the highways. Thus, would the projection of the Safety Board be reversed, the rail share would decrease, the truck share would increase, and lives would be lost instead of preserved.

In the area of hazardous materials alone, does it make sense to take costly actions aimed at reducing the accidents of the mode involved in nine percent of the total accidents, if those actions result in more dangerous substances moving on the mode which is involved in 91 percent of all accidents? Does it make sense to run far more frequent and shorter trains in the name of safety, when the additional trains will clearly increase the potential for grade crossing fatalities, which already represent 60 percent of all railroad fatalities?

I suggest that such steps make no sense. I do not denigrate the laudable intentions of those seeking to enhance rail safety. I do caution against allowing an emotional reaction to recent events to lead us into hasty legislative action which could be not only ill-advised but counterproductive from the standpoint of public safety and would be a financial disaster to an already beleaguered industry.

Another proposal deserving of special comment at this time is the so-called "Anti-Harassment" amendment to the Federal Railroad Safety Act. This proposal is not, in fact, a safety proposal at all, but a radical revision of the organic labor-relations law of the railroad industry, the Railway Labor Act. The net effect of the anti-harassment provision would be to disrupt the long-standing grievance procedures established under the Railway Labor Act and to sanc-

<sup>8</sup> The ordinary net income of Class I railroads, excluding the two passenger carriers—Amtrak and Auto-Train—will be approximately \$200 million, according to preliminary reports.



tion in their stead the sort of wildcat strike which has proved so devastating to the coal industry.

Detailed comments on S. 2897 and S. 2998, two bills presently before this Subcommittee, are presented in the separate statements of Mr. Martin and Mr. Cerna on the train length and hours of service provisions, respectively, and in Appendices G and H to this statement.

In its report, the Office of Technology Assessment stated that "the existing Federal safety laws, taken as whole, provide sufficient statutory authority to deal with the existing hazards of railroad operations." We would concur with that finding.

Railroad safety is not a subject which has languished in obscurity until brought to the forefront by major accidents. The railroad industry, in cooperation with allied industries, labor unions, and the Federal government, has devoted significant amounts of time, money, and manpower to studies and programs aimed at improving safety—both in terms of human life and the cost of accidents. The tank car program which I have discussed, a major research project on track-train dynamics, a locomotive cab safety program, a grade crossing inventory—all are examples of efforts initiated by the railroad community. (A more complete summary of the safety-related activities of the AAR's Research and Test Department is contained in Appendix F.)

The railroad industry desires to continue to build on its record of activity and accomplishment and we seek the assistance of Congress in achieving our safety goals. The principal thing that Congress can do in furtherance of railroad safety is to assist the industry in achieving financial good health. To that end, the industry has recently approved an affirmative safety legislative program that I would like, at this time, to propose and describe, and for which the support of this Committee is earnestly requested. Actual legislation to carry out the program is not being offered at the present time, but we intend to seek the introduction and reference to the appropriate Congressional Committees of bills to implement the following major concepts in the areas of safety-related tax incentives, branch line abandonments, railroad-highway grade crossing protection, and federal aid for safety-related activities of the railroad industry.

#### I. SAFETY RELATED TAX INCENTIVES

There is an urgent need for tax incentives to aid the railroad industry to meet its vast capital needs for improving its rolling stock and fixed plant. Such improvements are vitally necessary to provide the safest possible railroad transportation system.

These tax incentives should include an increased investment tax credit to not less than 20 percent for investment in equipment and railroad track structure. In addition, the increased credit should be extended to all expenditures for railroad rolling stock and fixed plant. Such liberalization of current tax law will help in providing the capital base necessary in developing a safer railway system.

In order that the additional investment tax credit be a true incentive for meeting the rail safety problem, it must be available to all railroads. This can easily be accomplished by providing that the credit be made available to railroads on a "refundable" basis. Such a provision would provide necessary cash flow to non-taxpaying railroads for investment tax credits which cannot be used to reduce federal income tax.

In addition to the increased investment tax credit, the railroads should be permitted to amortize capitalized investment over a five-year period of time with investment credit based on useful life with no minimum tax. This five-year amortization would be of great value to the railroads in raising the internally generated funds which are the primary source of obtaining the funds required to make improvements to fixed plant.

#### II. EXPEDITED PROCEDURES FOR BRANCH LINE ABANDONMENTS

Under present procedures, the processing of abandonment petitions through the Interstate Commerce Commission can take up to two years. We suggest that there be more demanding time constraints placed upon the Commission's procedures so that the Commission must issue an initial decision within 180 days from the filing of an abandonment application and a final decision within 180 days following the initial decision if there is an appeal from that decision. The effect of these limitations would be to reduce the total processing time to one year.



The ability of the railroads to eliminate, in a more timely fashion, unnecessary branch line operations will facilitate the modernization of the essential parts of the rail plant. When the railroads abandon an unnecessary line, they not only stop the drain on their resources, but also strengthen the remaining parts of their systems by applying the reusable ties and rail to the needed parts of their plant. This strengthening of the needed rail plant obviously permits safer operations.

### III. RAILROADS-HIGHWAY GRADE SEPARATION PROTECTION

The federal government should fund one-hundred percent of the construction and maintenance costs of rail-highway grade crossing protection projects, including grade separation and automatic warning devices. At the present time funding is 90 percent federal. Congress should recognize that grade separation structures and automatic grade crossing warning devices are parts of the street and highway system, and, as such, should be paid for and maintained by the government agencies involved just like any other safety devices for the benefit of the motoring public.

### IV. FEDERAL FUNDING FOR SAFETY RELATED ACTIVITIES

Substantial federal funding should be provided for safety-related activities, such as research and test, training, education, and accident response programs. Such activities would include training for railroad employees and fire fighters in handling derailments involving hazardous materials. Federal funds should be provided for educational programs for improving the safety knowledge of railroad and shipper employees and local fire departments. Accident response programs, providing centralized information about commodities moving by rail, would assist local authorities in dealing with emergencies by providing "first-call knowledge" in the event of an accident on any mode of transportation. The railroad industry also recommends increased federal funding for safety-related research and test activities, including cooperative programs such as the joint AAR-RPI Tank Car Safety Test and Research Project.

That the subject of railroad safety continues to command national attention is demonstrated by the OTA study which was undertaken long before the recent accidents and by the recently concluded National Transportation Board hearings on the carriage of hazardous materials. Moreover, the recently formed Task Force on Rail Transportation of Hazardous Materials is dedicated to a prompt review of all aspects of this problem and the development of further measures to protect the public. (A detailed description of the Task Force is attached as Appendix I.)

The railroad industry also intends to continue to cooperate with the Federal Railroad Administration in its efforts to promote better safety on the Nation's railroads.

We believe that these intensive activities, already in motion, and favorable consideration of the affirmative legislative program described above, can expand the progress that has been made once the necessary, thorough and impartial analyses are completed.

The railroad industry is deeply concerned with problems of enhancing safety and our concern with well intentioned—but poorly-conceived—legislation is not simply that such legislation will cost us money but that such legislation will make transportation considerably more expensive without saving either lives or property.

## APPENDIX A

### RAILROAD ACCIDENT FATALITIES: 1966-77

|                                            | 1966  | 1967  | 1968  | 1969  | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  |
|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Passengers.....                            | 23    | 12    | 11    | 6     | 8     | 16    | 47    | 6     | 7     | 8     | 5     | 2     |
| Employees.....                             | 159   | 166   | 146   | 178   | 155   | 118   | 127   | 158   | 140   | 110   | 100   | 104   |
| Trespassers.....                           | 678   | 646   | 628   | 627   | 593   | 551   | 537   | 578   | 565   | 524   | 458   | 465   |
| Others <sup>1</sup> .....                  | 1,824 | 1,659 | 1,574 | 1,488 | 1,469 | 1,325 | 1,234 | 1,174 | 1,196 | 918   | 1,121 | 960   |
| Highway grade crossings <sup>2</sup> ..... | 1,780 | 1,632 | 1,546 | 1,490 | 1,440 | 1,356 | 1,260 | 1,185 | 1,220 | 978   | 1,099 | 946   |
| Total.....                                 | 2,684 | 2,483 | 2,359 | 2,299 | 2,225 | 2,010 | 1,945 | 1,916 | 1,908 | 1,560 | 1,684 | 1,531 |

<sup>1</sup> The preponderance of these fatalities occurred in highway grade crossing accidents.

<sup>2</sup> Fatalities distributed in 4 previous categories and not duplicated in the total.

Sources: Fatality and injury statistics for years 1966 through 1976 from FRA Accident/Incident Bulletin: Summary and Analysis of Accidents on Railroads in the United States; for 1977, from Preliminary Report of Railroad Accidents/Incidents and Resulting Casualties, FRA.



## APPENDIX B

*Train accidents by contributing cause—class I and class II railroads*

| <i>Contributing cause and year</i> | <i>Human factors</i> | <i>Total accidents</i> | <i>Contributing cause and year</i> | <i>Equipment failures</i> | <i>Total accidents</i> |
|------------------------------------|----------------------|------------------------|------------------------------------|---------------------------|------------------------|
| 1966 <sup>1</sup>                  | -----                | 1,999                  | 1966 <sup>1</sup>                  | -----                     | 1,843                  |
| 1967                               | -----                | 1,987                  | 1967                               | -----                     | 1,897                  |
| 1968                               | -----                | 2,174                  | 1968                               | -----                     | 2,042                  |
| 1969                               | -----                | 2,339                  | 1969                               | -----                     | 2,142                  |
| 1970                               | -----                | 2,191                  | 1970                               | -----                     | 1,890                  |
| 1971                               | -----                | 1,912                  | 1971                               | -----                     | 1,630                  |
| 1972                               | -----                | 1,853                  | 1972                               | -----                     | 1,577                  |
| 1973                               | -----                | 2,282                  | 1973                               | -----                     | 1,992                  |
| 1974                               | -----                | 2,238                  | 1974                               | -----                     | 2,175                  |
| 1975 <sup>2</sup>                  | -----                | 1,847                  | 1975 <sup>2</sup>                  | -----                     | 1,906                  |
| 1976                               | -----                | 2,360                  | 1976                               | -----                     | 2,174                  |

*Defects in way or structures*

|                   |       |       |
|-------------------|-------|-------|
| 1966 <sup>1</sup> | ----- | 1,428 |
| 1967              | ----- | 1,844 |
| 1968              | ----- | 2,128 |
| 1969              | ----- | 2,483 |
| 1970              | ----- | 2,470 |
| 1971              | ----- | 2,276 |
| 1972              | ----- | 2,544 |
| 1973              | ----- | 3,556 |
| 1974              | ----- | 4,264 |
| 1975 <sup>2</sup> | ----- | 3,176 |
| 1976              | ----- | 4,260 |

*All other causes*

|                   |       |       |
|-------------------|-------|-------|
| 1966 <sup>1</sup> | ----- | 1,523 |
| 1967              | ----- | 1,566 |
| 1968              | ----- | 1,684 |
| 1969              | ----- | 1,579 |
| 1970              | ----- | 1,544 |
| 1971              | ----- | 1,486 |
| 1972              | ----- | 1,558 |
| 1973              | ----- | 1,868 |
| 1974              | ----- | 2,017 |
| 1975 <sup>2</sup> | ----- | 1,112 |
| 1976              | ----- | 1,454 |

*Total all train accidents*

|                   |       |        |
|-------------------|-------|--------|
| 1966 <sup>1</sup> | ----- | 6,793  |
| 1967              | ----- | 7,294  |
| 1968              | ----- | 8,028  |
| 1969              | ----- | 8,543  |
| 1970              | ----- | 8,095  |
| 1971              | ----- | 7,304  |
| 1972              | ----- | 7,532  |
| 1973              | ----- | 9,698  |
| 1974              | ----- | 10,694 |
| 1975 <sup>2</sup> | ----- | 8,041  |
| 1976              | ----- | 10,248 |

<sup>1</sup> From 1957 through the end of 1974, an accident involved damage of \$750 or more.

<sup>2</sup> In 1975 and 1976, an accident involved damage of \$1,750 or more.

Source: 1966-76 Federal Railroad Administration.

## APPENDIX C

## MAJOR DERAILMENTS: BANKRUPT VERSUS ALL CLASS I RAILROADS, 1966-76

| Year            | Number of train accidents <sup>1</sup> | Number of derailments <sup>1</sup> | Number of derailments (1976 dollars) |                               |                               |
|-----------------|----------------------------------------|------------------------------------|--------------------------------------|-------------------------------|-------------------------------|
|                 |                                        |                                    | Damage greater than \$100,000        | Damage greater than \$250,000 | Damage greater than \$500,000 |
|                 | (1)                                    | (2)                                | (3)                                  | (4)                           | (5)                           |
| 1966:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,100                                  | 783                                | 74                                   | 27                            | 7                             |
| Total.....      | 5,314                                  | 3,614                              | 447                                  | 212                           | 68                            |
| 1967:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,145                                  | 853                                | 78                                   | 32                            | 12                            |
| Total.....      | 5,528                                  | 3,868                              | 456                                  | 190                           | 60                            |
| 1968:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,405                                  | 1,050                              | 105                                  | 52                            | 19                            |
| Total.....      | 5,927                                  | 4,135                              | 507                                  | 230                           | 78                            |



## APPENDIX C—Continued

## MAJOR DERAILMENTS: BANKRUPT VERSUS ALL CLASS I RAILROADS, 1966-76

| Year            | Number of train accidents <sup>1</sup> | Number of derailments <sup>1</sup> | Number of derailments (1976 dollars) |                               |                               |
|-----------------|----------------------------------------|------------------------------------|--------------------------------------|-------------------------------|-------------------------------|
|                 |                                        |                                    | Damage greater than \$100,000        | Damage greater than \$250,000 | Damage greater than \$500,000 |
|                 | (1)                                    | (2)                                | (3)                                  | (4)                           | (5)                           |
| 1969:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,813                                  | 1,398                              | 147                                  | 64                            | 14                            |
| Total.....      | 6,157                                  | 4,365                              | 522                                  | 227                           | 71                            |
| 1970:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,546                                  | 1,182                              | 98                                   | 40                            | 12                            |
| Total.....      | 5,805                                  | 4,080                              | 425                                  | 191                           | 62                            |
| 1971:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,079                                  | 782                                | 40                                   | 7                             | 1                             |
| Total.....      | 5,187                                  | 3,687                              | 355                                  | 143                           | 45                            |
| 1972:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,019                                  | 811                                | 25                                   | 7                             | 2                             |
| Total.....      | 5,261                                  | 3,926                              | 350                                  | 120                           | 25                            |
| 1973:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,404                                  | 1,174                              | 48                                   | 12                            | 3                             |
| Total.....      | 6,604                                  | 5,122                              | 419                                  | 130                           | 31                            |
| 1974:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,618                                  | 1,353                              | 66                                   | 18                            | 4                             |
| Total.....      | 7,026                                  | 5,656                              | 417                                  | 140                           | 29                            |
| 1975:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 1,724                                  | 1,405                              | 46                                   | 11                            | 1                             |
| Total.....      | 7,834                                  | 6,060                              | 340                                  | 90                            | 24                            |
| 1976:           |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 2,041                                  | 1,632                              | 45                                   | 8                             |                               |
| Total.....      | 10,024                                 | 7,658                              | 381                                  | 115                           | 240                           |
| Totals:         |                                        |                                    |                                      |                               |                               |
| Sel. roads..... | 15,894                                 | 12,423                             | 772                                  | 278                           | 75                            |
| Total.....      | 70,667                                 | 52,171                             | 4,619                                | 1,788                         | 517                           |

<sup>1</sup> Inflated thresholds (Federal Railroad Administration).

## APPENDIX D

## A BRIEF DESCRIPTION OF MAJOR HAZARDOUS MATERIALS ACCIDENTS—1969 THROUGH 1975

This Appendix will give a brief narrative description of fifteen major accidents involving hazardous materials during the years 1969 through 1975.

Laurel, Mississippi, February 3, 1969: On this date at 4:14 a.m. fifteen tank cars of liquefied petroleum gas were derailed enroute through Laurel, Mississippi on a Southern Railway freight train. The damage caused to the tanks as a result of the derailment led to an almost immediate violent eruption of several of the tank cars. There was largescale property damage to the business district of Laurel and two fatalities occurred.

The National Transportation Safety Board determined that the cause of the initial derailment was a broken wheel.

Crete, Nebraska, February 18, 1969: A Chicago, Burlington and Quincy train derailed at about 6:30 a.m. on this date as the train was entering the town of Crete, Nebraska at a speed of about 52 mph. The derailed cars struck cars standing on a siding and one of them, a tank car filled with anhydrous ammonia was completely fractured, releasing 29,200 gallons of anhydrous ammonia into the atmosphere. Due to weather conditions, the gas cloud which was formed blanketed the surrounding area for a considerable time and caused the deaths of nine people, including three trespassers riding on the train.

NTSB has determined that the derailment was caused by the movement of a rail in a turnout due to lateral forces produced by the locomotive as it moved over track alignment and surface deficiencies. The complete fracture of the tank car was contributed to by the brittleness of the steel in the car caused by low ambient temperature.

Tobar, Nevada, June 29, 1969: On this date, and at this place, a Western Pacific train carrying military bombs, experienced an explosion of some of the bombs enroute.



It was determined that the cause of the explosion was a fire within the car but the cause of that fire was never precisely determined.

Glendorra, Mississippi, September 21, 1969: At about 2:35 in the afternoon on this date, the engineer of an Illinois Central Freight train applied the brakes in full emergency in an attempt to avoid striking a pedestrian near the Glendorra, Mississippi station. One of the cars in the train buckled and caused a derailment of fifteen cars including eight tank cars loaded with vinyl chloride. The coupler of one of the cars in the derailment punctured one of the tank cars, spilling its contents on the ground. While initially the wind was discharging the vinyl chloride vapor, at about 8:30 p.m. the vapor accumulated in a low place and was ignited by an unknown source. Several explosions followed the initial fire. An estimated 17,000 to 21,000 persons had been evacuated prior to the violent explosion of one of the vinyl chloride tank cars the following morning. Property damage was extensive but there were no fatalities.

NTSB determined that the derailment was caused by the buckling of the underframe of one of the cars during the course of the emergency brake application.

Crescent City, Illinois, June 21, 1970: In this accident, an eastbound freight train of the Toledo, Peoria and Western Railroad Company derailed at Crescent City at about 6:30 in the morning. Among the fifteen derailed cars were nine tank cars loaded with liquefied petroleum gas; one of the tank cars was punctured during the derailment and the leaking propane was ignited, engulfing the other tank cars in fire. A series of explosions of the remaining tank cars occurred, beginning about one hour following the derailment; 66 persons were injured and the business district of Crescent City received major damage.

The National Transportation Safety Board determined that the probable cause of this derailment was the breaking of a journal on a hopper car due to excessive overheating.

Sound View, Connecticut, October 8, 1970: In this accident, a Penn Central Transportation Company freight train derailed at about 8:50 in the evening near Sound View, Connecticut. Freight cars blocked the track in the path of a Penn Central passenger train which struck them, causing the puncture of an LPG tank car which had been designated as empty. The derailed units of the passenger train passed through ignited gases from the punctured tank car and both train crew members and passengers were injured. The official determination by the NTSB was that the derailment was caused by a broken side on one of the cars in the freight train.

Houston, Texas, October 19, 1971: A Missouri Pacific train, travelling on track belonging to the Atchison, Topeka and Santa Fe Railway, derailed 20 of its cars at Houston, Texas on October 19, 1971 at 1:44 p.m. Included in the derailed cars were six tank cars containing vinyl chloride monomer and two cars containing other hazardous materials. Two of the tank cars were punctured in the derailment and vinyl chloride monomer escaped and ignited. Despite efforts by the Houston Fire Department to control the fire, one of the tank cars ruptured violently approximately 45 minutes after the initial derailment and another tank car "rocketed" approximately 300 feet from its initial resting place. One of the firemen was killed during this sequence of events, 50 people were injured and there was considerable property damage.

This accident, according to NTSB, was probably caused by an unexplained emergency brake application which induced lateral forces exceeding the holding capacity of the track fasteners.

East St. Louis, Illinois, January 22, 1972: During classification in the Alton and Southern Yard in East St. Louis, Illinois, at about 6:20 in the morning on January 22, 1972, a tank car loaded with liquefied petroleum gas collided with a standing hopper car and the tank car suffered a puncture due to the impact of its head with the overriding coupler of an empty freight car. The gas leaking from the car vaporized into a large cloud which ignited and exploded causing injury to more than 230 people and property damage estimated at about \$7½ million.

The National Transportation Safety Board determined that the probable cause of the accident was an overspeed switching impact by the tank car due to the inability of the retarding system at the hump to effectively decelerate heavy cars with oil or grease on their wheel rims. Contributing to the cause was the absence of a backup system to halt cars which passed through the retarders at overspeeds.

Roseville, California, April 28, 1973: On this date, early in the morning in the Southern Pacific Yard, a car containing military bombs exploded and the explosions triggered similar explosions in a string of about 18 cars of these bombs.



No precise cause for this accident has been determined and the matter is now in litigation in the Federal courts in California.

Benson, Arizona, May 24, 1973: While approaching Benson, Arizona, a Southern Pacific Transportation Company freight train experienced a fire in one of 12 munitions boxcars in the train's consist. The boxcars were loaded with 500 lb. bombs. As the train stopped, the cargo exploded and the explosions continued for several hours.

NTSB has determined that the probable cause of this accident was the exposure of heat-sensitive bombs to a fire inside the car. According to the Board, the fire most likely originated from sparks off the brakeshoes which ignited the sodium nitrate impregnated floorboards.

Oneonta, New York, February 2, 1974: A Delaware and Hudson Railway freight train, moving northward around a curve just north of Oneonta, New York derailed at about 4:20 in the afternoon on February 12, 1974. Seven of the derailed cars were tank cars filled with LPG; one of these cars split open and the escaping gas ignited leading to fire and the rupture of four of the remaining tank cars about 30 minutes after the initial derailment. Fifty-four firemen and members of the press were injured by the ensuing explosions and fire.

This accident started when a broken center sill on the fourth car in the train caused the train to separate and the brakes to apply in emergency. NTSB determined that the probable cause of the accident was the inability of the track to resist the lateral forces induced by the emergency application.

Decatur, Illinois, July 19, 1974: During flat switching operations at the Norfolk and Western Decatur Yard, five tank cars loaded with isobutane gas impacted an empty boxcar. The coupler of the boxcar overrode the tank car coupler and punctured the tank; isobutane escaped and vaporized for eight to ten minutes before the resulting large vapor cloud ignited violently and over a wide area. Seven employee fatalities resulted along with extensive property damage.

The National Transportation Safety Board determined that the probable cause of the accident was the overspeed impact between the tank cars and the standing boxcar.

Wenatchee, Washington, August 6, 1974: On this date, in the Burlington Northern Yard, an explosion of a tank car loaded with PRM solution was triggered during routine switching operations.

Because most of the evidence was destroyed in the explosion, the NTSB was not able to determine a cause for this accident and the matter is now in litigation in the state of Washington.

Houston, Texas, September 21, 1974: At about noon on this date a tank car of butadiene was punctured following a switch-yard impact during humping operations at a terminal operated by Southern Pacific. The gas spilled from the car and formed a large vapor cloud which dispersed and ignited violently causing the death of one person and injuries to 235. Some 30 additional tank cars of hazardous materials were involved in the ensuing fire.

The NTSB determined that the probable cause of the accident was an overspeed impact due to failure of the retarding system to slow two coupled tank cars and the absence of a back-up system to control cars which passed through the retarders at excessive speeds. Contributing to the failure of the retarding system was a foreign substance on the wheels of two cars which preceded the directly involved tank cars through the retarder.

Des Moines, Iowa, September 1, 1975: At 4:00 in the afternoon on this date, 17 cars of Chicago, Rock Island and Pacific train derailed at the frog of a facing point switch on the mainline in Des Moines, Iowa. Eleven of the derailed cars contained liquefied petroleum gas, two of them were punctured and one of the punctured cars rocketed. There were 3 injuries and property damage under just \$1 million.

The National Transportation Safety Board could not determine the cause of the initial derailment.

#### APPENDIX E

##### THE OFFICE OF TECHNOLOGY ASSESSMENT STUDY: "AN EVALUATION OF RAILROAD SAFETY"

COMMENTS OF DR. WILLIAM J. HARRIS, JR., VICE PRESIDENT, RESEARCH AND TEST ASSOCIATION OF AMERICAN RAILROADS

We are encouraged that the Office of Technology Assessment here in the Congress has just produced a report that sheds much-needed light on the true nature



of railroad safety problems. In summary, their study shows: that casualty rates have not increased (though the costs of casualties has); that track-caused train accidents have accounted for the only increase in accident rates generally; that, while the increase in track-caused accidents has been significant, the number of casualties associated with those accidents is small; that the present FRA safety program is seemingly unfocused on the important causes of employee casualties; and that the present FRA approach of promulgating regulatory standards and then conducting inspections does not appear to have affected the accident problem.

Their study also concludes: that more emphasis needs to be placed on research into the causes of the significant casualty problems (and those are not problems associated with the bad track conditions plaguing the companies that have already fallen into serious financial trouble); and that more cooperative research is the route to sizable reductions in casualty losses.

We agree with these conclusions.

The OTA study, however, is most important for what it leaves unsaid, for the further inferences one must draw from its conclusions. These further inferences were not called for in the terms of reference under which the study was made, but they follow logically from the thorough job OTA has done in setting down the facts of the railroad safety problem in clear and abundant detail.

One can only infer from the OTA report that the time has come to use the modern tools of analysis, of research, and of institutional innovation now available to us. The time has come to couple our resources to the important safety problems, not just the dramatic ones. The time has come to set aside our posturing on the safety problem and to devise cooperative government/industry program and cooperative labor/management programs that generate results and not rhetoric.

If track-caused derailments produce few casualties and getting on and off trains produces a lot of casualties, then we should not be talking about putting a lot more of our limited resources into hiring government inspectors to walk up and down tracks, but we should be organizing our efforts to reduce the need for employees to get on and off cars and to reduce the likelihood that when they do they will be hurt or killed. If there is no evidence that employees are unable to understand existing rule books, then we should stop trying to standardize rule books. If coupling and uncoupling cars produces a lot of employee casualties, then we should be looking for safer ways to perform that task or ways to eliminate it instead of arguing over how many times a year the physical condition of couplers should be inspected.

That's the sort of thing the OTA report says to us. The time has come for new, more sensible directions, not for more of what we already know does little good in any real safety terms.

## APPENDIX F

### RAILROAD RESEARCH AND TEST ACTIVITIES DIRECTED TOWARD IMPROVED RAILROAD SAFETY

Safety has been a subject of prime importance to the railroad industry since its inception. The safe conduct of transportation is an absolutely essential ingredient of any viable railroad enterprise and is recognized as such by its management and employees. The first instruction in many carriers' "Book of Rules" states that safety is of the first importance in the discharge of duty. Any employee who has attempted to pass an examination on operating rules cannot help but be impressed with the many different ways in which safety considerations affect and are brought to bear on railroad operations.

It is not, therefore, surprising that almost everything the AAR's Research and Test Department does relates directly to railroad safety. In fact, the Department's charter clearly states "The function of the Research and Test Department of the AAR is to conduct studies and analyses that will provide a basis for safer and more effective railroad service." This work involves intensive analysis of accident statistics and reports and the development of better, safer components, such as wheels, rails and couplers. In addition, the interaction of components within subsystems and the operations of various systems themselves are equally important aspects of this research.

All railroads are required to report certain classes of accidents and employee casualties to the Federal Railroad Administration. The Research and Test De-



partment of AAR maintains continuing surveillance of these data and conducts analyses of them to identify and rank the comparative importance of the causes of accidents, injuries and fatalities.

Figure 1 indicates the gross trends in the number of accidents. It does not reflect variations in traffic nor does it account for inflation. In the period covered by these data, railroads were required to report all accidents involving damage to track and equipment of \$750 or more. As inflation progressed, \$750 worth of damage was incurred in smaller and smaller accidents. Therefore, an inflation factor was introduced in 1975.

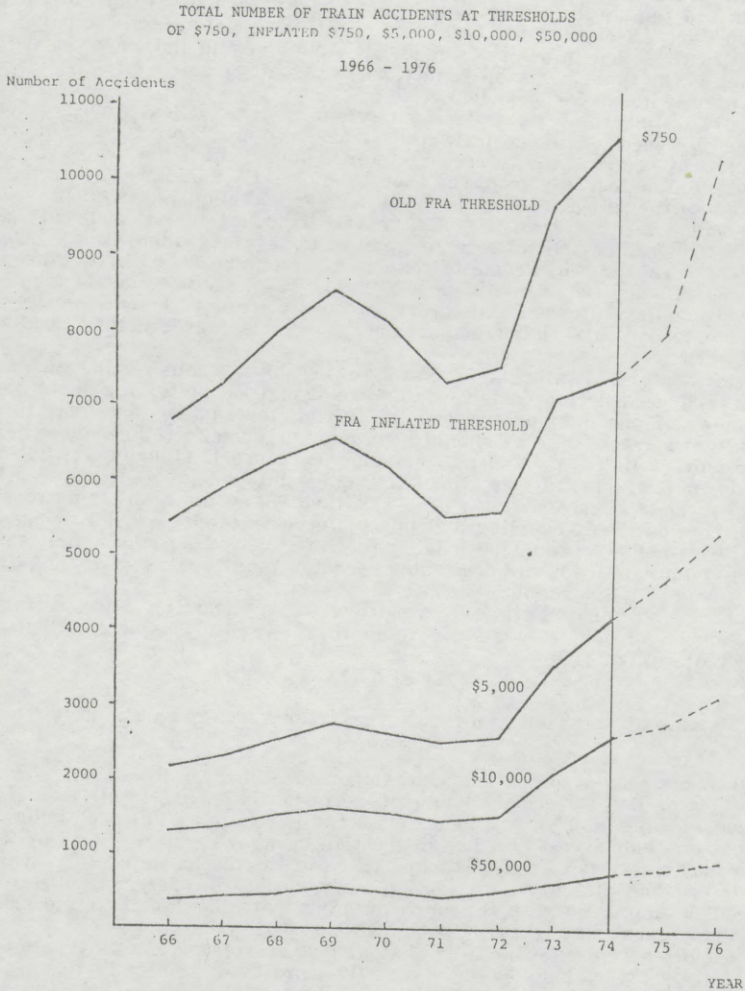


FIGURE 1



Figure 2 adjusts the accident data to the same traffic level. It indicates a lesser upward trend in the number of accidents.

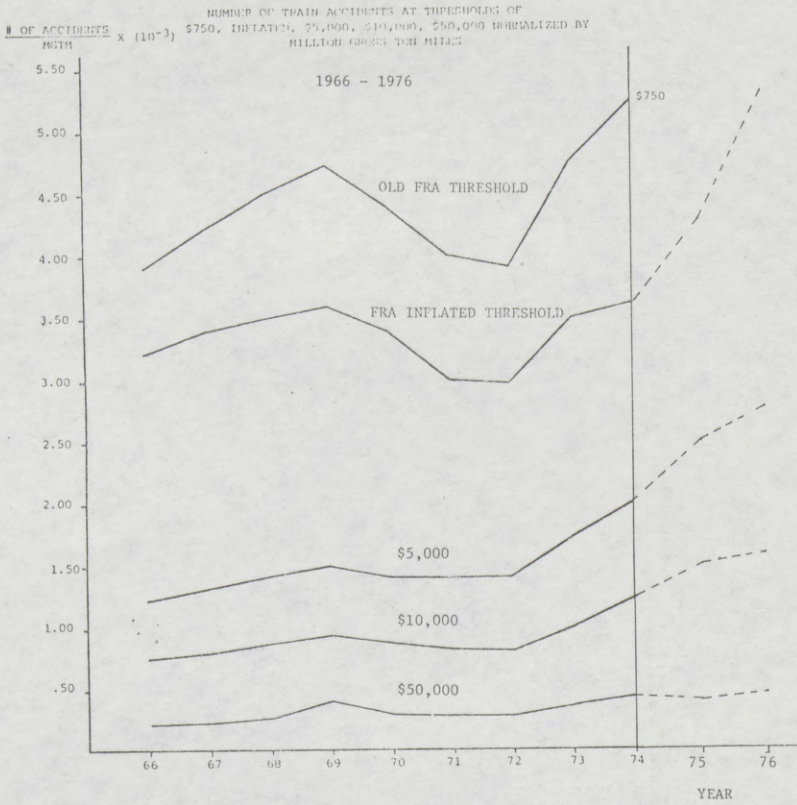


FIGURE 2



Figure 3 shows that the number of major accidents has been declining. These curves, stated in terms of 1976 dollars, show the number of accidents in which damage to track and equipment exceeded thresholds of \$100,000, \$250,000 and \$500,000.

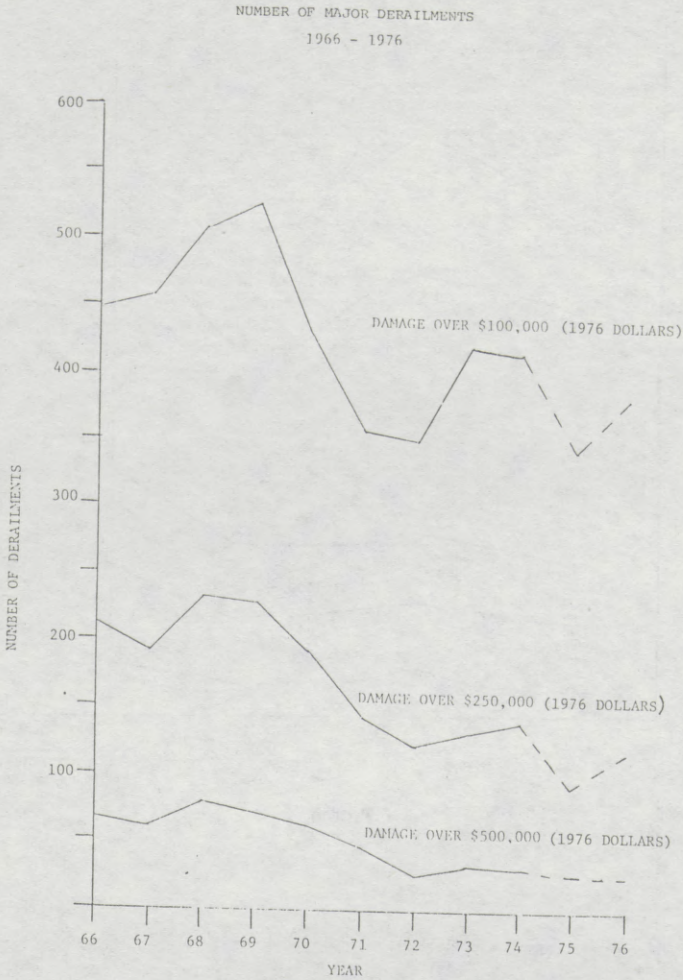


FIGURE 3



As shown in Figure 4 the primary causes of derailments are divided among those related to track, equipment, human factors, and combinations of causes. Track now accounts for about forty percent of the derailments with twenty percent each falling into the other three categories.

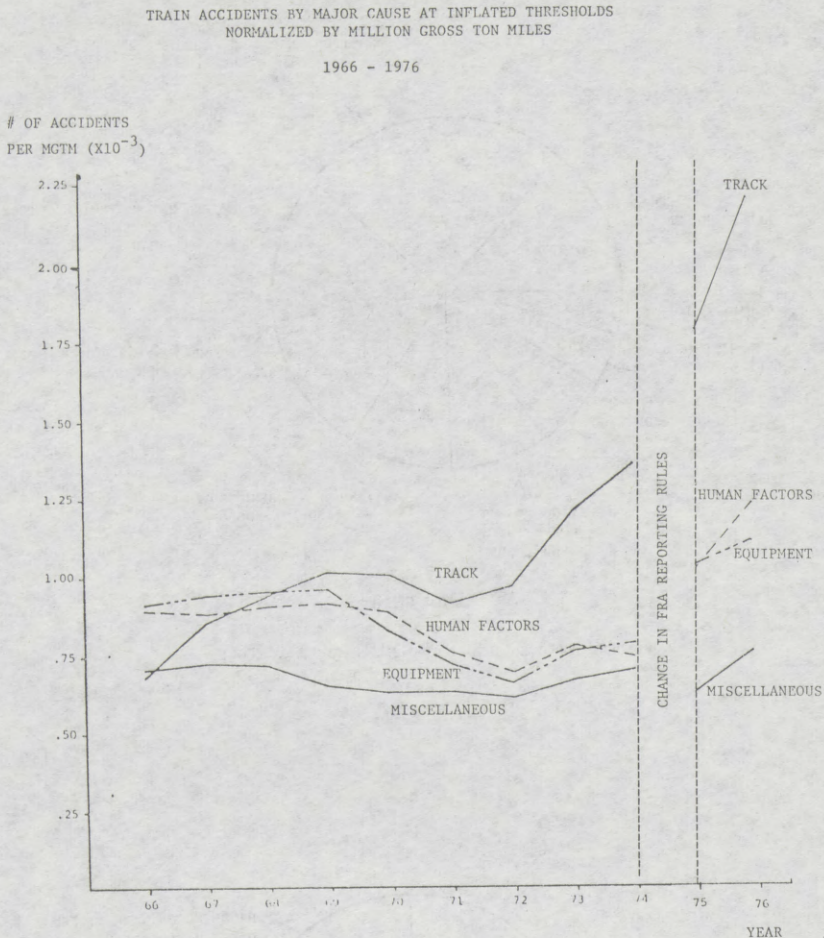


FIGURE 4

#### *Employee casualties*

Employee safety is of major concern to the railroad industry. Until 1975 under Federal requirements reports were filed in each case of fatality or injury involving more than one day's absence from work. Starting in 1975, loss of time of a day or a visit to a doctor were established as the minimum threshold for reporting. Thus, many more reports are now being received but statistics related to them are not comparable to accident statistics prior to 1975. As shown in Figures 5 and 6, only a small fraction of employees are injured in train accidents. Therefore, research on employee safety must consider factors other than the causes of train accidents if they are to have a significant impact on employee injuries.



## PERCENT EMPLOYEE INJURIES BY MAJOR CAUSE CATEGORY

1966 - 1974 COMBINED

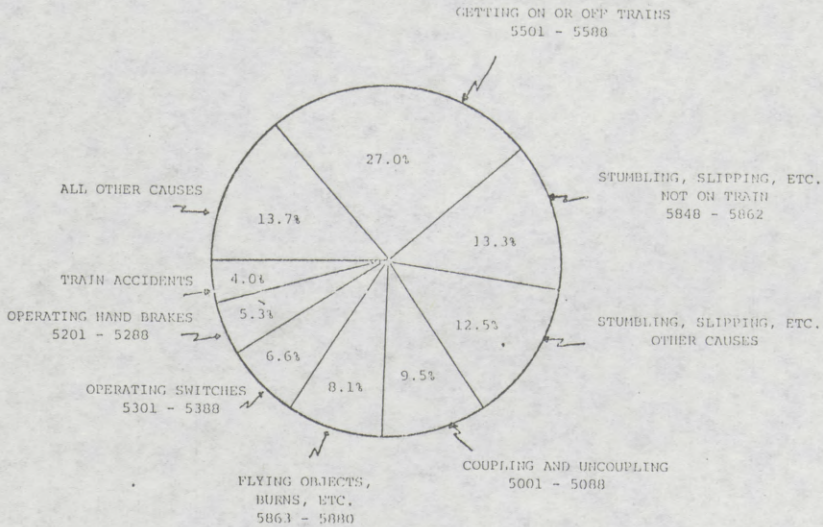


FIGURE 5

## PERCENT EMPLOYEE INJURIES BY MAJOR CAUSE CATEGORY

1976

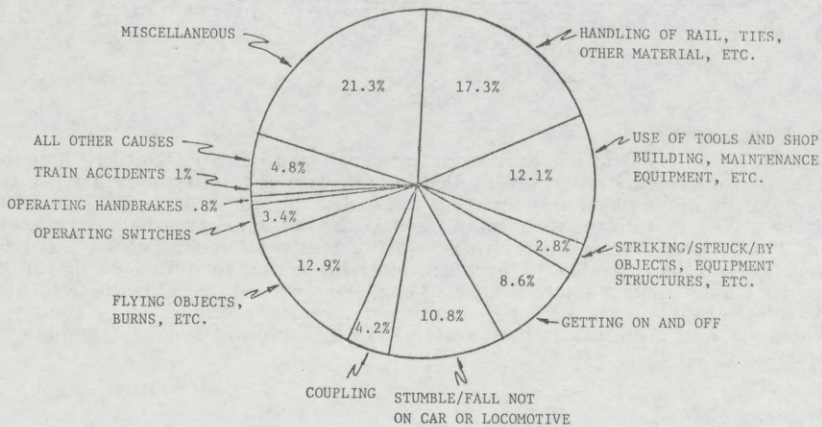


FIGURE 6



While we are by no means satisfied with this performance, railroad employee fatalities per thousand employees are lower than for the rest of the transportation sector. The Bureau of Labor statistics fatality records of several industry groups are shown in Table 1. The U.S. railroads are shown to have a lower fatality rate than the general transportation sector, construction, or mining.

TABLE 1.—EMPLOYEE FATALITIES: MAJOR U.S. INDUSTRIES

| Industry                 | Total 1975<br>fatalities | 1975 fatalities<br>per 10,000<br>employees |
|--------------------------|--------------------------|--------------------------------------------|
| Railroads.....           | 110                      | 2.05                                       |
| Construction.....        | 1,000                    | 2.89                                       |
| Mining.....              | 500                      | 6.71                                       |
| Agriculture.....         | 200                      | 1.28                                       |
| Transportation, all..... | 1,000                    | 2.22                                       |
| Manufacturing.....       | 1,100                    | .60                                        |

Source: Bureau of Labor Statistics.

Railroad employee fatalities per man hours of employment have remained about constant since 1966 as shown in Figure 7. As seen in Figure 8, train accidents account for less than twenty percent of those fatalities. Train accidents, however, include collisions and grade crossing accidents. Fatalities directly associated with all train derailments, including those caused by track conditions (less than half) amount to less than five percent of total employee fatalities. Thus, the risk to life of railroad employees because of train accidents is fairly low. The risk to life of railroad employees because of train derailments including those caused by our much publicized track conditions is even lower. And as in the cause for employee injuries, research in fields other than the causes of train accidents and derailments is essential if we are to significantly improve employee safety and if we are to address the real priority causes of employee casualties.



EMPLOYEE FATALITIES NORMALIZED BY  
MILLION MAN HOURS OF EMPLOYMENT  
1966 - 1976

FATALITIES PER MILLION  
MAN HOURS OF EMPLOYMENT

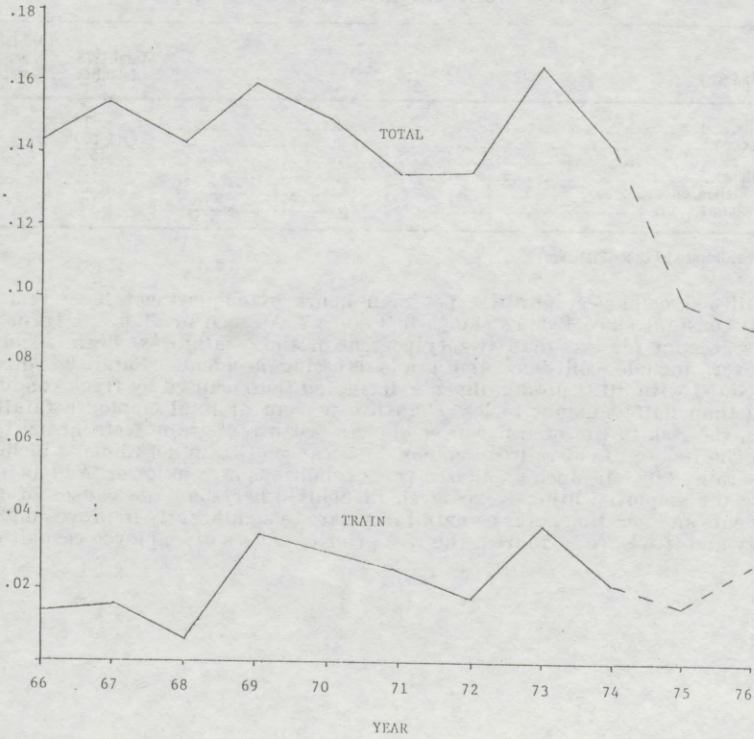


FIGURE 7



## PERCENT EMPLOYEE FATALITIES BY MAJOR CAUSE CATEGORY

1966 - 1974 COMBINED

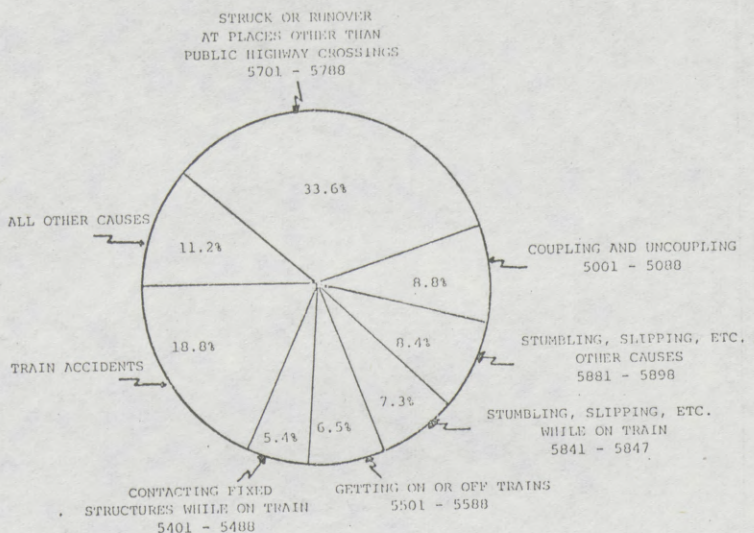


FIGURE 8

*Human factors research*

Because of this we have recently instituted a program of human factors research. Under this program, we are carefully collecting and studying detailed data relating to how and where employee casualties occur. This work includes analysis of job skill requirements together with a study of the interaction between employees and the tools and equipment they use and operate. We hope to identify potential incompatibilities (such things as dexterity, strength, perception) and work place environment, including design of equipment, information displays, lighting, weather, and noise levels. Where these are found, remedies in the form of revised training programs, new equipment configurations and changes to work environments will be recommended.

*Track safety*

As indicated earlier here and many times over recently in the media, track defects have been identified as the cause of up to forty percent of our derailments. While such derailments contribute in only a small way to employee injuries and fatalities, they do pose a serious problem to efficient operations. They deserve serious attention in the industry's research program.

Figure 9 is an example of using derailment statistics to identify the components or aspects of track which are causing the most difficulty. The vertical axis provides a measure of importance based on the frequency of any cause and the amount of damage suffered as a result. Track components which occasionally fail and lead to derailments include rails, joints, fasteners, forgs and switch points. Other causes of derailments attributed to track involve distortions to its geometry, that is in the dimensional relationship of its various components.

Research in all of these aspects of track is proceeding in a variety of programs at the AAR's Technical Center in Chicago, at the DOT's Transportation Test Center in Pueblo, at the Transportation Systems Center in Cambridge, Massachusetts, on university campuses, and on individual railroads.



SEVERITY RANKINGS OF  
TRACK CAUSE-CODES (TOP 5)  
1966 - 1974  
(FREQUENCY X DOLLAR MEDIAN)

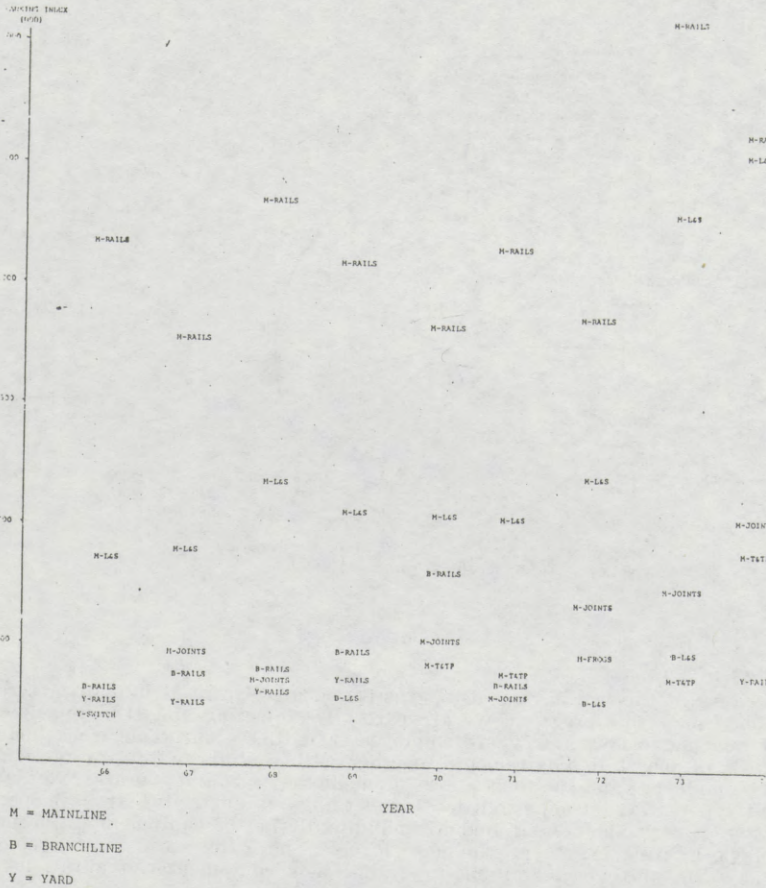


FIGURE 9

Much of this work, as is the case with other AAR research, is carried on in cooperative programs. Arrangements are made for various interested institutions such as the supply industry, or the Federal government, or individual railroads or combinations of these to join with the AAR in funding and carrying forward the work. This makes it possible to draw on a variety of highly talented people for the length of time necessary to carry out the appropriate research. It ensures that the program can be started by people already knowledgeable about the problem and that the results will have credibility within the railroad and supply industries and the Federal government and that the results will be translated into early acceptance.

By way of example, the FAST Program (Facility for Accelerated Service Testing) at Pueblo is operated under sponsorship for the Federal Railroad Administration, many individual railroads, railway supply firms, and ourselves. In this program, tests and evaluations are being made of rails of varying metallurgy, prestressed concrete ties of six designs, reconstituted and laminated timber ties, different rail to tie fastening systems, five kinds of glued rail joints and a variety of track ballast compositions and cross sections under grossly accelerated traffic conditions. In all of these tests the initiation and development of failure mechanisms is being studied.



With a combination of FRA and AAR support, work is proceeding within the Civil Engineering Department at the University of Illinois on characterization and evaluation of track ballast and roadbed subgrade materials.

The AAR recently completed construction in Chicago of the first laboratory facility in North America capable of examining full-scale sections of track. At the track laboratory, the response to loads of track sections built of differing component designs and/or configurations can be carefully measured and evaluated.

Working with the American Iron and Steel Institute, and four railroad companies, AAR's metallurgists have been studying the causes, development and remedies of rail failures. This program, which begun in 1974, is now largely completed. In the study of transverse rail defects the results of the investigations showed that these are largely the combined result of fatigue and non-metallic inclusions of very small size (.001 in.). A companion research program at Carnegie-Melon University is pointing to the conclusion that resistance to such rail failure may be improved in heat treated and several types of alloy steel.

#### *Equipment*

With regard to equipment, that is locomotives and cars, there are certain components which fail infrequently but none the less which can lead to derailments when they fail. These include wheels, journal bearings, freight car trucks and couplers. Work is in progress in all of these areas.

#### *Freight car bearings*

The procedures employed by the Association of American Railroads to approve bearings provide that all roller bearing designs be tested in our laboratory before they are certified. In addition, samples of all of the roller bearing seals that are used in bearing repair are checked by the AAR's Research and Test Department to determine their conformity to dimensional tolerances and satisfactory operating characteristics.

#### *Wheels*

The AAR has pursued research into the causes and prevention of wheel failures in two general areas. The first involves the study of wheel stresses utilizing computer assisted analysis. High stresses can lead to cracking of wheels and potentially, to broken wheels. Based on studies of this type, certain new wheel designs have been adopted as standard and the manufacture of older designs has ceased. Service performance records of the new designs show no wheel failures to date. Further stress analyses of wheels used on 100-ton freight cars indicated that decreasing the wheel rim thickness increased the state of stress in locations critical to the formation of cracks. Based on these results, the AAR has recommended that wheels which have thicker rims be applied to 100-ton cars. Currently, computer-aided stress analysis techniques are being used by the AAR to approve new wheel designs.

The second area of wheel research applies metallurgical techniques to the evaluation of the cause of wheel failures. This work includes both testing and research. The test work includes failures analyses and the certification of new wheel and axle manufacturers. Research studies of the effects of wheel steel properties as they relate to wheel failures and investigation of the behavior of wheel steels at elevated temperatures such as occur during severe braking are being pursued.

#### *Freight car trucks*

Research and development activities conducted by the AAR and individual suppliers have resulted in reduction of service failures of freight car trucks. Improved manufacturing processes which include electric furnace produced steels, improved foundry materials, modern quality control procedures and special wear resistant material in critical areas have been adopted. Computer analysis techniques which simulate suspension behavior have been developed to aid in the design of freight car trucks. Extensive service testing has also been conducted to aid in the implementation of the computer techniques and to provide data necessary for the conduct of laboratory tests which simulate the service loads and environment of truck components over extended periods of time.

#### *Couplers*

Significant research work by the Association of American Railroads is addressing prevention of failures of freight car couplers. Comprehensive analyses



based on laboratory examination of many couplers which failed in service have indicated that the majority of such failures could be alleviated or eliminated with the introduction of tougher (more ductile, higher strength, less brittle) steels in the manufacture of couplers. A new specification has been prepared to standardize the use of these tougher steels.

#### *Dynamics*

Dynamic interactions of railroad vehicles and track, not unlike such phenomena as automobile wheel shimmy, have been responsible for some derailments in which no equipment or track failure took place. The necessity for additional research into this complex field was identified in 1971. Accordingly, a cooperative program was initiated by the AAR to involve personnel and funding from several supply firms, numerous railroads, the Federal government and the AAR. Extensive research into the causes of such adverse interactions have been made possible through the use of sophisticated computer analysis techniques and comprehensive in-service testing. Current cooperative research efforts are yielding a variety of recommended methods for the alleviation of such derailments. Such methods range from operating procedures for certain types of trains to the incorporation of specific control devices or systems on which cars exhibit adverse dynamic behavior.

Under the auspices of this activity, the most ambitious series of field tests yet attempted were performed in 1977 to learn more about the interactive effects between track geometry and diesel locomotives of several designs. The huge quantities of data produced are even now providing new insights into tracking phenomena of locomotives and on track maintenance practices.

#### *Hazardous materials*

The problem of hazardous materials has been given special attention beginning in 1970 when it became evident that improvements in the design of tank cars were necessary to reduce violent ruptures. This work, jointly funded by the Railway Progress Institute, the Federal Railroad Administration and the AAR, and steered by committees representing those parties, identified the sequence of events that occurs in the cases of violent ruptures. These generally involve penetration of the tank car head by the coupler of an adjacent car during a derailment, spillage of flammable contents and an ensuing fire, the engulfing of an undamaged car by the fire and subsequent rupture in a complex process ultimately leading to the overheating of the upper part of the tank car shell. Corrective measures which were identified in the course of this research include protection of the tank car head against penetration and insulating the shell against overheating. As a result of this work, a petition was filed March 15, 1976, by the Railway Progress Institute Committee on Tank Cars requesting a rulemaking to cover new cars and the retrofitting of existing cars. That rulemaking (HM-144) is now in force. New cars are being manufactured to the desired specifications and the retrofit programs have begun.

Additional studies on ways to improve the design of tank cars and to consider ways of handling cars so as to reduce their exposure to potential derailments are on-going.

The railroad industry has been particularly concerned about the potential for a catastrophic accident resulting from the transport of spent nuclear fuel and/or high-level nuclear wastes. Of primary concern at this time is the rail shipment of spent fuel rods from nuclear reactors. These spent fuel rods are highly radioactive containing plutonium and substantial amounts of usable uranium plus noble gases. Special nuclear shipping casks, some weighing over 92 tons and with assessed valuations exceeding \$1 million, are required to transport the spent fuel. Each type of cask must meet the certification requirements as established by the Nuclear Regulatory Commission (NRC).

It is believed by the railroad industry that train accidents produce forces and thermal exposures far in excess of NRC's nuclear cask certification requirements. Acting on the conclusions reached by their Nuclear Study Task Force, the AAR Board of Directors on March 29, 1974, recommended to all AAR member railroads that spent nuclear fuel be carried only in special trains in which no flammable products were also carried and which could be given extraordinary handling with respect to surveillance, speed, and exposure to hazards presented by other traffic. The intent of this recommendation was to reduce the potential



accident environment to levels not exceeding those established by the NRC nuclear certification requirements.

When the railroads attempted to institute the necessary tariffs, the nuclear industry requested the ICC to define the status and obligations of the railroads with respect to the transportation of radioactive waste material. Despite the evidence presented by the railroad industry, the ICC apparently agreed with the nuclear industry's premise that the shipping casks can withstand any known railroad accident environment. The railroad industry continues to disagree. If the ICC initial decisions stand, the railroad industry will not be permitted to publish tariffs which would permit special handling of radioactive materials including spent fuel and high-level wastes.

Obviously, additional resources from Federal funding in cooperative research or additional earnings by the industry through appropriate action to make the industry more fiscally viable would make it possible to pursue these programs of research and development somewhat more aggressively and to ensure their earlier translation into use. Without such assistance, however, the programs are going well and significant progress is being made in understanding ways to improve railroad safety and in developing programs of action to cope with it. Very often the problems are exceedingly difficult and complex from a technical point of view and require extraordinary measures and extensive periods of time before answers are in fact developed. We feel compelled to repeat, however, and as the OTA report on railroad safety implies, that applied research pursued unilaterally by the Federal government without the involvement of the railroad community has not proven effective nor efficient in the past. More spending of additional Federal dollars on safety research will not in our opinion solve the difficult problems we face.

#### APPENDIX G

##### COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS ON S. 2897, THE RAILROAD SAFETY ACT AMENDMENTS OF 1978

Section 2 of the bill would amend the first sentence of Section 207 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 436) so as to permit state enforcement of violations of federal standards cited by that state when the Secretary fails to act within 90 days of the receipt of notice of such violation from the state. The present law provides that the 90-day period runs from the day on which the violation occurred, and the state need not even advise the Secretary that there has been a violation before it would be entitled to go to court to sue for injunctive relief against the violation and for the collection of a civil penalty from the railroad. This amendment would effectuate what the true intent of Congress was in the first place, *i.e.*, to give the Secretary 90 days to deal with a safety violation before a certified state could seek judicial relief on its own. We support this amendment.

Section 3 amends Section 208 of the Federal Railroad Safety Act of 1970 (45 USC 437) to make clear that the Department of Transportation still has accident investigation authority in its own right under that Act and the Accident Reports Act. This clarification is desirable because of changes in the law made by the Independent Safety Board Act of 1974 (45 USC 1901 *et seq.*). The latter Act established the NTSB as an independent agency, separate and apart from DOT. We take no exception to this change.

Section 3 also amends Section 208 to provide that persons engaged by DOT to inspect equipment and facilities, etc., during the course of their inspection will be considered employees of the government for purposes of the Federal Tort Claims Act. This amendment will save arguments between FRA and the carriers over insurance to cover the activities of these agents. This has been a problem particularly in connection with the operation of FRA's track inspection test cars. The AAR supports this amendment.

Section 4 authorizes appropriations for DOT's rail safety program, and would authorize funds appropriated for research and development, automated track inspection, and the state safety grant program to remain available until expended. The railroads take no position on this part of the bill.

Section 5 amends the Hours of Service Act (45 USC 61) so as to make it apply to common carriers engaged in interstate or foreign commerce by railroad.



The Act may not cover the hours of service of employees during purely intrastate movements, even though the carrier itself otherwise engages in interstate and foreign transportation. DOT's analysis of a draft of another bill incorporating this provision says that the amendment will make the Act apply to common carriers engaged in interstate or foreign commerce by railroad without regard to whether the employee's period of service in question actually takes place while he is engaged in interstate or foreign transportation. Although the railroad industry does not think there is any necessity for extension of the coverage of the Hours of Service Act, we take no position on this particular technical amendment.

Section 6 would amend the civil penalties provisions of the Safety Appliance Act and the Signal Inspection Act to provide for the initial assessment of civil penalties by the Secretary. Now, under these Acts, after the Secretary determines that a violation has occurred and if a settlement is not reached, then a suit must be brought in a federal district court for recovery of a penalty within the \$250-\$2,500 range permitted by statute. DOT is likely to argue in support of the amendment that the present procedure creates an incentive for carriers to refuse administrative settlement of claims at amounts higher than \$250, and that if it is permitted to fix the amount of the penalty by assessment, then, should it become necessary to go to court to collect the money, the district court will give weight to the amount assessed by the Secretary when entering judgment. If that is true, then the bill simply represents one more short-cutting of the rights of defendants to have full judicial consideration, based on a trial on the record, of claims for penalties made against them by the government. Any resistance by carriers to administrative settlement of claims under the present law stems from the unreasonable level of the penalties which are being assessed by FRA. The schedule of penalties published by FRA under the Federal Railroad Safety Act provides for no penalty of less than \$500, no matter how technical and minor the violation, even though the statutory minimum is \$250. The industry opposes this change in the law, because it is part of an effort by FRA to imposed higher and higher penalties, and to minimize the ability of the railroads to defend themselves against the penalties. The report of the Office of Technology Assessment raises questions about the effectiveness of the penalty structure and the FRA testified during hearings on the 1976 Safety Authorization Act that raising the penalties would not in itself promote greater safety.

## APPENDIX H

### COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS ON S. 2898, THE FEDERAL RAILROAD SAFETY AUTHORIZATION ACT OF 1978

Before commenting on its specific provisions, some preliminary observations may be made about the bill as a whole. While it is denominated a bill to authorize the appropriation of funds in carrying out Federal railroad safety programs, most of its provisions go far beyond the matter of appropriations, and are instead proposals for broad-reaching and radical change in the substantive law governing railroad safety in the United States. On that subject, major findings of the Railroad Safety Assessment of the Office of Technology Assessment should be called to mind. Foremost is the finding that existing Federal safety laws, taken as a whole, provide sufficient statutory authority to deal with the existing hazards of railroad operations. In other words, there is no need for more legislation in the field of railroad safety. A second pertinent conclusion of the OTA is that the inspection programs resulting from the 1970 Safety Act do not appear to have affected the accident rate. Such programs would be enlarged and expanded under many of the provisions of this bill, despite the lesson of the OTA that there is no reason to believe that safety will be enhanced by increased inspection programs in the conventional pattern.

Comments on specific provisions are as follows:

(1) Section 2(a) of the bill authorizes a total of up to \$37,725,000 to be appropriated to carry out the provisions of the Federal Railroad Safety Act of 1970. Section 2(b) authorizes specific amounts appropriated under 2(a) to be available for expenditure for the Office of Safety, State safety programs, the Federal Railroad Administration, and safety research and development. In addition, specific numbers and types of Office of Safety personnel are authorized.

Section 2(b) authorizes funding sufficient to provide for 600 safety inspectors and 45 signal and train control inspectors, an increase of 100 inspectors over



the present authorized force. The railroads believe that an increase in inspectors will not lead to increased railroad safety unless inspectors are used more effectively and efficiently.

One of the major findings in the summary and findings of the Railroad Safety Assessment of the Office of Technology Assessment is that "the inspection programs resulting from the 1970 Safety Act do not appear to have affected the accident rate." The OTA report expanded on this finding as follows:

THE ACCIDENT RATE DOES NOT APPEAR TO HAVE BEEN AFFECTED BY THE INCREASED INSPECTION ACTIVITY

In assigning a significant portion of its safety resources to its inspection programs, the FRA appears to be operating on the basis of the common assumption that Federal inspection programs can help to reduce the accident rate. However, the relationship of the inspection programs to accident prevention/reduction is difficult to define given the fact that adequate measures of effectiveness do not appear to exist. While it would not be expected that accident reduction would be the sole measure of the effectiveness of inspection programs, lacking other measures, it provides one relevant benchmark for assessing the effectiveness of the inspection efforts. Increased and/or continuing accident rates that coexist with increased inspection personnel, may indicate that Federal inspection does not provide a significant incentive to compliance with railroad safety standards.

THE ALLOCATION OF INSPECTION FUNDS/PERSONNEL DOES NOT APPEAR TO COINCIDE WITH THE ACCIDENT PATTERN

From the information available to this study, it is not apparent what basis the FRA has used for assigning levels of effort in the five inspection program areas that have been established. Although track accidents account for the largest number of train accidents and the largest amount of property damage, the resources allocated to this inspection effort at the Federal level are only half those allocated to the motive power and equipment inspection program. On the other hand, while the largest number of fatalities to employees appears to occur as a result of human factors, the inspection effort for operating practices is allocated approximately one-tenth the funding and half the personnel allocated the motive power and equipment inspection program. Human factors are not sufficiently understood, so that increased inspection of those operating practices may not necessarily be an improvement. There appear to be some shifts in resource allocation, with motive power and equipment decreasing and the other programs increasing; nonetheless, the basis for the shifts, their magnitude, and their timing is not clearly related to the accident pattern.

The OTA report supports the railroads' own assessment of the performance of FRA inspectors. The railroads are finding, with almost predictable regularity, that the FRA inspectors are focusing a considerable portion of their time analyzing carrier records and reports and citing the carriers for highly technical alleged violations which have only a minimal, if any, relationship to increased safety. As an extreme example, one railroad reported being fined \$10,000 for failing to report that an employee sustained a sprained shoulder. The injured employee was not instructed to restrict his activities or stay off the job. Unbeknownst to the carrier, the man received a prescription from his private doctor. The receipt of the prescription made the accident reportable. The fine demanded by the FRA was in excess of 50 percent of the man's annual salary.

Enforcement of the Hours of Service Act is another area where the FRA has concentrated on highly technical violations in complete disregard of the safety considerations. One carrier was recently fined \$500 when an employee worked eight hours, was off duty for ten hours, then attended a 1½ hour instructional class. The FRA concluded that the eight hours on duty, coupled with the 1½ hours at class created a violation, since the employee was on duty more than nine hours—even though the employee was off duty ten hours before the class and 12½ hours after the class! Commenting on a similar situation in 1971, the U.S. District Court for the Northern District of Pennsylvania (328 F. Supp 1102) stated "Admittedly, this is a highly technical violation. There is, however, nothing that the Court can do to correct any injustice that might devolve to the railroad; the legislative branch, not the judicial branch, must provide the remedy. It is certainly the type of proceeding that requires the imposition of the lowest penalty that is permitted under the Act."



In a recent opinion of the United States Court of Appeals for the Eighth Circuit, in which the court rejected the FRA's interpretation of the term "designated terminal," the court stated that the FRA's enforcement approach "does not enhance safety but serves only to burden efficient railroading."

The examples cited above are not unique. Similar examples are legion. The net effect of the FRA approach to inspection and enforcement, however, is to decrease safety by diverting limited manpower and funds from projects with genuine safety potential to the payment of punitive fines or to the enforcement of regulations unrelated to safety. The railroads believe that funds for more inspectors should not be authorized unless FRA will redirect its inspection and enforcement efforts into activities which have a positive effect on railroad safety.

(2) Section 3 of S. 2898 limits the amounts authorized to be appropriated for conducting railroad research and development programs. At least 50 percent of these funds are required to be available for expenditure for safety research, improved track inspection and data acquisition technology, improved rail freight service, and improved passenger systems. Finally, funds allotted for any railroad research and development program may not exceed the funds allotted for railroad safety research.

The railroads oppose the limitations on research and development funding contained in section 3 of S. 2898. Research and development are not activities which should have limitations placed on their funding by considerations divorced from the research and development itself. Rather funds should be spent on programs which, at any particular time, show the greatest prospect of bearing fruitful results. The agency through which funding is provided (DOT) must have the flexibility to channel funds into the most productive programs.

Moreover, safety research is not a discrete subcategory of overall research and development. The results in all areas of railroad research and development redound to the benefit of railroad safety. Therefore, the funding limitations in section 3 of the bill require DOT to make distinctions in the area of railroad research and development which do not, in reality, exist.

(3) Section 4, defining the term "designated terminal", and Section 5, reducing the maximum continuous hours of service, are discussed in a separate statement by Mr. Lawrence Cena.

(4) Section 6(a), limiting the length of freight trains, is discussed in a separate statement by Mr. James E. Martin.

(5) Section 6(b) amends section 209(a) of the Federal Railroad Safety Act of 1970 (45 U.S.C. 441) to read:

(a) It shall be unlawful for any railroad to disobey, disregard, or fail to adhere to any rule, regulation, order, or standard prescribed by the Secretary or Congress under this title.

Congress has no distinct administrative rulemaking authority under the Safety Act. Moreover, disobedience of any statutory rule established by Congress is, by definition, unlawful. Accordingly, this section of S. 2898 adds nothing to the existing statutory scheme. The railroad industry believes that meaningless, purposeless language should not appear in the Federal Railroad Safety Act and, thus, oppose enactment of Section 6(b).

(6) Section 7 amends section 202 of the Federal Railroad Safety Act to prohibit discharge, harassment, or discrimination against an employee (1) for "whistle-blowing" activities, (2) for refusing to operate defective equipment which he reasonably believes to be in violation of the Act or regulations thereunder, or (3) for refusing to work in a place where he reasonably believes there is a present danger to his safety and health. If either of the latter two conditions exist, the employee may, either individually or in concert with others, request reassignment without loss of pay. If he is not reassigned, he has the right, individually or in concert with others, to stop working, also without loss of pay. Finally, the Federal district courts are given original jurisdiction to enforce these provisions, the statute of limitations for enforcement is effectively eliminated, and the Secretary is given authority to assess a civil penalty for violation of up to \$10,000.

The railroad industry agrees that its employees should not be harassed or penalized for "whistle-blowing" activities, those described in the proposed subsections 202(i)(1)(A), (B) and (C). However, the industry feels that any remedies given to employees should be incorporated within the existing statutory framework. Accordingly, any grievance for harassment for "whistle-blowing"



should be processed through the Adjustment Board procedures under the Railway Labor Act.

Under the provisions of Section (i) (1) (D) and (i) (1) (E) of the proposed amendment, the Federal Railroad Safety Act would provide that a railroad could not discharge a railroad employee who refuses to operate "defective equipment which he reasonably believes" to be in violation of the Act or regulations promulgated thereunder or who has refused to work in a place where "he reasonably believes there is present an imminent danger to his safety and health." Those two provisions would make each individual railroad employee the final judge of the fitness of the equipment which he is called upon to operate or the place in which he is called upon to work. The ultimate authority of railroad management to control and direct its own operations and to make decisions with respect to its plant and equipment would be fatally undermined. The only limitation on the unfettered judgment of each employee in this regard would be whether or not he entertains a "reasonable" belief that the equipment and work place are unsafe.

Under the provisions of Section (i) (2) any employee who determines that his equipment or work place is unsafe or dangerous is given the right, either individually or in concert with other employees, to request reassignment without loss in pay, presumably to other work, and if he is not reassigned, he shall have the right to stop working, "either individually or in concert with others." All employees exercising their rights shall then be entitled to be paid "for all time lost," which presumably means for all of the time during which they refuse to work. This provision would give each employee who is dissatisfied with safety conditions the right to back up his unsupported judgment with the block-buster weapon of a strike—a strike financed by the railroads as all other employees in sympathy with him would receive compensation from the railroad for refusing to work. Such a right to strike would subvert the long established principles and provisions of the Railway Labor Act, which has been on the books since 1926, and which carefully delineates the circumstances in which a strike may occur, and would confer a license for instant wildcat strikes on every worker on the American railroads. The mere statement of what the bill would do is a sufficient refutation of it.

To make the proposal more injurious and intolerable, the proposal would confer jurisdiction over all disputes arising under its provisions upon the federal district courts, thereby delivering a body blow to the long-standing system of referring "minor" disputes or grievances to the Adjustment Boards established pursuant to Section 3 of the Railway Labor Act. Disputes relating to discharge and discipline are traditionally "minor" disputes that would now be handled by the Adjustment Board under existing law.

As a final piece of injury, the proposal would impose penalties of not to exceed \$10,000 for any violation of these provisions. In short, every railroad worker who is dissatisfied with his safety conditions will have it within his power to call down a penalty of \$10,000 on his employer for each condition that he finds to be unsafe or dangerous. The only way a railroad would be able to avoid that penalty would be to yield to the employee's demand for reassignment to other work, a difficult task at best, but one made more complex in view of the multitude of unions in the industry and the limitations on reassigning employees contained in collective bargaining agreements.

(7) Section 8 would establish within FRA an Office of Occupational Safety and Health to administer the occupational safety and health functions, powers, and duties of FRA. The railroad industry supports the establishment of this Office within FRA. The railroads believe, however, that they should not be subject to the jurisdiction of two different agencies on matters of occupational safety and health. Therefore, the industry urges the Congress to make clear that the jurisdiction of the FRA Office is exclusive.

## APPENDIX I

### MCA/AAR TASK FORCE ON RAIL TRANSPORTATION OF HAZARDOUS MATERIALS

The Task Force had its origin at a meeting at the headquarters of E. I. du Pont de Nemours & Company, at Wilmington, Delaware, on February 28, 1978. The meeting had been called by Mr. Shapiro of du Pont because of concern within the chemical industry about the transportation of hazardous materials. On March 7, 1978, there was an organizational meeting held at the Associa-



tion of American Railroads: A steering committee was formed, consisting of the following:

William H. Dempsey, President, Association of American Railroads.

William G. Simeral, Senior Vice President, E. I. du Pont de Nemours & Co.

#### Members

John R. Eck, Senior Vice President-Manufacturing Coordination, Monsanto Company.

R. J. Hughes, Senior Vice President, Union Carbide Corporation.

J. H. Lloyd, President, Missouri Pacific Railroad

Denman K. McNear, President, Southern Pacific Transportation Company.

Prime F. Osborn, President, The Family Lines.

David L. Rooke, Vice President, The Dow Chemical Company.

R. D. Spence, President, Consolidated Rail Corporation.

C. M. Kittrell,<sup>1</sup> Executive Vice President, Phillips Petroleum.

T. M. Thompson,<sup>2</sup> Chairman of the Board, GATX.

J. F. Anderson, Executive Vice President, Farmland Industries.

It was agreed that the Task Force would be concerned with rail transportation safety issues and, through its subcommittees, would seek practical ways to improve the railroad transportation of hazardous materials.

The following subcommittees were established:

*Equipment.*—including the entire railroad car fleet (not just tank cars);

*Transportation.*—including all aspects of train movement, train makeup, routing, speed limits, identification codes, etc.;

*Data analysis.*—including definition of problems and assembly of an acceptable statistical base; and

*Accident response.*—including all aspects of training and responding to hazards at the scene of an accident.

At a meeting on March 17, Co-Chairmen of the Subcommittees were appointed as follows:

*Equipment:* Harley G. Noland, Union Carbide Corporation; J. E. Martin, Association of American Railroads; and W. J. Harris, Association of American Railroads.

*Transportation:* J. J. Clemens, Dow Chemical Company and J. E. Martin, Association of American Railroads.

*Data analysis:* J. H. Norton, E. I. du Pont de Nemours & Co. and W. J. Harris, Association of American Railroads

*Accident response:* W. R. Schaeffer, Monsanto Company and J. A. Risendal, Association of American Railroads.

The subcommittees met and reported to the Task Force Steering Committee at its meeting on April 7, 1978.

The Accident Response Subcommittee recommended that the Task Force adopt a position in favor of using a hazardous shipment identification system such as that now in use on the Missouri Pacific Railroad. It also recommended mandatory use of STCC numbers of the 49-series and DOT adoption of these requirements. These recommendations were approved by the Task Force Subcommittee.

The Equipment Subcommittee reported that it had discussed and reviewed the problem of retrofitting tank cars to conform to Department of Transportation requirements in Docket HM-114 and that it had discussed the bottom outlet protection problem and the FRA order regarding the removal of high carbon wheels.

The Data Analysis Subcommittee report described a two-phase project for data gathering and analysis. This project would develop a data base for hazardous materials shipments and would then use that base to conduct a systems safety analysis. The Task Force approved setting this project in motion.

The Transportation Subcommittee recommended that each railroad and shipper adopt an affirmative program designed to reduce the number of accidents and mitigate the adverse effects of those that occur. Eight affirmative recommendations were made and approved as follows:

(1) Every railroad and shipper employee whose duties affect the safe movement of hazardous materials will be retrained to comply with Federal regula-

<sup>1</sup> Added at meeting of Mar. 17, 1978; this gentleman represents the Liquefied Petroleum Gas Association.

<sup>2</sup> Added at meeting of Mar. 17, 1978; these gentlemen represent, respectively, the Railway Progress Institute and the Fertilizer Institute.



tions and company rules and regulations governing such transportation, and will be required periodically to demonstrate his knowledge and proficiency.

(2) Speeds of all trains containing placarded loaded tank cars of the 112a and the 114A types, operated on class 3, 4, 5 or 6 tracks, will be restricted to 10 miles per hour less than the maximum speeds authorized for freight trains under the FRA Track Safety Standards.

(3) Compliance with speed restrictions of trains containing cars loaded with hazardous materials will be rigidly enforced.

(4) Shippers and carriers will provide increased inspections of all cars containing hazardous materials at initial terminals and loading facilities, and deficiencies which could impair safety must be corrected before a car is permitted to proceed.

(5) While trains containing cars of hazardous materials are en route:

(a) train and engine crew members will maintain frequent surveillance of their train to permit early detection of any problems which might arise,

(b) employees along the track will carefully observe the passing train and alert the train crew to any defect in the equipment which is detected.

(6) The AAR Mechanical Division will be notified immediately of any mechanical problem or defect in locomotives or cars which may have national implications and instructions contained in Early Warning Letters issued by the Mechanical Division will be promptly carried out. The Early Warning Letter communication system will be expanded to include all car owners to expedite action.

(7) Crews of all trains containing cars of hazardous materials will be provided with manuals which contain instructions for emergency action and response or with computer-generated notations on the train consist providing such information for all hazardous materials carried on that train.

(8) Crew members will be instructed to provide promptly to emergency forces responding to an accident information covering the train consist, commodities carried, and recommended action to be taken.

The next meeting of the Task Force Steering Committee is scheduled for April 28, 1978, at the AAR offices.

#### STATEMENT OF JAMES E. MARTIN, VICE PRESIDENT, OPERATIONS AND MAINTENANCE ASSOCIATION OF AMERICAN RAILROADS

My name is James E. Martin and I am Vice President Operations and Maintenance of the Association of American Railroads. My career in the railroad industry started in 1944 and my experience includes the investigation of accidents and the supervision of a railroad safety department. I have also worked as general yardmaster, trainmaster, terminal superintendent, division superintendent and regional transportation superintendent. Before joining the AAR in April 1976, I was the general manager and then vice president of operations of an eastern railroad and, after this, the vice president of operations of a midwestern rail carrier.

I appear before you today to discuss a legislative proposal to limit train length to 4,300 feet, exclusive of caboose. This portion of S. 2898 was introduced as a safety measure but it has very little relation to overall railroad safety, while at the same time, it would have great economic and operational impact on the railroads.

In 1976, about 32 percent of all trains operated by Class I railroads contained more than 75 cars<sup>1</sup> and AAR's analysis of the operations of a representative sample of these railroads shows that limiting train lengths to 75 cars would require running 29 percent more trains and 24 percent more train miles. These additional trains and train miles would be required, not to increase the services offered by the railroads, but simply to perform the same amount of transportation as in 1976, at a substantially higher operating cost.

Running more and shorter trains will mean purchasing more locomotives, more cabooses, more freight cars and hiring more employees. At nearly three-quarters of a million dollars for new road locomotives, \$45,000 for cabooses and about \$30,000 for the average new freight car, the cost of additional equipment required to comply with a train length limit is tremendous. Despite the fact that

<sup>1</sup> The number of cars which could be run in a train would depend upon the length of each car but, for the sake of convenience, I am assuming, as did Congressman Staggers, that the bill would limit trains to about 75 cars.



no additional equipment is economically justifiable simply to perform service at the same levels. AAR's study of representative Class I carriers shows that the imposition of a 75 car train length limit could require more than 3,000 additional locomotives, more than 2,000 cabooses and more than 3,000 new freight cars. The estimated costs for this equipment exceed \$2.5 billion.

In order to maintain service at the present levels while running more trains, the railroads will need to add to passing tracks and other roadway facilities at an estimated cost of over \$500 million. New signal facilities and equipment and communications facilities and equipment will be required at a cost of about \$229 million.

In summary, the railroad industry believes that a bill limiting train lengths to 75 cars will require added investment of about \$3.3 billion, \$1.9 billion of which is for new locomotives. This amount is almost twice that which was spent by the railroads in 1976 for all capital improvements.

Investment costs are not the only increases that will result from the enactment of this bill. Annual operating costs are predicted to increase by some \$1.2 billion, with the largest increases coming in the area of fuel and labor costs. One major railroad predicts that its fuel costs would increase by almost \$80 million (over 200 million gallons of diesel fuel) and that the crew wage and fringe cost increase, again for this single carrier, would be over \$82 million. On an industry level, fuel costs can be expected to increase by more than one quarter of a billion dollars, or 700 million gallons of fuel oil, and additional crew wages, fringes and allowances will be over \$420 million.

These additional annual costs represent about 6 percent of freight revenues at the Ex Parte 343 level and they represent nearly 7 percent of all 1976 expenses, taxes and rents.

For an added investment cost of over \$3 billion and an added annual operating cost of \$1.2 billion, the railroad industry is supposed to be able to "buy" more safety and greater operating convenience. The facts do not show that this would be the net result.

Train accidents, as reported to FRA, are divided into four major categories—those caused by track, those caused by equipment, by human error and by "other" causes. (The accidents in the "other" category are basically grade crossing accidents.) Accidents caused by track defects most likely would be neither increased nor decreased by the running of shorter but more frequent trains because the total tonnage carried by the track would be relatively constant. Thus, the passage of this bill would have little effect on the 41.6 percent of the accidents caused by defects in the track or track structure. However, high productivity in track maintenance is achieved through the use of large production gangs with mechanized equipment. In order to achieve optimum production consistent with normal traffic flows, these highly mechanized gangs must be given uninterrupted work periods on track of six hours or more. Under current operating procedures, it is possible to fleet trains to allow such "train free" times, but an increase in the number of trains operated could mean that trains are severely delayed wherever maintenance gangs are working or that maintenance production will decline and the costs of track upkeep will skyrocket.

Accidents caused by broken or defective equipment accounted for 21 percent of 1976 train accidents. An analysis by AAR of the data for that year shows that, for equipment-caused accidents, 70 percent of the accidents involving trains of over 75 cars were caused by cars positioned before the 76th car. Only 9 percent of the accidents happening to "long" trains were caused by cars positioned after the 100th car. The only equipment defects which seem to appear more frequently on "long" trains are those relating to air brake hoses and to coupler and draft gear systems; on the other hand, these trains experience less frequent problems with truck components and with wheels than do trains in general.

Air brake system improvements are constantly being developed by the railroads and by the air brake companies; since the mid-1960's, freight cars have been equipped with an increasing number of newer-design, improved air brakes. These new style brakes increase the propagation rate of applying and releasing air brakes (i.e., they decrease the time lag between the application of brakes on the first and the last cars) and they insure a clean release of the brakes, particularly at low speeds, which greatly reduces the chance of a break-in-two and improves the control of the train. These brakes have been tested on 150-car test racks, as well as on trains in excess of 150 cars, and they have proven to be considerably better in performance than the former standard brakes. With 65 per-



cent of the national fleet now equipped with the newer style brakes, long train brake problems will decrease significantly.

Together with the lower strain placed on couplers as a result of new brake systems, coupler, yoke, and draft gear specifications have been revised to ensure better grade castings with higher strength. As these newer specification components become more common, accidents attributable to coupler and draft system failures are also expected to decrease.

In 1970, the AAR initiated a 10-year, \$10 million program on Track/Train Dynamics in an effort to improve safety in overall train performance. Together with the Railway Progress Institute and the Federal Railroad Administration and the Transportation Board of Canada, this program is expected to establish performance specifications for both track and equipment that will continue the progress towards improved safety and reduced maintenance cost along with improved over-the-road performance.

Accidents attributable to human factors cause about 23 percent of the train accidents each year and "other" causes, mainly grade crossing accidents, cause an additional 14 percent of the accidents. Human factors accidents tend to depend more on the total number of trains moving than on the number of cars moving in a particular train. Because this bill would require the operation of more trains, accidents attributable to human failure can be expected to increase. In a similar manner, the AAR study shows that grade crossing accidents are more dependent on the number of trains moving across grade crossings than on the total number of cars in a single train. Since this bill would necessitate a substantial increase in the number of trains operated at any level of traffic, it is likely that the incidence of grade crossing accidents will rise. This would be a tragic result in light of the decrease in grade crossing fatalities which has come about through the grade crossing protection efforts of the railroads in co-operation with state and Federal highway departments.

To summarize the statistical analysis of the safety impact of an artificial limit on train length, it is fair to say that although the incidence of train accidents caused by equipment might improve, the effect on the personal injury picture would probably be adverse. Also, improvements in freight car components and train operations are more likely to reduce the incidence of equipment-caused train accidents than is a limit on train length.

It is in the area of railroad operations that a limit on the length of trains will be most severely felt. Very basic and fundamental to providing rail transportation services is the ability to provide those services with a good measure of flexibility. If rail transportation is to be tailored to meet the needs of shippers and receivers, rigid, impractical and uneconomic restrictions cannot be imposed. Rail carriers must be able to adjust their operations to the peaks and valleys of commodity movements in much the same way that electric utility companies must be able to meet the peak demands of their customers if "brown-outs" are to be avoided.

Farmers, coal producers, automobile manufacturers and many other industrial concerns have a right to expect that their shipments will move on a current basis. Rail carriers have a right to maximize the utilization of their investment. Consumers have a right to expect that railroad common carriers will deliver the goods from the producers to points of consumption in the most economic and efficient manner possible. Finally, this nation as a whole has a right to expect that the patterns of production, transportation, distribution and consumption which have been established on the basis of an integrated nationwide rail transportation system will not be severely disrupted by the imposition of an unnecessary and artificial limit on that system as it now exists.

AAR's survey of major rail carriers shows that the problems of restricted length trains will occur in many phases of railroad operations; a discussion of the findings of this survey follows.

Speaking about line-haul operations, one major carrier said:

"With present facilities, siding spacing, signalling systems and dispatching and traffic control systems, the increased train volume will result in higher interference delays and congestion. Average train speed will decrease and over-the-road transit times will place railroads at a competitive disadvantage with other modes of transportation . . . siding length policies and spacing strategies have developed and have been implemented to best serve the needs of a railroad operating trains of approximately 8,500 feet."



Another carrier surveyed said:

"The proposed train length restriction will require operation of two trains daily on some secondary lines, introducing conflicting movements where facilities are not available for meeting trains . . . . The proposed restriction to 75 cars means that on many days when only 80 or 90 cars are available for a movement some traffic would be left over for the following day since there would be insufficient traffic for a second train."

The requirement to operate trains of no more than 4,300 feet in length will have a special impact in trailer-on-flat-car, or piggyback, service because the cars used to carry highway trailers are among the longest operated and thus, a piggyback train would be limited to only about 45 cars. Not only are loaded trailer and container cars considerably lighter than the average loaded car but, because the cars are newer, they are also predominantly equipped with newer, high performance airbrakes resulting in better train handling characteristics as described earlier. If a 4,300 foot train of 130 loaded ore jennies with a trailing weight of more than 17,000 tons is considered safe to operate, then a 7,000 foot train of 75 trailer/container cars with just over 4,000 trailing tons could hardly be said to be unsafe.

Piggyback traffic is one of the fastest growing areas of railroad service and, because much of it is directly competitive with highway movements, speed and consistency of delivery are vital. Delays caused to these trains soon result in a loss of business.

Train length restrictions would have a severe impact on the operation of unit trains. These are designed to move large volumes of single commodities in single trains from one origin to one destination. The unit train operations of railroads are extremely important to the nation's economy because of the significant amounts of commodities such as coal, grain, and chemicals which move in this fashion. As a point of interest, the railroads are anticipating that the eventual end of the coal strike will require the operation of an even larger number of long coal trains than usual until stockpiles are replenished. And, during the coal strike, many railroads are attempting to assist hardpressed areas of the country by operating unit coal trains of 90 to more than 100 cars from western mines to midwestern and other utilities. Several railroads responding to the survey predicted that a 4,300 foot limit on train length would mean that, "unit train and trainload operation will, for all practical purposes, cease to exist."

Run-through operations in which trains of cars, usually pre-blocked, run across the tracks of several carriers without changing locomotives or cabooses—would also be affected by a law requiring short trains. As one midwestern "bridge" carrier said:

"At present we participate with no fewer than eight carriers in exchange of preblocked or run-through trains; with our major connection this volume equals 11 to 13 solid trains daily including through locomotives and cabooses. Bypass of major terminals and expedited handling and reduced transit times with the resultant savings will be jeopardized due to the inability of handling a multiplicity of blocks on these trains due to their reduced size. Such traffic would therefore be seriously delayed."

Another railroad stated:

"In many instances, our run-through operations with other railroads are arranged so that one train per day handles the entire interchange between [this railroad] and a connecting line. These trains usually exceed 75 cars in length. If a 75 car limit is imposed and there is insufficient traffic to warrant the operation of two trains, then the overflow cars must be held until there are sufficient cars available to justify the operation of another train, resulting in a delay to the traffic."

Another railroad pointed out the fact that Ex Parte 284 requires prompt handling of perishable traffic and that, if a run-through train involved perishables, it might have to be broken up and the affected cars switched out in order to stay within the 75 car limit; this would destroy the unit train and would put an unfair burden of delay on shippers and receivers.

Yard operations would also be impacted by an restriction on train length. Modern classification yards are built to handle long trains and to break them up and reclassify them on a production line basis. In order to justify the tremendous expense of a modern, electronic, retarder-equipped classification yard, the hump must be continuously supplied with long strings of freight cars. A reduction in allowable train length to 75 cars where the yard has been designed to



accommodate trains of at least double that number will mean that the facility will have to operate well below its most efficient capacity.

In the train dispatching operations that follow classification, a reduction in train length will mean either that departure tracks are under utilized or, if two 75 car trains are set up on a track designed to hold, for example, 200 cars, one train must await the dispatching of the other in order to comply with the safety rules (i.e., the blue flag rules) of both the railroad and the Federal Railroad Administration.

The major complaint about the effect of a limit on train length as it affects yard operations, in addition to wasted capacity, is that yarding operations are designed to be flexible so that trains of varying lengths can be accommodated. An artificial train length limit would destroy the investment in flexibility which the railroads have made.

A law limiting train length to 4,300 feet would cause major service and operating deficiencies in branch line operations. On a branch line where only one train is presently operated, overflow traffic must either be operated separately or the traffic held until a full sized additional train can be operated. Many of the one-train-per-day branch lines have no sidings for meets and operating additional daily trains would require siding construction on branches. The coal mining industry would be especially effected by the adverse impact on the branch lines; as one major coal hauler responded:

"In some of our coal mine territory, mine shifters normally handle up to 100 empties in one direction and 100 loads in the other direction to congested single track branches. A restriction of 75 cars per train would result in the operation of additional shifters, and in some cases additional sidings or signal facilities would be needed to accommodate them."

A midwestern carrier said:

"On certain districts where once a day service is now provided, due to peaks and valleys of traffic volume, it would not be economically practical to operate an extra train on days when the train load would exceed 75 cars. . . ."

Another midwestern carrier cited that unit train and multiple-load rates for grain as examples of potentially adverse impact on its branch line operations if a train length limit were imposed.

Car utilization would be hampered by a limit on train length because many railroads haul long trains of empties, particularly for such "one way" traffic as grain and coal, back to origin points. A carrier in the northeast said:

"The requirement to move sizeable blocks of empties, i.e., gondolas, hoppers, covered hoppers, and boxcars from a surplus area to an area in short supply, in a hurry, would be seriously restricted by this legislation. Any restriction placed on the railroad's ability to move any and all cars available for movement at a given time is going to affect car utilization."

Freight service and car utilization are often considered to be synonymous and any restriction placed on the size of freight trains will certainly force the railroads to leave traffic in the yards which were available for movement. This would be especially undesirable in the face of increased efforts by the railroad industry to respond to the service needs of their customers.

As an example, one major eastern carrier has instituted a coal unit train in rotary dump hoppers in order to meet the needs of a specific power utility. This train was established on the basis of a 100 car length and a limit on length would affect the utility's ability to receive the coal it needs at the most advantageous cost. Other examples involve unit coal trains established in response to the national program to become more energy self-sufficient. The establishment of a unit train serving an electric utility involves complex considerations of annual volume, loading and unloading times and capacities, transit times, car supply and freight rate levels. Forcing the industry into a position to lower productivity and higher operating costs will disrupt these patterns and the ripple effect of the disruption will be felt broadly across the economy.

Like unit trains of coal, unit grain trains have become an increasingly important factor in moving harvests from the point of growing and storage to the point at which either the grain is processed and consumer or is exported.

The automobile production industry would also feel the impact on train length limits: many plants have been established to receive unit trains of automobile parts—and to ship unit trains of completed automobiles—and, because the cars used in this service are usually much longer than average, the automobile plants could neither receive nor dispatch trains as efficiently as at present. The concept



of the daily "supply" or "warehouse" train to major industries is growing, brought about by the tremendous cost of carrying stockpiles of components in inventory. A blow to the flexibility inherent in rail operations could prevent the development of more of these kinds of new traffic which the railroad industry needs in order to increase its earnings base.

Let me conclude by saying that the railroads have always recognized the necessity of operating "short" trains in certain situations and "long" trains in other situations. Each railroad deserves and must have the right to tailor its operations according to the needs of its customers. Each railroad must have the complete flexibility to plan its operations without the artificial limitations which would be imposed by an enactment of S. 2898.

Thank you for this opportunity to appear before you and to present the views of the members of the Association of American Railroads on this bill. I will be happy to answer any questions which you may have.

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STATEMENT OF LAWRENCE CENA, PRESIDENT, ATCHISON, TOPEKA & SANTA FE RAILROAD

My name is Lawrence Cena, I am appearing on behalf of the railroad industry in these hearings, and my comments are directed at those portions of Senate Bill 2898 which would amend the Hours of Service Act. I am President of The Atchison, Topeka and Santa Fe Railway Company. I was named President of the Company last January, and for the prior ten years I was Vice President-Operations for the Santa Fe. During my career I have had personal responsibility for many phases of railroad operations I spent 13 years at various points throughout the Southwest in positions of Transportation Inspector, Trainmaster, Superintendent and Assistant General Manager. I came to the corporate headquarters of the Railway in Chicago in July, 1968 and became Vice President-Operations in October of that year.

Public attention has recently been focused on railroad safety because of several unfortunate derailments several months ago. However, much of the proposed legislation before this Subcommittee, ostensibly intended to promote railroad safety, in reality would only hamstring railroad operations without affecting safety at all. The portions of S. 2898 which would amend the Hours of Service Act are among those misdirected efforts.

The first point I think this Subcommittee should bear in mind in considering the question of rail safety in general and S. 2898 in particular is that less than one-fourth of all train accidents are attributable to human error, according to reports of the Federal Railroad Administration. Exhibit A to my statement is a chart from FRA data summarizing the causes of train accidents for the entire railroad industry over the last ten years. It indicates that the total number of accidents has been gradually increasing, but that the number of accidents attributable to human error has remained relatively constant. The increase in train accidents matches a corresponding increase in accidents caused by defects in way or structures. In short, the increased frequency of train accidents has been caused not by human error, but by deficiencies in tracks and roadbed. While you are examining that chart, I would like to point out that the number of accidents attributable to human error shows no significant reductions in 1971 or in 1973, when maximum time under the Hours of Service Act was reduced to 14 and then to 12 hours.

Exhibit A demonstrates graphically the cause for the rise in train accidents. The amendments to the Hours of Service Act contained in Sections 4 and 5 of this bill, as I elaborate below, would only hamper railroad operations and inflict further costs on this transportation mode while not improving safety at all.

AAR STUDIES DEMONSTRATE THAT PERSONAL INJURIES AND TRAIN ACCIDENTS DO NOT INCREASE WITH HOURS ON DUTY

Section 5 of S. 2898 would reduce permissible hours of service to 10 hours. The Association of American Railroads conducted studies to determine the likely effects of reduction in service from 12 to 10 and then to 8 hours. It surveyed 15 of the largest railroad employers covering 84 percent of the employment on Class I railroads. The results of the first study are reflected in Exhibit B. For that study, 14 railroads reported all man-hours worked in each of 12 one-hour



time bands by train and engine employees in May and November, 1976. Fifteen railroads reported all personal injuries to those employees in each time band for May and November, 1976.

Exhibit B compares the percentage of personal injuries which occurred in each one-hour time band with the percentage of manhours worked by employees in train and engine service in the same time band. Over 35.9 million manhours are covered in the two months.

By way of explanation, 12.20 percent of all train and engine manhours covered by the survey were worked within the first hour on duty, while 11.28 percent of all of the personal injuries occurred in the first hour. As can be seen from the graph, the ratios of personal injuries to manhours worked are higher in the second through fifth hours and lower in the sixth through eleventh hours. In other words, except for a slight increase in the twelfth hour, the data shows that there is actually a decrease in incidence of injuries in hours worked after the fifth.

Exhibit C indicates the relationship between accidents caused by human factors and hours worked by engineers. The train accident data was provided by FRA and reflects every "train accident" reported to that agency. These numbers include primarily instances of dropped wheels and other routine mishaps and only a handful of serious derailments, since a reportable accident is one involving more than \$1750 (threshold raised in 1975 from \$750). Exhibit C shows each accident caused by human factors classified according to the time band within which it occurred. This data represents all human factor accidents reported to FRA in 1976 by all railroads. The manhours worked in each time band by engineers were tabulated from responses of fourteen railroads represents 80% of Class I railroad employment. The responses set forth the manhours worked by engineers on these railroads in May and November, 1976, totaling 8.3 million manhours.

The proposed reduction of maximum hours from 12 to 10 in Section 5 of S. 2898 would appear to be based upon the theory that the reduction would decrease the possibility of employee fatigue and thereby reduce accidents related to human factors. The AAR survey statistically shows that theory is simply unfounded. Exhibit C demonstrates that, human factor accidents do not increase with the time on duty of engineers; indeed, the safest hours are the 1st, 6th, 8th, 9th, and 10th. In other words, the proposed reduction in hours of service in S. 2898 would do absolutely nothing to promote the cause of safety in the railroad industry. However, as I demonstrate below, this measure would significantly hamper railroad operations, adversely affect railroad employees and reduce the railroads' ability to compete.

#### HOURS OF SERVICE RESTRICTIONS WOULD DIRECTLY IMPAIR MANY RAILROAD OPERATIONS

Because railroad operations are not like those of a factory, reducing the hours employees work cannot be accommodated by simply putting on an extra shift of workers. For purposes of discussion I shall classify train service into three broad categories and discuss with you the impact of the proposed amendment of each of these types of train service.

##### *Through freight service*

Through freight service is the operation of freight trains over a railroad line between major terminals or established division points. Crews operating these trains are usually assigned to a pool and rotate on a first-in first-out basis. The length of time on duty for a train crew depends on many factors such as distance, terrain, weather, density of traffic and unforeseen contingencies. Because of the uncertainties of train operations, it cannot be foreseen exactly when a crew will complete its work on any given day.

As an example of through freight service, at Arkansas City, Kansas, a freight crew will handle a train from Arkansas City to Gainesville, Texas, approximately 259 miles away. At Gainesville they will turn the train over to another crew which will take the train from Gainesville to the next crew change point. The crew handling the train from Arkansas City to Gainesville will lay over at Gainesville until it is their turn to operate a northbound freight back to Arkansas City.

Let me demonstrate the impact of the Hours of Service Law, as presently written, on operations over that segment of our main line. The distance from Arkansas City to Gainesville, 259 miles, normally requires 10 hours on duty time.



Occasionally some difficulty is encountered enroute which slows the train; perhaps the air hoses develop a leak causing the brakes to set up, and the leak must be found, or perhaps the engine malfunctions. If the crew reaches twelve hours from the time they went on duty they must be relieved. The train is left standing, perhaps at Ardmore, Oklahoma while crew callers at Gainesville—39 miles away—arrange for another crew to report for work. The new crew must have an hour or an hour and one-half notice. When they report at their on-duty point, the railroad must arrange to transport (deadhead) the new crew to Ardmore where the train is waiting. Altogether, two or three hours are lost while the train stands idle, possibly interfering with and delaying other train operations, and perhaps causing other crews to “die on the Law” as well. The second crew’s time under the Law begins when they report for duty and they will likely work only a few hours bringing the train to Gainesville—although they will collect a full day’s pay.

Through freight service is the most efficient portion of railroad operations, and the reduction in permissible hours of service to ten hours will sharply reduce many of the inherent inefficiencies of that type of service. As a result of national agreements in 1971 and 1972 with the two major operating unions, the railroads were allowed to effectuate several cost-cutting, efficiency measures. One of these measures provided for so-called interdivisional runthroughs. A mechanism was established by the national agreements which would permit railroads to streamline their train operations by running through points at which crews had previously changed. Now a single crew can take a train between major yards, lay over, and return without wasting time at intermediate points. This arrangement also eliminated the need for numerous facilities at intermediate points required to provide adequate lodging and food for these crews. Under a 10-hour law, most interdivisional runs, including the run from Arkansas City to Gainesville mentioned above, would be abolished. There is simply not enough time to complete these longer runs and the AAR survey indicates that the railroads will be forced to return to the inefficient method of changing crews at intermediate points in most situations where runthrough service is now provided.

Another feature of the national agreements of 1971 and 1972 allows railroad to operate solid, over-the-road trains in runthrough service and proceed directly to or from foreign railroad yards. Prior to this agreement, only yard crews were allowed by contract to interchange trains between different railroads. The solid, over-the-road train concept permits the efficient use of railroad crews by allowing a road crew to pick up its train from another railroad’s yard and take it directly to a distant location on its own line, or conversely to deliver a whole train to a foreign yard. This procedure expedites traffic by cutting yard delay and avoiding congestion in the various yard terminals. Runthrough service is particularly efficient in urban areas where railroads interchange hundreds of thousands of cars.

For example, Santa Fe operates a train carrying primarily grain and potash from Temple to Houston, Texas. If the train goes only as far as our yard, the trip averages 9½ hours. However, especially in grain harvest season, we run the train straight through to the Port Terminal Railway for expedited loading onto ships. This extra distance of 10 miles requires an extra 1½ hours and would be impossible under a 10-hour law. Unfortunately, most runthrough trains would be precluded by any reduction in the hours of service of the road crew, and would result in poorer service for shippers and additional yard and transfer assignments.

Through freight service is the most efficient phase of rail operations, especially in energy savings, and is also the thrust of the industry’s ability to compete with other modes. Reduction in the permissible hours of service to 10 hours would destroy some of the inherent efficiencies in this service and some of the additional improvements which railway labor and management were able to accomplish in past bargaining sessions. It would result in increased congestion both in yards and on the main lines, and slow down service for all railroad customers. In short, operating patterns would not be determined by consideration of prompt and efficient service for customers, but rather by the time on duty of the crews involved. It can be expected that there will be increased incidents of complete trains standing idle waiting for a crew to come on duty.

#### *Local freight service*

Another broad type of service is referred to as local freight service. It is this type of operation which will be most severely restricted by the proposed reduc-



tion in hours of service. Crews in local freight service operate between fixed points and make numerous stops en route to drop off and pick up cars for delivery or transportation elsewhere. Crews in this service may be assigned to operate from point A to point B one day and return the next day (straight-away service), or they may be assigned to turn around at point B and return to point A the same day (turnaround service). Local freight operations serve customers both on branch lines and main lines. The hours on duty for local service may vary from day to day, month to month, or during different seasons such as grain harvest. A variation of local freight is road switcher service which, by collective agreement, is confined to operating within a short radius of its terminal, generally 25 miles, and performing station and industrial switching. Such assignments often are used to serve industrial areas located close to but outside points where yard crews are assigned.

Local freight service is the type of work which most often requires crews to work more than 10 hours at a time. At present levels of service, it will be simply impossible to complete many local assignments within 10 hours. This type of work has unpredictable working hours; the time it takes to complete an assignment depends upon the requirements of individual customers up and down the line. Frequently, more time than anticipated is needed to complete an assigned route and serve all shippers. Under this amendment, many turnaround local trains, in which a crew presently operates to another point and back within one tour of duty, will have to be changed to straight-away service. This, of course, requires a delay in the return service and may require additional crews. It may also require construction of facilities for food and lodging at the outlying terminal.

Let me explain the effects of a 10-hour service law on a typical Santa Fe local freight operation. We operate a train from Dodge City, Kansas to Boise City, Oklahoma—a distance of 159 miles—on a three-day a week basis. It makes the run from Dodge City to Boise City on Mondays, Wednesdays and Fridays, returning to Dodge City on Tuesdays, Thursdays and Saturdays. This crew handles all of the local switching, consisting primarily of grain and farm products, between the two points, and is normally on duty approximately 11 hours.

Under the proposed amendment, the crew from Dodge City would be unable to reach Boise City within permissible time limits. As a consequence, Santa Fe would be required to establish a new away-from-home terminal for this crew at some intermediate point. Furthermore, in order to maintain the present levels of service, we would have to originate a second crew at a new home terminal. The second crew would require an extra locomotive and caboose, and extra fuel. Rest facilities to supply lodging and meals would have to be provided. All this would be necessitated simply because the present crew working that trip now works beyond a 10-hour day.

The same consequences would occur to turnaround service presently being operated within the 12-hour law. The length of the run would have to be decreased and new terminals would have to be established at intermediate points. Again, service would be delayed, additional crews and equipment would be required, more fuel would be consumed and new facilities would be needed for the crews. Additional traffic could require extra sidings and signal systems.

In order to continue to serve the customers with local freight service, it would be necessary to put more trains into service, with more crews and additional equipment. Additional short runs being conducted along each line would increase traffic and create further delays, especially in single-track territory. Employees would spend much more time in unproductive deadheading to and from their assignments at outlying points and deadheading to relieve crews stranded within the shortened time period.

Also, railroad workers would be required to spend a much greater portion of their time away from their homes. The AAR study mentioned above polled the various participating railroads and established that under a 10-hour law, nearly 14,000 railroad employees across the country will be required to spend additional time at their away-from-home terminals. According to this study, the average amount of time spent away from home would be increased by 125 hours every month. I don't think that our employees or their families would be happy about that.

#### *Yard Service*

The final broad category of train service is that work performed in the yards. A yard is a defined area in which cars are collected, trains are classified and made



up, and from which customers are served. For example, at Kansas City, Kansas, there are yard crews working around the clock seven days per week performing switching service, delivering and receiving cars in interchange from other carriers and classifying them in trains for further movement. Yard service employees serve industries within the yard limits or area by spotting empty or loaded cars at shippers' facilities and later pulling them. They also switch cars and locomotives to inspection and repair facilities.

The national agreements of 1971 and 1972, which I discussed before, allow railroads to establish "push-pull" yard interchange service. Prior to this agreement, a railroad which was either delivering or picking up a train from another road was required to send its engine units without a train to the other yard, pick up a train and return. The national agreements allowed one railroad crew to both take a train to the other yard and return with another train for its own yard. Many yards in this country are simply too far apart and traffic too congested to permit this type of interchange service if it must be completed within 10 hours.

Other effects on yard service from the proposed amendment would result from the inefficiencies caused in through freight and local freight service. The terminals would become congested and delays would increase. Preparation of trains for road movement would have to be performed by yard and transfer crews. In all, many extra crews would have to be added and, of course, all overtime beyond 10 hours for train crews would be eliminated.

#### THIS INEFFECTIVE LEGISLATION WOULD IMPOSE TREMENDOUS COSTS

Section 5 of S. 2898 would not promote safety and would disrupt efficient operations of the railroads. It would impose tremendous costs upon the public and the industry, and reduce the quality of service to shippers. Additionally, it would adversely affect employees' wages and working conditions.

##### *Impact on the public*

Reducing maximum allowable time on duty to 10 hours would reduce the quality of railroad service and significantly increase the cost to shippers and ultimately to the public at large. As I previously mentioned, efficient runthrough operations would be impaired and yard delays increased. Branch line service performed by local freight crews would also be reduced.

The economies of continuing operations on light density lines now hinges upon serving these lines as efficiently as possible. They are often served by a train crew delivering empty cars on the outgoing trip and, after laying over at the away-from-home terminal, picking up the loaded cars on the return trip. Reduced hours of service would require crews to tie up short of their present off-duty point and, after resting, start a new workday to serve the same territory they presently serve in one day. As a result, many customers now receiving daily service would receive tri-weekly service. In some cases, customers would be bypassed because traffic conditions require crews to proceed directly to their off-duty point to avoid violating the Hours of Service Law.

Once cars have been picked up and are in the stream of commerce, they would experience further delays. Yards would be more congested and tracks busier for the reasons I outlined above. Those efficiencies which were obtained by the agreements of railway labor and management would be lost. Furthermore, slower transportation service would aggravate the already severe, industry-wide car shortage, and could undermine the railroads' ability to move adequate levels of coal and grain.

Every major railroad indicated, in response to the AAD surveys, that reduced service levels required by a 10-hour law would likely result in the loss of significant levels of traffic to competing modes. It appears inevitable that certain time-sensitive freight, such as perishables, automobiles and parcel shipments, would abandon railroad service completely.

The tremendous cost increases to the railroads, which I discuss in detail below, would directly affect shippers. Where traffic can be retained, the tariff charges will be increased to recover these costs. Where service on light density lines does not generate sufficient added revenues to meet these additional costs, abandonment would be likely.

##### *Cost to railroads*

Deplacing employee hours and outlawing overtime past 10 hours would obviously require the employment of more persons to perform the same amount of



work, increasing expenditures for wages and benefits. Furthermore, additional equipment would be required, including many more locomotive units and cabooses. Because of increased congestion, more track would have to be laid, especially in single track territory. Additional sidings and new signal systems would be needed. The increased number of trains would consume more fuel and require additional maintenance for engines, cars and all types of equipment used in railroad operations. Because many more crews would be relieved away from home, additional meal and lodging facilities would have to be provided. The shorter hours would increase expenses for the unproductive process of deadheading employees to and from trains.

Finally, the increased number of employees would require considerable administrative expense. More employees would be required to work as crew clerks and crew callers, and to handle claims and paperwork for all these new employees.

It is not merely my opinion that these changes would require billions of dollars of outlay from the railroad industry. The AAR study I referred to surveyed 15 of the largest Class I railroads. The railroads reported the capital costs they would likely incur to comply with a 10-hour law. Their responses were expanded to estimate the cost to all Class I railroads, expressed at July 1, 1977 cost levels. The AAR study reveals that Class I railroads would be required to make additional capital investments of \$1 billion, mostly for additional locomotives. Unlike investments in plant and equipment, this cost would not increase employee productivity or improve service.

The AAR study also estimated increased annual operating expenses. It showed that Class I operating expenses would be increased under the amendment by \$800 million each year. The railroad responses indicated that 23,300 new employees would have to be hired, an increase of approximately 17 percent in the number of train and engine employees.

Obviously, these sums are substantial, but they might be justified if the results were to improve markedly the safety of railroad operations. However, there is no evidence that they would do any such thing. In fact, the evidence shows that hours on duty do not increase the incidence of injury or accident. Maintenance of roadbed has been identified as a critical safety problem in the railroad industry and it is commonly recognized that many railroads are not in a capital position to improve their roadbeds. Federal officials have recognized the public interest in preserving the rail mode of transportation. Under these circumstances, it is peculiarly counterproductive to require railroads to make substantial expenditures because of an amendment which would not enhance safety.

I should note in passing that ConRail employs twenty percent of railroad employees and would likely incur the greatest expenditures to comply with this amendment. It, together with the bankrupt Midwestern railroads, would undoubtedly seek Congress' assistance in funding this new level of expenditures.

#### *Impact on employees*

In the AAR study, the 14 responding railroads were asked to determine when each tour of duty ended during May and November, 1976. The results indicate that roughly 14 percent of all train assignments finish after more than 10 hours. However, only 3 percent of all manhours are worked after the tenth hour. These statistics reveal that it is unusual for a crew to work more than 10 hours but the discussion I have presented should show that efficient operations require the flexibility to work crews that long.

Many employees in the railroad industry, as well as every other industry, seek out jobs which provide an opportunity to work overtime so that they may increase their earnings. Roughly one-third of train and engine employees are currently receiving overtime pay. The AAR survey indicates that 31,800 employees would suffer an average wage loss of \$486 per month if overtime beyond 10 hours is outlawed. I submit that those employees would not be pleased to learn that Congress has cut back the overtime earnings they presently enjoy.

I would like to take a moment to address the policy question of whether railroad operating employees should be prohibited from occasionally working more than 10 hours per day. The inherent nature of railroad operations occasionally causes longer hours on duty in some classes of service than some other industries, but there are many opportunities for rest because of unavoidable idle or waiting time. For instance, considerable on-duty time is spent waiting for trains being readied to leave terminals, waiting for meets and passes with other trains, and waiting to enter terminals at the end of the run. An FRA study of terminal



operations mandated by Section 901(2) of the 4-R Act found that nonproductive time of yard crews ranged from 26 percent to 35 percent. Since a substantial portion of on-duty time is not devoted to actual train operations, statutory elimination of occasional overtime beyond 10 hours is simply not warranted.

There is another aspect of the proposed amendment which I believe would disturb railroad employees greatly. Railroad operating employees are frequently required to spend time away from their families. This usually occurs when the crew is operating in straight-away service and laying over away from home. The effects on family life and the ability to participate in athletic, civic and social activities are obvious. Railroads and labor organizations have cooperated over the years to minimize the amount of time spent laying over away from home but the effect of the proposed amendment would be to negate those efforts. Because so many existing tours of duty could not be completed within 10 hours, the proposed amendment would require new away-from-home terminals where many employees would have to layover before returning home.

For example, one of the most popular jobs is turn-around local freight service because the train goes out to a distant point and returns all in one tour of duty. The crew is able to return home after each assignment and may be able to put in enough miles to work only three or four days per week. Since they are able to spend more time at home, these jobs are held by employees with the highest seniority. Under a 10 hour law, there would be many instances where this service could not be provided on a turnaround basis.

The AAR survey indicates that under a reduction in permissible service to 10 hours, 14,000 railroad industry employees would be required to spend additional time away-from-home. The additional time would average 125 hours per month for those employees.

#### DESIGNATED TERMINAL PROVISION IS DEVOID OF SAFETY BENEFIT

Section 4 of S. 2898 would amend the Hours of Service Act by defining "designated terminal" as the term is used in Section 1(b)(3) of the Act. This amendment is a "technical" one and may appear at first blush to be quite unremarkable. In reality, the proposed definition would substantially alter the structure of the Hours of Service Act and would inflict serious and useless restrictions on railroad operations.

To understand the significance of this amendment, let me remind you how the concept of "designated terminal" was injected into the Hours of Service Act in the first place. The original Law was enacted in 1907 and was not significantly amended until 1969. As originally enacted, it prohibited "continuous" service for a period in excess of 16 "consecutive" hours.

Railroad operations frequently entail delays and crews have historically been released from duty at some interim point during their tour of duty. Over the years after 1907, a considerable body of case law developed over the meaning of "continuous" and "consecutive" in the context of interim release of crews. As a general rule, it was held that a release of three hours or more at a place where food and lodging were available did not count toward the statutory limit of 16 continuous and consecutive hours.

The Act was amended by Public Law 91-169 in 1969 primarily to reduce the maximum hours to 14 and then to 12. Incidentally, Congress also legislated a standard for interim rest. Section 1(b)(3) defines the "time-on-duty" of an employee and states that time-on-duty includes:

"(A) Interim period available for rest at other than a designated terminal;

"(B) Interim periods available for less than four hours rest at a designated terminal."

The only Congressional comment regarding the meaning of "designated terminal" was made by the Senate Committee on Commerce:

"The phrase 'designated terminals' in section 1(b)(3)(A) and (B) is intended to have that meaning commonly recognized in the railroad industry. The committee is advised that collective bargaining agreements provide a commonly understood definition for this term. As a minimum the committee intends that the term should mean generally a place where suitable food and lodging are available for employees." S.Rep. No. 91-604, 91st Cong., 1st Sess., 1969 U.S. Code Cong. & Adm. News 1640.

Despite the Committee's advice regarding collective agreements, it became obvious following the amendments that the meaning of "designated terminal"



was not commonly understood in the industry. Indeed, FRA stipulated to that fact in connection with litigation with Santa Fe over the meaning of this phrase.

FRA subsequently took the position that, because of the legislative history quoted above, a designated terminal could only be the home or away-from-home terminal for a crew. In 1975, the U.S. Court of Appeals for the Ninth Circuit upheld FRA's position, replying on the Congressional comment quoted.<sup>1</sup>

On March 1, 1978, the U.S. Court of Appeals for the Eighth Circuit reached a contrary result in a case involving identical factual circumstances.<sup>2</sup> In that case, the court rejected FRA's contention limiting "designated terminal" to the home or away-from-home terminal for the employees, and ruled that a location where adequate facilities for food and lodging were available was a designated terminal. In so doing, it stated:

"In reaching this conclusion, we are mindful that the purpose of the Act is to promote the safe operation of trains [citations omitted]. The interpretation offered by appellant United States does not enhance safety, but serves only to burden efficient railroading." Slip Opinion at p. 3.

The Eighth Circuit expressly considered the earlier Ninth Circuit decision and refused to follow it. It ruled that the legislative history was unclear, and relied on the Senate Report's statement of its intent that as a minimum, the phrase should mean a place where suitable food and lodging are available.

Section 4 of S. 2898 would overrule the decision of the Eighth Circuit and legislate the definition sought by FRA and various operating unions. It would have serious ramifications on railroad operations and impose tremendous costs on the industry. By confining interim rest to home or away-from-home terminals, the bill would eliminate the possibility of relieving a crew en route. For example, if a train suffers a broken air hose somewhere between the crew's home and away-from-home terminal, and must await mechanical assistance before proceeding, the crew's time under the law would continue to run even as they waited doing nothing.

Before 1969 and consistent the Eighth Circuit's view of the present law, if there were a motel in the area with a restaurant nearby, the crew could be released "under the Law" for a minimum of four hours. After this rest period, the crew could be recalled for duty and proceed to their destination. Although this release time would not be counted toward the Hours of Service Law, the crew members would continue to receive full pay and if they were still working 8 hours after starting their duty, they would begin to accrue overtime. You can see that many employees are content to be relieved "under the law" since they continue to accrue wages while they rest.

Under the definition of "designated terminal" in Section 4, railroads would be forced in these situations to relieve the crew and deadhead them to their home or away-from-home terminal. In all likelihood, they would not be called to work the train again after it was repaired since a fresh crew with no time elapsed under the Law would be equally available at the home or away-from-home terminal to be deadheaded to the train and take it to its destination. The reduction in maximum service to 10 hours as also proposed in this bill would render it even more likely that new crews would be used.

The added expense to the railroad industry of carrying all these extra crews and all the added deadheading expense for vehicles and fuel would be considerable. However, if this amendment would prevent one accident it might be justified. The operational disruptions would not achieve even that meager result.

Let me give you an example from Santa Fe. Streator, Illinois is important on our system, because at that location Santa Fe interchanges freight trains with ConRail. Santa Fe delivers eastbound trains to ConRail for eastern points, and vice versa. On Santa Fe's eastbound freight trains, the engine crew goes on duty at Fort Madison, Iowa and operates the train to Streator, a distance of 145 miles. The conductor and two brakemen go on duty at Chillicothe, Illinois and operate the same eastbound train along with the engineer to Streator, a distance of 40 miles.

If there is a ConRail train waiting at Streator to be operated westbound, the train crew will double back, with the conductor and brakeman going off duty at Chillicothe. If there is not a ConRail train to be operated westbound, which is

<sup>1</sup> *United States v. The Atchison, Topeka & Santa Fe Ry.*, 525 F. 2d 1184, cert. denied, 425 U.S. 992 (1976).

<sup>2</sup> *United States v. St. Louis-San Francisco Ry.*, — F. 2d. —, No. 77-1533 (8th Cir. 1978).



frequently the case, we have traditionally released the crew for interim periods of rest at Streator.

On a number of dates in January, 1976, FRA cited us for working eleven train crews in excess of 12 hours. The crews had been released for periods ranging from 9 hours, 10 minutes to 16 hours, 40 minutes. The employees had checked into a hotel at Streator, presumably ate and slept, and went back on duty when a Con-Rail train arrived to be operated westbound.

FRA cited Santa Fe for 33 violations of the Hours of Service Act totaling \$16,500 because Streator was not a home or away-from-home terminal for the conductor and two brakemen on each crew despite the fact that FRA agreed that the food and lodging at Streator were adequate. The time actually spent operating trains ranged from 3 hours, 25 minutes to 6 hours, 10 minutes for both segments of the round trip. (All of these crewmen were under continuous pay under the applicable collective agreements during the time they were released from duty under the Act.)

One of the ironies involved in these claims is that Streator is an away-from-home terminal for the engineer of these crews. Thus, FRA did not contend that Santa Fe violated the Act insofar as the engineers were concerned, despite the fact that fellow crew members received identical rest periods at the same facilities.

I cannot comprehend how release of crews for 9 to 16 hour rest periods at suitable lodging facilities at locations that have been used by crews for interim rest for years can now constitute an unsafe practice, particularly as to some of the crew members and not others.

Because of the large fines we face under FRA's interpretation, we no longer layover conductors and brakemen at Streator. They must be returned to Chillicothe within 12 hours after leaving it. Frequently the train crew that operates from Chillicothe to Streator does not have a ConRail train to operate back to Chillicothe, and the conductor and brakemen must be deadheaded at company expense back to Chillicothe and a replacement crew deadheaded from Chillicothe to Streator when the train does arrive. All of the time spent by these crew members at Streator and deadheading back to Chillicothe is under pay.

Streator is one of many locations on our system where adequate food and lodging exist at which we would like to be able to rest crews. Obviously, the inability to rest crews at suitable locations is tremendously inefficient, without any contribution whatsoever to safe practices. S. 2898 would mandate these inefficiencies.

The requirement that interim rest periods be taken at a "designated terminal" is presumably intended to ensure that the rest is "at such places as to provide the employee with the proper opportunities and facilities for rest and relaxation from the duties of his occupation." H.R. Rpt. No. 91-169, 91st Cong., 1st Sess. 7 (1969) (emphasis supplied).

The meaning of "designated terminal" which Section 4 advances ignores the fact that suitable "opportunities and facilities for rest and relaxation" are available to employees at many points that are not "home" and "away-from-home" terminals. Whether or not the facilities at a particular location are adequate is an objective fact quite apart from whether the location is a "home" or "away-from-home" terminal. It has nothing to do with rates of pay or benefits that may be "traded" in labor negotiations to obtain a "designation" of a particular terminal. Moreover, this definition leads to the absurd result that a single location with admittedly adequate food and lodging could, simultaneously, be a "designated terminal" for one crew but not for another.

#### OBSERVATIONS

In 1968, when I became Vice President-Operations, Santa Fe finished eleventh of the eleven Class A railroads in terms of personal injuries per million man hours. The year before, Santa Fe had finished twelfth of fourteen railroads. I took it upon myself to change that situation. In 1969, Santa Fe was tenth out of fifteen railroads, and in 1970 it was first in the industry, winning the E. H. Harri-man Memorial Gold Medal for safety. We placed second in 1971, and then first in 1972, 1973, and 1974. In 1975 and 1976, Santa Fe had the best frequency ratio of injuries and the third and second best overall safety records, respectively. I am pleased to inform you that I recently learned that Santa Fe regained its position as industry leader in safety for 1977.



I mention the remarkable improvement in Santa Fe's recent safety record for two reasons. First, our safety experience improved dramatically before and without any relationship to the reduction in maximum hours effective late in the years 1970 and 1972. Nor was our record affected when "designated terminal" was judicially ascribed a restrictive interpretation. It is my opinion that safety would not be improved by further reducing maximum hours of service or restricting interim rest periods to home or away-from-home terminals.

Second, I attribute our turnaround in safety performance to increased management emphasis on training and safety awareness. Our operating employees are required to review operating rules and pass an examination each year. Each employee is given two chances to pass the examination. If an employee fails after two attempts, he or she is held out of service until the examination is passed. It is my experience that an employee works more safely when he or she is familiar with the proper application of operating rules.

To increase safety awareness, safety meetings were frequently conducted for both management personnel and employees. Incentive awards were given to managers for accident-free records. Employees received recognition for safe practices whereby injuries were avoided. Safety was constantly emphasized by company publications and promotions.

I am not suggesting that increased emphasis on training and safety is a panacea for safety problems in the industry. But I am convinced that such measures were successful on the Santa Fe and would be more effective for the industry than the proposed amendments to the Hours of Service Act contained in Sections 4 and 5 of S. 2898.

#### CONCLUSIONS

Exhibit A demonstrates that the increased incidence of train accidents in the railroad industry is not due to human factors. The reductions in hours of service from 16 to 14 and 12, effective late in 1970 and 1972, did not reduce train accidents involving human factors. Exhibits B and C demonstrate that personal injuries and train accidents involving human factors do not increase with time on duty of train crews.

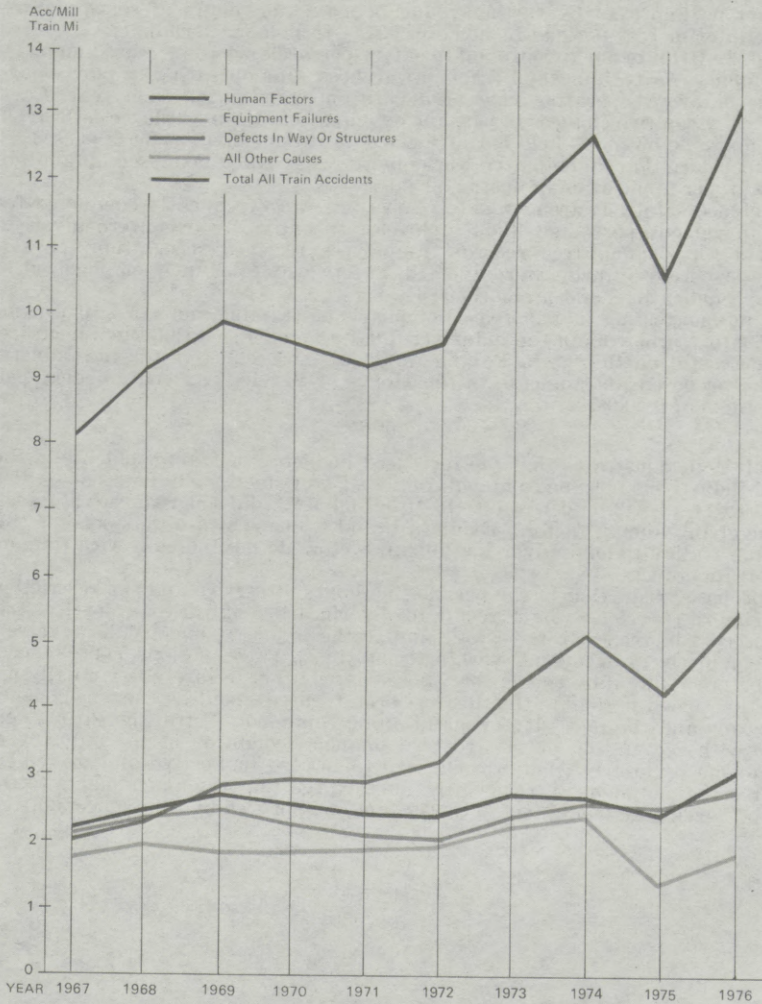
The proposed reduction in the permissible hours of service and the restriction of interim rest periods would result in deterioration of railroad service, tremendous cost increases to the public and to the industry, and would adversely affect employees' wages and working conditions. These serious consequences would be precipitated by legislation whose contribution to safety is virtually nil.

In a time when national attention has been focused upon the energy efficiency of railroads and the necessity of maintaining this mode of transportation, concurrent with recognition of the troubled financial condition of the industry, it seems to me peculiarly counterproductive to impose ineffective and extremely costly restrictions upon railroad operations. I urge that the amendments to the Hours of Service Act contained in S. 2898 not be approved by this Subcommittee.



## EXHIBIT A

# 10 YEAR STUDY OF CONTRIBUTING CAUSE OF TRAIN ACCIDENTS\*

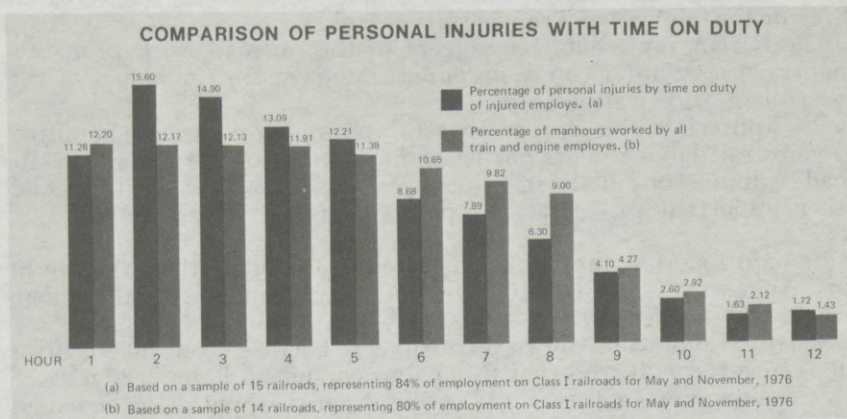


\* From "Accident-Incident Bulletin No.145," Federal Railroad Administration, page 3, December 1977

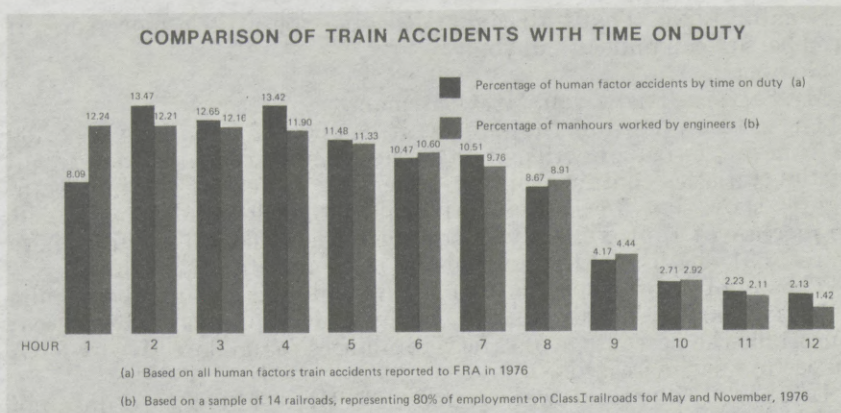
\*\* After 1975 the Train Accident reporting threshold was \$1750; from 1966 -1974 it was \$750



## EXHIBIT B



## EXHIBIT C



Senator LONG. Next, we will call Mr. J. R. Jim Snyder, the national legislative director of the United Transportation Union.

**STATEMENT OF J. R. SNYDER, NATIONAL LEGISLATIVE DIRECTOR, UNITED TRANSPORTATION UNION; ACCOMPANIED BY LAWRENCE MANN, ATTORNEY FOR RLEA; AND MARSHALL SAGE, RESEARCH DIRECTOR FOR UTU**

Mr. SNYDER. Mr. Chairman, we have a full statement, and I would like to request that it be incorporated in the record. I also have a summary which I have reduced further to comply with your committee's request.

Senator LONG. Well, we will print the entire statement. I have read your statement, and I think you have made a very good presentation. I would just hope that you could summarize it in the 10 minutes allotted to you.

Mr. SNYDER. Thank you, Mr. Chairman.



On my left is Mr. Larry Mann, attorney for the RLEA in this matter; and on my right is Mr. Marshall Sage, who is the research director for the United Transportation Union.

The RLEA represents 100 percent of the railroad workers in this country. Please refer to my prepared statement for the names of the constituent organizations.

We appreciate this opportunity to appear before your committee to voice rail labor's views on the authorization for the Federal Railroad Administration during fiscal year 1979, as well as discussing other important rail safety proposals contained in S. 2897 and S. 2898.

I would like to point out: At its recent constitutional convention in Los Angeles, the AFL-CIO overwhelmingly endorsed rail labor's view on these safety issues.

Senator LONG. Slow down, Mr. Snyder. I will let you take a little more time if you'll read that thing slow enough so I can hear it.

Just slow down a little bit. Coming from the South, I'm not used to having people talk quite that fast.

Mr. SNYDER. Well, being an old Georgian, I don't usually talk that fast.

Senator LONG. That's all right; I'll give you a little more time, if need be, so I can understand you.

Go ahead.

Mr. SNYDER. Thank you, Mr. Chairman.

The safety picture is the same as it has been for too long a period of time—it is bad. I will not take the committee's time to read all of the statistics contained in my statement. A few of the important figures show that for 1977 all rail accidents/incidents totaled 76,446, an increase of approximately 20 percent from the 60,873 in 1975. There were 1,531 deaths on the railroads in 1977, and 67,675 injuries.

The number of inspections of equipment and the number found defective further highlights the chronic safety problem. Every year since 1968 the percentage of safety appliances found defective by FRA inspectors has increased.

In 1977, 159 percent were found defective. This figure does not include violations under the freight car standards which became effective in 1975.

The FRA is able to inspect only 20 percent of the fleet of cars once annually. We feel this is a major reason why the railroads do not adhere to the regulations. They know that there is just one chance in five that car will be inspected one time during a year.

Those several accidents discussed in my statement are a sample of over 7,000 derailments which occur annually. In 1977, there were 7,888 derailments. While some railroad derailments are more newsworthy than others, most of them involve the transportation of hazardous materials over defective trackage by defective equipment.

The derailments are too commonplace to be treated as "unexpected occurrences." The railroads have estimated that deferred maintenance has now reached \$6.6 billion. The industry also estimates that \$14.5 billion—not including ConRail—is needed to bring track maintenance to a proper level, and needed to make necessary capital and track improvements over the next 10 years.



Railway labor strongly supports any efforts to provide the railroads with adequate funds to provide a safe railroad system. Also, we recognize the immediate practicalities of the situation.

Until such time as adequate funds are available, we need not throw up our hands in defeat. There are measures that can and must be taken by all interested parties.

First, there must be a thorough inspection by the railroads of all rolling equipment before the train leaves a terminal. If defects are found, require that they be corrected before the train is allowed to move. This is not being done under present practices.

Until the trackage reaches an acceptable level of quality, no carrier should be permitted to use the heavy oversized cars, except under special restricted conditions.

Also, the number of cars on each train should be reduced to eliminate excessive stress caused by the interaction of train-track dynamics.

Recognizing the hazardous track conditions, the FRA should require the railroads, at least for an indefinite period, to inspect the tracks on a more frequent basis than the regulations now require. When FRA first proposed the track regulations, RLEA pointed out the serious deficiencies in the rules.

In addition to the efforts suggested above, legislation is needed also. Now I would like to discuss S. 2897 and S. 2898, bills pending for your consideration which will help improve some of the safety problems.

S. 2898 increases the number of safety inspectors to 600—an increase of 100 from the 1976 authorization. The number of signal and train control inspectors authorized remains unchanged at 45.

RLEA feels that your committee should earmark, also, 100 track inspectors. The FRA has on board a total of 193 field inspectors broken down as follows: 75 motive power and equipment inspectors to inspect over 1.7 million freight cars and 33,000 locomotives; 35 operating practices inspectors; 47 track inspectors to inspect over 170,000 miles of track and roadbed; 20 signal and traffic control inspectors; and only 16 hazardous materials inspectors. The clerical personnel under S. 2898 is increased to 125—presently, 110.

The need for substantially increased numbers of safety personnel was contained in the FRA's comprehensive 5-year plan for attacking the safety confronting the rail industry. In the proposal entitled "Safety System Plan, September 1977," the FRA stated that 800 safety personnel—inspectors, professionals, clerical, et cetera—were necessary to eliminate the increase in train accidents. That number is needed just to keep the accidents at the same unacceptably high level.

The authorizations for the State programs and for safety research and development activities under the Safety Act remain unchanged from prior years. We feel that the funds authorized for railroad safety research and development should be increased to \$15 million. Safety must be given more emphasis than is presently budgeted.

Section 3—"Allocation of Research and Development Funds." Section 3 of S. 2898 takes a new approach in dealing with allocation of funds for the various research and development projects.

It requires that at least 50 percent of all research and development funds shall be expended on safety research, improved track inspection, and data acquisition technology, improved rail freight service, and improved passenger systems.



These programs are the core of the FRA's research and development efforts. Also, funds, allotted for any railroad R. & D. program shall not exceed the funds allotted for rail safety research. At present, several of FRA's research programs are given more funds than safety research.

Section 4—"Designated terminal." Another particularly disturbing development is the attitude taken by the railroads over the meaning of the words "designated terminal" in the 1970 hours of service amendments.

Everyone connected with the railroad industry knows what "designated terminal" means, but some railroads have tried to take advantage of the fact that the term is not specifically defined in the amendments.

In railroad terminology, "designated terminal" means the home terminal or away-from-home terminal for the assignment of a particular crew. The term may be found at 45 U.S.C. section 61(b), and is the specific location at which it is determined whether an employee is counted as being on duty or off duty.

We thought that the matter was resolved when the U.S. Court of Appeals for the Ninth Circuit held that the term "designated terminal" used in the hours of service law means "home terminal and away-from-home terminal" of a particular crew.

The U.S. Supreme Court denied the railroad's appeal. In 1976, several railroads decided to test the issue once again in hopes of getting some court to give a different interpretation.

One railroad has been successful in a case in Missouri where the Eighth Circuit Court of Appeals reached such a decision. Other cases relating to this issue are pending in the Federal courts in Oklahoma, Wisconsin, Arkansas, Alabama, Texas, Mississippi, and Ohio. In addition to the court cases, there are many violations pending before the FRA awaiting final action by the courts.

By enactment of the technical amendment to reaffirm what was intended in the 1970 amendments, the entire backlog can be immediately cleared up, and there will be no further lawsuits on this issue.

Mr. Chairman, this is very important. It has been through the courts. It has been to the Supreme Court, and it's just a round-robin affair, trying to get a judge to upset this, and upset that, but it is very important. There's no question about it. And the FRA agrees that this is what was meant in the amendment when the amendment, in 1970, was passed.

Section 5—"Ten-hour day." This section will reduce the workday for operating railroad workers to 10 hours per day after 2 years. The present law allows a maximum workday of 12 hours. RLEA supports the enactment of this section of the bill.

The railroad worker is employed in one of the most hazardous professions in this country. The operating employee is constantly faced with the real potential of injury or death. With the passage of the hours of service amendments in 1969, we hoped that our employees thereafter would be afforded opportunity for proper rest, and employee errors resulting from fatigue would be reduced.

Unfortunately, neither has occurred. The length of work assignments have not been reduced significantly, and an unacceptable percentage of accidents have been attributed to employee error.



In comparison to other industries, the maximum hours for operating employees of motor carriers are limited to 10 hours driving after at least 8 consecutive hours off duty. An airline flightcrew may not fly more than 8 hours during any 24 consecutive hours without a rest period equal to twice the number of hours in the air since the previous period.

In summary, RLEA feels that a further reduction in the workday is necessary to reduce accidents.

Section 6—"Train length." Section 6 would limit the length of a freight train to 4,300 feet, exclusive of caboose. If passed, it will result in safer trains and railroad efficiency will be improved considerably.

This bill would reduce the length of a freight train to approximately 75 cars, the average length of a freight car being approximately 56½ feet. However, many new cars are as long as 90 feet. My statement details the statistics comparing long and short trains.

Section 7—"Harassment." RLEA strongly supports adoption of section 7 of the bill. Our offices have received numerous complaints over the years of harassment where a worker notifies authorities of violations, testifies in safety proceedings, or even institutes an action against a railroad.

The most unacceptable working conditions are those where an employee is required to operate defective equipment or work in an area which presents an imminent danger to his safety and health.

There is absolutely no excuse for the railroads' actions in such cases, and the employee representatives cannot correct the problem. Similar protection is afforded employees in other industries under the Labor-Management Relations Act—see 29 U.S.C., section 143; and in the Federal Mine Safety and Health Act of 1977—see section 104 (g) of the act.

Section 8—"Office of Occupational Safety and Health." This section creates an Office of Occupational Safety and Health. It may not be necessary to adopt this section in its present form because FRA recently decided to issue OSHA rules covering a few specified work areas, and not for those working conditions relating to rail operations.

Study of nationalization of track, roadbed, and rights-of-way: The issue of whether the track, roadbed, and rights-of-way should be nationalized is being raised again. This may be the approach to take in order to help assure proper construction and maintenance of trackage. Sizable Federal funds will be needed to accomplish the task of putting the tracks in good condition.

Therefore, Federal ownership might be the best way to protect the Federal investment. However, before taking such action, RLEA suggests that Congress authorize a study of the feasibility of nationalization. The Office of Technology Assessment, which recently conducted a study for Congress on rail safety, should be requested to make the study.

S. 2897, the Railroad Safety Act Amendments of 1978: The RLEA has no objection to the enactment of the safety amendments contained in S. 2897. However, with respect to the authorization request for \$35 million, we urge your committee to adopt the provisions contained in section 2 of S. 2898.



In conclusion, RLEA supports the adopt of S. 2989, as well as the safety provisions contained in S. 2897.

Senator LONG. Let me just ask you this.

If it makes sense to stop a train and rest a crew for 4 or more hours because of this congested track up ahead or for any sound reason, and this then requires working a 12-hour workday, and the period is interrupted by this rest, would the proposed labor amendment on the designated terminals increase the operating cost by eliminating the use of any of these in-between terminals?

Mr. SNYDER. In our opinion, no, it would not increase it. This is just a matter, Mr. Chairman, of defining where an employee in the operation of trains takes his rest. And, of course, as you know, there is a provision in the law where there is 4 hours or more at a designated terminal he can get it where there is sufficient lodging in the designated terminal and where he can get meals and all.

This gives a break in service where it is required in some classes of service. So, actually, in the existing law, where it takes out 4 hours or more, he can be away from his home more than 12 hours.

Senator LONG. If Congress were to mandate a maximum length on trains, would this increase the number of trains?

Mr. SNYDER. Yes, it would increase the number of trains, Mr. Chairman.

Our experience in the railroad industry—we have come up from short trains now to the 2-mile, 2½-mile-long trains. And you see the statistics——

Senator LONG. It would also increase the cost of business, I assume—the cost of doing business. If you have to operate more trains, it would cost more to operate them.

Mr. SNYDER. Yes; it would cost more, but many times I think the carriers would be much more competitive and would regain a lot of the traffic that has gone onto the highways, and this would offset the cost.

In the meantime, you give the better service to the customer out there. You are expediting the movement of his freight. You've got a satisfied customer.

Look at the statistics in freight. It has gone down. This is because of the long trains and the deferred maintenance on the right-of-ways. They just can't compete with some of the other forms of transportation in a lot of cases.

There have been studies made on this. There is no question about it. And the OTA study shows this. You would have less accidents.

They are paying now—the railroads are paying now, according to the OTA study, approximately \$600 million a year.

So they would reduce that figure down.

In the meantime, it would get more business, and there are a lot of figures tossed around here by the previous witness here, like, for example, it would take twice as many locomotives. Well, that's ridiculous. It would not take twice as many. If you split a train in two, you would split the engine power in two.

So those types of things—it has been surprising, Mr. Chairman—and we do appreciate your interest in this, and your committee here, in this legislation and bringing it to the attention of Congress—that at no time through the course of these hearings have the railroad carriers



come up with solutions to some of these things; at no time were alternatives stated, not even the FRA in most cases—the NTSB did touch on that—but we've got a serious crisis in this country with cities being blown up, employees being killed, and what we are trying to do is offer some solutions with our expertise in here.

I know they have to look at the economics of this, and we do, too, and we want a sound railroad industry. But we want a safe industry. When you put all of these things together, when the industry is putting out that kind of money—for \$600 million a year, you know, if cut that in two and build up the roadbed and make it more competitive, it would be a much sounder industry, Mr. Chairman.

Senator LONG. Thank you very much, Mr. Snyder.

Mr. SNYDER. Thank you.

[The statement follows:]

STATEMENT OF MR. J. R. SNYDER, NATIONAL LEGISLATIVE DIRECTOR, UNITED TRANSPORTATION UNION

My name is J. R. Snyder. I am the National Legislative Director of the United Transportation Union (UTU). I am appearing today as Chairman of the Safety Committee of the Railway Labor Executives Association (RLEA). Accompanying me is Lawrence Mann, attorney for RLEA in this matter, and Marshall Sage, Research Director for UTU. The RLEA represents 100 percent of the railroad workers in this country, and the names of the constituent organizations are as follows:

American Railway Supervisors' Association; American Train Dispatchers' Association; Brotherhood of Locomotive Engineers; Brotherhood of Maintenance of Way Employees; Brotherhood of Railroad Signalmen of America; Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employees; Brotherhood of Railway Carmen of the United States and Canada; Hotel & Restaurant Employees and Bartenders International Union; International Association of Machinists and Aerospace Workers; International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers, and Helpers; International Brotherhood of Electrical Workers; International Brotherhood of Fireman and Oilers; International Organization of Masters, Mates and Pilots of America; National Marine Engineers' Beneficial Association; Railroad Yardmasters of America; Railway Employees' Department, AFL-CIO; Seafarers' International Union of North America; Sheet Metal Workers' International Association; Transport Workers Union of America; United Transportation Union.

We appreciate this opportunity to appear before your Committee to voice rail labor's views on the authorization for the Federal Railroad Administration during fiscal year 1979, as well as discussing other important rail safety proposals contained in S. 2897 and S. 2898. I would like to point out, at its recent Constitutional Convention in Los Angeles, the AFL-CIO overwhelmingly endorsed rail labor's views on these safety issues.

The safety picture is the same as it has been for too long a period of time—it is bad. We do not know the final statistics for 1977 yet. Preliminary figures for 1977 show that all rail accidents/incidents totaled 76,446, an increase of approximately 20 percent from the 60,873 in 1975. There were 1,531 deaths on the railroads in 1977, and 67,675 injuries. These totals compare with 1,684 persons killed and 65,387 injured in 1976 mishaps. One hundred and four of the deaths in 1977 and 61,029 of the injuries occurred to workers on duty which is another increase from previous years.

Train accidents, primarily collisions and derailments, amounting to more than \$2,300 in damages, totaled 10,220 in 1977, up 27% from 1975. The FRA had identified the cause of the 1977 accidents as follows: defects or failures of equipment, 2,522; human factors, 2,019; track failure, 4,360; miscellaneous, 1,319. Approximately 77% of the 1977 train accidents resulted from bad track and equipment.

In addition to train accidents, the FRA reported, there were 14,679 train "incidents" and 51,547 "non-train incidents" in 1977. The FRA defines a train



incident as an event arising from the movement of an equipment consist resulting in a reportable death, injury or illness, but not more than \$2,300 in damages to railroad on-line property. A non-train incident is such a similar mishap but not from the movement of an equipment consist.

The number of inspections of equipment and the number found defective further highlights the chronic safety problem. Every year since 1968 the percentage of safety appliances found defective by FRA inspectors has increased. In 1977, 15.9% were found defective. This figure does not include violations under the freight car standards which became effective in 1975. The FRA is able to inspect only 20 percent of the fleet of cars once annually. We feel this is a major reason why the railroads do not adhere to the regulations. They know that there is just one chance in five that a car will be inspected one time during a year.

Your Committee is acutely aware of the recent dramatic derailments in Tennessee, South Carolina, Arkansas, Nebraska and Florida caused by poor tracks and defective equipment. Many persons are dead and scores were injured in these accidents.

Near Florence, South Carolina, a broken axle on a locomotive caused an Autotrain to derail, injuring numerous persons. At Waverly, Tennessee, two tank cars, each loaded with 20,000 gallons of liquid propane, were among 24 cars of a Louisville & Nashville freight train that derailed and, subsequently, one exploded when a broken wheel hit a switch point. Preliminary facts indicate that a brake, which had not released, heated up the wheel causing it to break. At present count, there are 17 dead from this accident and more than 50 others injured. Approximately 2,000 of the residents of Waverly had to be evacuated. Tennessee Governor Ray Blanton inspected the scene and described the area as looking like a bombed-out city from World War II. Some residents felt the explosion was like an atomic bomb blast.

On March 10, 1978, the NTSB requested the FRA to recall immediately all wheels similar to the one which broke. The NTSB said its investigation of several recent derailments had disclosed that the cause of the accidents were the breaking of wheels due to overheating. The Louisville & Nashville Railroad reported that it had 11 derailments since January, 1977, which were caused by breaking of the wheels. The FRA now has banned the transportation of hazardous materials on cars with high carbon wheels. By the end of the year, all high carbon wheels must be removed from all cars. We think the NTSB actions were appropriate. However, why didn't the FRA already have adequate regulations to detect similar wheel problems so that corrective action could have been taken before a derailment resulted? Also, why is it that FRA generally promulgates a rule after a catastrophe results, or after Congress forces it to issue a rule, rather than taking preventive steps beforehand?

In November, there was another Louisville & Nashville accident near Pensacola, Florida, in which one person was killed and 16 were injured. The derailment caused the rupture of a tank car carrying ammonia gas. It was the 19th derailment in that area in an 18-month period.

On February 26, 1978, at Youngstown, Florida, 8 persons were killed and 67 hospitalized when 41 cars and 5 locomotives of a 140-car freight train derailed. Approximately 3,000 residents of an 80-square mile area had to be evacuated. There is preliminary evidence that the derailment may have been caused by vandalism. Railway labor has raised some questions about this tentative statement by the NTSB. It is very difficult to sabotage the track in the manner suggested by some. The derailment resulted in a rupture of a tank car carrying deadly chlorine gas. An Environmental Protection Agency representative stated that the gas literally burns your lungs up, causing death.

At Lewisville, Arkansas, on March 29, 1978, a train carrying vinyl chloride and an explosive chemical derailed, causing an explosion and fire at a nearby petroleum plant. Seventeen hundred residents were evacuated, and, luckily, there were only a few injuries. On April 1, 1978, a derailment at Brownson, Nebraska, injured six persons when a tank car exploded. Over 1,500 persons had to be evacuated from that area.

Those several accidents are a sample of over 7,000 derailments which occur annually. In 1977, there were 7,888 derailments. While some railroad derailments are more newsworthy than others, most of them involve the transportation of hazardous materials over defective trackage by defective equipment. The derailments are too commonplace to be treated as unexpected occurrences. The rail-



roads have estimated that deferred maintenance has now reached \$6.6 billion. The industry also estimates that \$14.5 billion (not including Conrail) is needed to bring track maintenance to a proper level, and needed to make necessary capital and track improvements over the next 10 years.

Railway labor strongly supports any efforts to provide the railroads with adequate funds to provide a safe railroad system. Also, we recognize the immediate practicalities of the situation. Until such time as adequate funds are available, we need not throw up our hands in defeat. There are measures that can and must be taken by all interested parties. First, there must be a thorough inspection by the railroads of all rolling equipment before the train leaves a terminal. If defects are found, require that they be corrected before the train is allowed to move. This is not being done under present practices. Until the trackage reaches an acceptable level of quality, no carrier should be permitted to use the heavy oversized cars, except under special restricted conditions. Also, the number of cars on each train should be reduced to eliminate excessive stress caused by the interaction of train-track dynamics. Recognizing the hazardous track conditions, the FRA should require the railroads, at least for an indefinite period, to inspect the tracks on a more frequent basis than the regulations now require. When FRA first proposed the track regulations, RLEA pointed out the serious deficiencies in the rules. Unfortunately, RLEA now must say to FRA—we told you so. Also, it is time for the FRA supervisors to move from behind their desks and assist in the inspections. It is inconceivable that the entire time of the supervisory personnel must be devoted to paperwork. It is more important that these persons spend time in the field to improve the FRA's inspection efforts.

In addition to the efforts suggested above, legislation is needed also. Now I would like to discuss S. 2897 and S. 2898, bills pending for your consideration which will help improve some of the safety problems.

S. 2898 increases the number of safety inspectors to 600 (an increase of 100 from the 1976 Authorization). The number of signal and train control inspectors authorized remains unchanged at 45. RLEA feels that your Committee should earmark, also, 100 track inspectors. The FRA has on board a total of 193 field inspectors, broken down as follows: 75 motive power and equipment inspectors to inspect over 1.7 million freight cars and 33,000 locomotives; 35 operating practices inspectors; 47 track inspectors to inspect over 170,000 miles of track and roadbed; 20 signal and traffic control inspectors; and only 16 hazardous materials inspectors. The clerical personnel under S. 2898 is increased to 125 (presently 110).

The bill also provides for travel allowances up to 20 days per month for railroad safety inspectors. The lack of travel funds for inspectors to inspect rail properties has been a particular problem to FRA. The FRA hierarchy has, at times, allocated its funds to other matters, thereby preventing its inspectors from inspecting away from home. RLEA urges the inclusion of the travel allowances. I might add that the FY 1978 appropriations for FRA contained a similar provision.

The need for substantially increased numbers of safety personnel was contained in the FRA's comprehensive five-year plan for attacking the safety problems confronting the rail industry. In the proposal, entitled "System Safety Plan" (September, 1977), the FRA stated that 800 safety personnel (inspectors, professionals, clerical, etc.) were necessary to eliminate the increase in train accidents. That number is needed just to keep the accidents at the same unacceptable high level.

The authorizations for the State programs and for safety research and development activities under the Safety Act remain unchanged from prior years. We feel that the funds authorized for railroad safety research and development should be increased to \$15,000,000. Safety must be given more emphasis than is presently budgeted.

#### SECTION 3—ALLOCATION OF RESEARCH AND DEVELOPMENT FUNDS

Section 3 of S. 2898 takes a new approach in dealing with allocation of funds for the various research and development projects. It requires that at least 50% of all the research and development funds shall be expended on safety research, improved track inspection and data acquisition technology, improved rail freight service and improved passenger systems. These programs are the core of the FRA's research and development efforts. Also, funds allotted for any railroad



R&D program shall not exceed the funds allotted for rail safety research. At present, several of FRA's research programs are given more funds than safety research.

We agree with any effort to improve the bleak safety picture. It is important for your Committee to focus attention on this matter since you deal with all other aspects of railroad safety. It is our understanding that FRA does not feel it needs to seek approval from your Committee for its research and development authorizations (except for safety). While there is some question as to such position, this legislation will give your Committee better supervision over all of the railroad matters administered by FRA.

#### SECTION 4—DESIGNATED TERMINAL

Another particularly disturbing development is the attitude taken by the railroads over the meaning of the words "designated terminal" in the 1970 Hours of Service amendments. Everyone connected with the railroad industry knows what designated terminal means, but some railroads have tried to take advantage of the fact that the term is not specifically defined in the amendments. In railroad terminology "designated terminal" means the home terminal or away from home terminal for the assignment of a particular crew. The term may be found at 45 U.S.C. § 61(B) and is the specific location at which it is determined whether an employee is counted as being on duty or off duty. We thought that the matter was resolved when the United States Court of Appeals for the Ninth Circuit held that the term "designated terminal" used in the Hours of Service law means home terminal and away from home terminal of a particular crew. The United States Supreme Court denied the railroad's Petition for Certiorari. The case is entitled *United States v. Atchison, Topeka & Santa Fe Railway Co.*, 525 F. 2d 1184 (9th Cir. 1975), cert. denied, 48 L. Ed. 2d 816 (1976). A similar result was reached in *United States v. Chesapeake & Ohio Railway Co.*, 399 F. Supp. 480 (W.D. Ind. 1975). In 1976, several railroads decided to test the issue once again in hopes of getting some court to give a different interpretation. One railroad has been successful in a case in Missouri where the Eighth Circuit Court of Appeals reached such a decision. Other cases relating to this issue are pending in the Federal courts in Oklahoma, Wisconsin, Arkansas, Alabama, Texas, Mississippi and Ohio. In addition to the court cases, there are many violations pending before the FRA awaiting final action by the courts.

By enactment of the technical amendment to reaffirm what was intended in the 1970 amendments, the entire backlog can be immediately clear up, and there will be no further lawsuits on this issue.

#### SECTION 5—TEN-HOUR DAY

This section will reduce the workday for operating railroad workers to 10 hours per day after two years. The present law allows a maximum workday of 12 hours. RLEA supports the enactment of this section of the bill.

The railroad worker is employed in one of the most hazardous professions in this country. The operating employee is constantly faced with the real potential of injury or death. With the passage of the hours of service amendments in 1969, we hoped that our employees thereafter would be afforded opportunity for proper rest, and employee errors resulting from fatigue would be reduced. Unfortunately, neither has occurred. The length of work assignments have not been reduced significantly, and an unacceptable percentage of accidents have been attributed to employee error. It is undebatable that there is a direct correlation between excessive work hours and accidents, and the facts in the railroad industry are no exception. In comparison to other industries, the maximum hours for operating employees of motor carriers are limited to 10 hours driving after at least 8 consecutive hours off duty. An airline flight-crew may not fly more than 8 hours during any 24 consecutive hours without a rest period equal to twice the number of hours in the air since the previous period.

In summary, RLEA feels that a further reduction in the workday is necessary to reduce accidents.

#### SECTION 6—TRAIN LENGTH

Section 6 would limit the length of a freight train to 4,300 feet, exclusive of caboose. If passed, it will result in safer trains and railroad efficiency will be improved considerably.



It is common knowledge in the railroad industry that trains exceeding 75 car lengths are more likely to derail than shorter trains. Also, equipment failures are more prevalent in longer trains, and they result in more frequent delays as well as longer delays.

This bill would reduce the length of a freight train to approximately 75 cars, the average length of a freight car being approximately 56½ feet. There are 7 basic types of freight cars in use on the railroads which comprise 97.8 percent of the total car fleet of approximately 1.7 million. The average length of a box car is 57 feet, 5 inches and is 27.1 percent of all cars. The hopper car is 50 feet long, comprising 21.5 percent of the total. However, many new cars are as long as 90 feet.

In a study conducted in 1970 by the Massachusetts Institute of Technology, it was found that trains with more than 75 cars encounter many more delays due to equipment failure than did trains with fewer than 75 cars. Burst air hoses occurred three times more frequently on trains with 75 or more cars, and the frequency of sticking brakes was 8.5 times greater. For 75-car trains, coupler failure was low, but in trains containing over 75 cars, the incidence was 7.4 times greater. Along with the more frequent delays in trains of more than 75 cars, such delays lasted 1½ times longer.

For non-track causes of derailment, the longer the train, the greater the probability of a derailment. Furthermore, in trains with 100 cars or less, one study by an eastern railroad has shown that an average of 4.6 cars derailed, whereas trains having 250 cars averaged 7.1 cars per derailment.

A train with 100 cars or less can expect fewer broken knuckles and drawbars than longer trains. The chances of breaking a knuckle or drawbar on a trip with a train of 100 cars or less is 23 times smaller than a train twice the length. For very long trains, separations can be expected in one out of 6 trips, but in shorter trains, the results are one in 135 trips. The probability of uncoupling for a train with 100 cars or less is one in 500, but the probability in a 200-car train is one in 33.

The previously mentioned study by OTA states that there has been an increase in axle loadings over the last several years and that this logically has a negative impact on safety due to increased wear and tear on the roadbed. The FRA confirmed this fact in an analysis of accidents and train length where it concluded that trains with 75 or more cars whose weight exceeded 7,000 tons derailed more frequently than lighter trains.

Everyone is concerned about the fuel crisis and that the use of more trains may require more fuel. However, the AAR statistics indicate that presently the average number of cars in a train is 67 and the total impact of the bill on the carriers does not seem great. Compared with other transportation modes such as the motor carriers, the fuel requirement for a 75-car train is still greatly lower per net ton of freight handled. Railroads use much less fuel than trucks for the same amount of freight hauled. A 75-car freight train can relieve the highways of 150 to 200 trucks. Moreover, the trucks are causing severe damage to the Nation's highways. Secretary Adams recently issued a strong warning to the Governors of 28 States concerning highway damage due to truck overloading.

#### SECTION 7—HARASSMENT

RLEA strongly supports adoption of Section 7 of the Bill. Our offices have received numerous complaints over the years of harassment where a worker notifies authorities of violations, testifies in safety proceedings, or even institutes an action against a railroad. The most unacceptable working conditions are those where an employee is required to operate defective equipment or work in an area which presents an imminent danger to his safety and health. There is absolutely no excuse for the railroads' actions in such cases, and the employee representatives cannot correct the problem. Similar protection is afforded employees in other industries under the Labor-Management Relations Act (See, 29 U.S.C. § 143) and in the Federal Mine Safety and Health Act of 1977 (See Section 104(g) of the Act.)

#### SECTION 8—OFFICE OF OCCUPATIONAL SAFETY AND HEALTH

This section creates an Office of Occupational Safety and Health. It may not be necessary to adopt this section in its present form because FRA recently decided to issue OSHA rules covering a few specified work areas, and not for those



working conditions relating to rail operations. RLEA submits that an adequate inspection force should be established, but at present the size of the authorization in Section 8 could be reduced. If sufficient OSHA inspectors are not authorized, the OSHA rules will create nothing more than false hopes.

Now, I would like to direct your attention to other safety problems for you to consider:

### *1. Safety Glass*

On March 9, 1977, the Subcommittee on Crime of the Committee on the Judiciary conducted hearings on the criminal vandalism affecting the railroad industry. In recent years there has been a dramatic increase in crimes committed on the railroads. Employees have been a particular target for gunfire and rock-throwing attacks. Last year there were 11,264 stonings of trains and 714 shootings at trains.

As a result of the above-mentioned hearings, the Subcommittee requested that the FRA issue regulations to enclose the cab area of locomotives and the interior of cabooses with bullet-proof material. In response, the FRA, in a cooperative effort with the railroads and the Brotherhoods, conducted ballistics tests of various kinds of protective materials. The tests have determined the best kind of material that will protect against bullets and other kinds of objects. RLEA has asked that FRA adopt regulations to incorporate the appropriate safety standards based upon the test results. The railroad industry will need some federal assistance in meeting the costs of installing the bullet-proof materials. We hope your Committee will recognize the urgent need for this kind of protection and will earmark funds to help meet the costs. It is estimated that a total of \$50,000,000 may be necessary to retrofit the locomotives and cabooses, RLEA seeks your authorization of \$25,000,000 in grants to the railroads for this purpose, to be available for a three-year period.

### *2. Study of Nationalization of Track, Roadbed and Rights of Way*

The issue of whether the track, roadbed, and rights of way should be nationalized is being raised again. This may be the approach to take in order to help assure proper construction and maintenance of the trackage. Sizable federal funds will be needed to accomplish the task of putting the tracks in good condition. Therefore, federal ownership might be the best way to protect the federal investment. However, before taking such action, RLEA suggests that Congress authorize a study of the feasibility of nationalization. The Office of Technology Assessment, which recently conducted a study for Congress on rail safety, should be requested to make the study.

### *S. 2897—The Railroad Safety Act Amendments of 1978*

The RLEA has no objection to the enactment of the Safety amendments contained in S. 2897. However, with respect to the authorization request for \$35,000,000, we urge your Committee to adopt the provisions contained in Section 2 of S. 2898.

In conclusion, RLEA supports the adoption of S. 2898, as well as the safety provisions contained in S. 2897.

[The following information was subsequently received for the record:]

RAILWAY LABOR EXECUTIVES' ASSOCIATION,  
Washington, D.C., April 26, 1978.

HON. RUSSELL B. LONG,

Chairman, Subcommittee on Surface Transportation, Committee on Commerce, Science and Transportation, Russell Senate Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: On April 21, 1978, the Surface Transportation Subcommittee conducted hearings on S. 2897 and S. 2898. At these hearings, the representatives of the Association of American Railroads made certain statements which are misleading and lack merit. I am taking the liberty of bringing some of these to your attention.

1. Figure 2 attached to Mr. Dempsey's statement shows that the number of major accidents has been declining. The reason for this is clear. Over 43% of the tracks are under slow orders and when a derailment occurs (there were 7,888 in 1977), it is usually at slow speeds. The fact still remains that there are an excessive number of derailments causing tremendous damages.



2. On page 7 of Appendix "F" of Mr. Dempsey's statement, it is said that "railroad employee fatalities per man hours of employment have remained constant since 1966." What Mr. Dempsey fails to mention is that the statistics include the hours of employment of railway clerks who have comparatively little exposure to accidents. The railways clerks comprise almost one-half of the total workers in the railroad industry.

3. On page 2 of the prepared testimony of Mr. Dempsey he states that employee fatalities show significant declines from prior years. However, Mr. Dempsey fails to point out that railroad employment has constantly dropped. Thus fewer employees are exposed. ICC figures show railroad employees dwindling from 1,210,485 in 1948 to 840,575 in 1958, 590,536 in 1968 and down to 468,984 in March 1978.

4. In Appendix "H" attached to Mr. Dempsey's statement, the AAR relies on the OTA study to support the position that safety will not be enhanced by increased inspection programs. For your convenience, I am enclosing a copy of a letter which I recently wrote to Congressman Rooney concerning the same point. It clearly shows that such reliance by the AAR on this part of the OTA Report is misplaced.

5. Exhibit "B" to Mr. Lawrence Cena's statement contains two charts comparing the percentage of accidents and injuries with time on duty. The validity of these charts are very suspect. First, why did the AAR choose to pick only the two months of May and November, 1976, upon which to base its conclusions? Secondly, the charts show that the percentage of injuries and accidents are greatly reduced after eight hours. This is so because the overwhelming majority of employees work an eight-hour shift. The relatively few employees working over eight hours could be involved in many accidents and still this wouldn't change the overall percentage.

6. One of the most exaggerated arguments of the AAR is contained on pages 17-18 of Mr. Cena's statement. There he says that if the time on duty were reduced from twelve to ten hours per day, it would cost the industry billions of dollars. The statement is so ridiculous that it warrants little or no comment. The industry made similar arguments in 1970 when the hours were reduced from 16 hours per day to 12. In fact, the law had very little impact on the costs to the carriers.

I have no intention of reviewing the AAR's presentation page by page to point out why most of the statements lack credibility. However, I trust these few examples will help you make a more accurate evaluation of the various safety proposals contained in S. 2897 and S. 2898.

Respectfully yours,

J. R. (JIM) SNYDER,  
Chairman, Safety Committee Association,  
Railway Labor Executives' and National Legislative Director,  
United Transportation Union.

Enclosure.

RAILWAY LABOR EXECUTIVES' ASSOCIATION,  
Washington, D.C. March 23, 1978.

Re: Railroad Safety Hearings on Authorization for the FRA and Railroad Safety Amendments.

HON. FRED B. ROONEY,  
Chairman, Subcommittee on Transportation and Commerce, Committee on Interstate and Foreign Commerce, U.S. House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: At the hearings on March 16, 1978, you asked me what deficiencies there were in the recent report from the Office of Technology Assessment on rail safety. The major areas where the OTA Report is deficient is in its analysis of FRA's enforcement activities and in FRA rulemaking.

In your Committee's deliberations on the Transportation Safety Act of 1974, the following statements were made in your Report:

"The weight of evidence gathered in testimony before the Subcommittee indicated the Federal Railroad Administration simply was not living up to neither the spirit of the Federal Railroad Safety Act of 1970, nor, in some cases, the letter of the law.

\* \* \* \* \*

The Committee found that the Federal Railroad Administration has consistently downgraded enforcement and inspection, and has devoted most of



their resources to research and development. The evidence presented in testimony before the Subcommittee, and in staff research, indicated a strange set of priorities in this regard, and a conscious effort by the Department to deemphasize inspection of rail carriers.

\* \* \* \* \*

The Committee found that after 3½ years, the FRA inspection of rail equipment and plant seems to be a stepchild of the Department's low key safety approach." House Report No. 93-1083, 93rd Cong., 2d Sess. (1974). Again, in 1976, your Committee stated:

"The Committee feels, as it stated in its report on this legislation last year, that these statistics telling the story that the Federal Railroad Administration (FRA) is not doing its job adequately." House Report No. 94-1166, 94th Cong., 2d Sess. (1976).

This is the background upon which your Committee authorized the study by the Office of Technology Assessment to evaluate the Federal railroad safety program. Nevertheless, the report does not deal in any detail with the above mentioned problems. For example, from reading the report you can not determine that in Fiscal Year 1967, the FRA inspected 1.6 million cars and locomotives for safety appliance defects, but in 1976 there were only 402,000 inspections. Also, you can not determine from the OTA study that the percentage of defective safety appliances increased every year starting in 1967 at 6.78 percent up to 13.2 percent in 1976. Even a perfunctory analysis of the inspection program of FRA should include such statistical information. Rail labor has expressed its views many times on the inadequacy of FRA's inspection and enforcement activities, and I don't think it is necessary to repeat them in this letter.

Turning to the issue of rulemaking at FRA, the OTA looked at several areas of FRA's rulemaking dockets. However, the study did not deal with the issues presented in those proceedings and how they were resolved by FRA. Moreover, the amendments in the Transportation Act of 1974 required the Secretary of Transportation to respond to all recommendations of the NTSB within 90 days after receipt thereof, stating the Secretary's intention to either adopt such recommendations, or to reject them. If the Secretary rejects the recommendations, in whole or in part, he is required to include in his statement, his reasons for such rejection. The OTA did not investigate what FRA has done with respect to any of the NTSB recommendations. In fact, it is our understanding that the FRA has not adopted any of the NTSB recommendations to date.

For your convenience, I am attaching the comments of the RLEA to several major rulemaking proceedings at the FRA. If OTA had investigated the records, it would have discovered that FRA has not adopted any of the recommendations of railway labor. Surely railway labor can't be wrong all the time as it relates to the protection of its employees and the public.

I hope the above information will clarify problems that RLEA has with the OTA Report.

Very truly yours,

JAMES R. SNYDER,  
*Chairman, Safety Committee.*

Senator LONG. Next we will call on Mr. Paul Rodgers, general counsel of the National Association of Regulatory Utility Commissioners.

**STATEMENT OF PAUL RODGERS, ADMINISTRATIVE DIRECTOR AND  
GENERAL COUNSEL, NATIONAL ASSOCIATION OF REGULATORY  
UTILITY COMMISSIONERS; ACCOMPANIED BY ALVINA M.  
McHALE, DIRECTOR OF CONGRESSIONAL RELATIONS**

Mr. RODGERS. Good morning.

My name is Paul Rodgers. I am the administrative director and general counsel of the National Association of Regulatory Utility Commissioners, commonly known as NARUC.



I'm accompanied today by Alvina McHale, our NARUC director of congressional relations.

The NARUC is made up of the State Commissioners of the 50 States engaged in the regulation of utilities and carriers.

Your father was a member of the NARUC back in the twenties when he began his political career as a member of the Louisiana Public Service Commission.

I will summarize my statement, Mr. Chairman.

What we are asking for is funding for a grant-in-aid program for the insuring fiscal year of \$1.9 million, plus a \$800,000 carryover.

Now, this money will be given to the States on a 50-50 matching basis which would aid greatly in increasing the number of railroad safety inspectors, and in order to improve the overall safety of the railroad, or try to, this increase in the number of State safety inspectors is brought about with half of what the Federal Government would have to pay for the entire price of the salaries.

We are concerned about one provision in S. 2897 which concerns the right of the States to seek assessments from the railroads for safety violations if within 90 days the Secretary of the Department of Transportation has failed to assess the civil penalty. We would like the 90-day requirement reduced to 60.

And, also, this provision is somewhat similar to legislation that the NARUC has supported for a couple of years now. This provision is on the assessment of railroads for safety violations when FRA does not use its discretion on a timely basis. We think that the State commissions participating in the national railroad safety program should have a right to seek injunctive relief immediately where there is a railroad violation or safety violation which the FRA does not seek to stop.

In our proposed language, which I would like to insert for the record, the States can seek this injunctive relief in the Federal district courts.

Also, we would like to see this bill put in by the administration, the Railroad Safety Act Amendments of 1978, expanded to set up a Federal safety regulatory advisory committee made up nine members, two from the general public, two from the State commissions, two from railroad management, two from railroad labor, presided over by the FRA administrator or his designee.

And, also, we would like to see the State cooperative program authorized by the Federal Railroad Safety Act of 1970 expanded to include other Federal Railroad Safety laws which were adopted earlier or later. It seems to me this would bring about more effective utilization of manpower.

And, Senator, that concludes my statement.

Senator LONG. Thank you very much, sir.

I have no further questions. Thank you.

[The statement follows:]

STATEMENT OF PAUL RODGERS, ADMINISTRATIVE DIRECTOR AND GENERAL COUNSEL,  
NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

Mr. Chairman and Members of the Subcommittee:

My name is Paul Rodgers. I am the Administrative Director and General Counsel of the National Association of Regulatory Utility Commissioners (NARUC).



I am accompanied today by Alvina M. McHale, NARUC Director of Congressional Relations.

NARUC is a quasi-governmental, nonprofit association founded in 1889. Within its membership are the governmental agencies of the fifty States and of the District of Columbia and Puerto Rico, engaged in the regulation of utilities and carriers. Our chief objective is to serve the public interest by seeking to improve the quality and effectiveness of government regulation.

The members of NARUC appreciate this opportunity to make their views known on the fiscal 1979 Authorization of Appropriations under the Federal Railroad Safety Act of 1970.

NARUC members are directly involved in implementing Section 206 of the 1970 Rail Safety Act which establishes a program of State participation in the enforcement of Federal railroad safety standards. NARUC is requesting an appropriation of \$1.9 million in the 1979 Department of Transportation budget to fund the State grant-in-aid program and the expenditure of the anticipated carryover from fiscal year 1978 of \$0.8 million.

The program is administered by means of a Federal-State partnership, including State certification similar to the certification principles set forth in the Natural Gas Pipeline Safety Act of 1968. Those States certified to carry out investigative and surveillance activities on behalf of the DOT Secretary and those States which have entered into agreements with the Secretary provide money and manpower to ensure that safety regulations written in Washington, D.C. are, in fact, implemented throughout the country.

Despite optimistic predictions by the Federal Railroad Administration about bringing significant numbers of qualified State inspectors on board, the record of State participation to date can only be described as dismal. At the present time, there is no State participation in the safety program at all in 27 of the 50 States (Appendix).

Of the 23 States participating, only four States are certified for track inspection with a full complement of State inspectors aboard. Six States claim a similar distinction in the area of equipment inspectors. Most States decline certification which permits State participation in the entire safety program and opt instead for "agreement" status which permits State participation in only part of the program.

FRA's sluggishness in drafting safety regulations and setting track standards provided no incentive for States to join the Federal rail safety effort. Initial safety regulations were expected by the end of 1971, but track standards were not on the books until 1973. Freight car standards were not effective until 1974. Additionally, since FRA interprets the 1970 Act as precluding State enforcement of safety standards under any other Act, the overall effectiveness of State safety regulation has been questioned.

The process of revising track safety standards is also painfully slow. State participants were expecting the changes imminently but were recently advised that the revisions will not be published in the Federal Register for at least another six months. No explanation was offered by FRA for the delay.

Add to the above FRA's unreasonable State participation guidelines which require State inspectors to have six years experience or 2-½ years of intensive training before performing independent inspections. States have been unable to meet salary requirements for inspectors with such backgrounds.

NARUC is clearly not arguing that States hire unqualified personnel to assume responsibility for rail safety efforts, but, as we argued during an April 5 hearing by the National Transportation Safety Board, standards issued by the FRA must give States some leeway and control over their personnel and inspection programs. An arbitrary determination by FRA that State inspectors must conform to Federal employee standards does not allow for wide State differences in roadbed and track conditions, in population concentrations near track, and in the varying workload responsibilities given to inspector trainees.

FRA projects that appropriations authorized for this program for fiscal 1979 as well as all carryover funds from the previous year will be spent. NARUC hopes that FRA can reverse its earlier record of indifference and neglect and commit itself administratively to making State participation in the rail safety effort more than a pipe dream. We are confident that State personnel can display a comprehensive knowledge of freight car inspection techniques, freight car equipment, and general railroad safety. We believe they can demonstrate specialized knowledge about proper corrective action to make freight cars comply with



Federal standards. We are convinced that they can handle investigations of railroad accidents referred to their State agencies by the FRA Administrator.

But first, State personnel and States must be given incentives to compete for Federal funds. Once FRA roadblocks to State participation are removed, the program can begin to compare favorably with the model State participation program created by the Natural Gas Pipeline Safety Act of 1968.

Recent rail accidents involving hazardous materials, personal injury, and loss of life forced a sudden burst of federal activity. Two days of hearings by the House Commerce Subcommittee on Transportation were followed by hearings by two subcommittees of the Senate Governmental Affairs Committee. The National Transportation Safety Board focused on rail safety issues during three hearing days in April and FRA itself considered pushing up deadlines for installing safety devices on jumbo tank cars. I would only caution that the hearing process is just the beginning. It is not enough to identify agency shortcomings and grapple with the industry's financial constraints.

FRA must work with the States and not continue to discourage them if the agency is truly committed to a cooperative rail safety effort. If increasingly serious train derailments do not force FRA to reevaluate its liaison with State agencies, perhaps Congress can convince FRA to do so.

#### STATE PARTICIPATION AS OF APR. 3, 1978, UNDER FEDERAL RAILROAD SAFETY ACT OF 1970

| State         | Track | Equipment | Qualified/<br>trainee track<br>inspector | Qualified<br>trainee<br>equipment<br>inspector |
|---------------|-------|-----------|------------------------------------------|------------------------------------------------|
| Alabama       | C     | C         | 1/0                                      | 2/0                                            |
| Arizona       | FC    | FC        | 1/0                                      | 1/0                                            |
| Connecticut   | A     |           | 0/1                                      |                                                |
| Illinois      | A     |           | 3/0                                      |                                                |
| Indiana       | A     |           | 1/0                                      |                                                |
| Iowa          | FC    |           | 3/0                                      |                                                |
| Kansas        | A     |           | 0/1                                      |                                                |
| Massachusetts |       | A         |                                          | 1/0                                            |
| Maryland      | A     | FC        | 0/1                                      | 1/0                                            |
| Maine         | A     |           | 0/2                                      |                                                |
| Michigan      | C     |           | 3/0                                      |                                                |
| Minnesota     | A     |           | 2/0                                      |                                                |
| Missouri      | A     |           | 2/0                                      |                                                |
| Nebraska      | A     |           | 1/0                                      |                                                |
| New Hampshire | A     |           | 0/1                                      |                                                |
| New York      | A     | A         | 3/0                                      | 3/0                                            |
| Ohio          | A     | A         | 1/2                                      | 1/0                                            |
| Oregon        | FC    | FC        | 2/0                                      | 1/0                                            |
| Pennsylvania  | C     | FC        | 3/0                                      | 4/0                                            |
| Utah          |       | A         |                                          | 0/1                                            |
| Vermont       | A     |           | 2/0                                      |                                                |
| Washington    | FC    | FC        | 2/0                                      | 2/0                                            |
| West Virginia |       | FC        |                                          | 2/0                                            |
| Total         |       |           | 30/8                                     | 18/1                                           |

#### NOTES

FC—Fully certified, total allocation of inspectors aboard.  
C—Certified, less than full complement, has evidenced intent for FC.  
A—Agreement, token participation no intent for FC.

#### PROPOSED FEDERAL RAILROAD SAFETY IMPROVEMENT ACT

#### JUSTIFICATION

Several years ago, Congress passed the Federal Railroad Safety Act of 1970 to improve the safety performance of the Nation's railroads. The safety record had been worsening throughout the 1960's. To arrest and reverse the trend, Congress determined that national safety standards were needed and that a Federal-State partnership was required to ensure the effective enforcement of forthcoming standards.

Responsibility to implement the provisions of the 1970 Safety Act was delegated by the Secretary of Transportation to the Federal Railroad Administration (FRA). There has been consistent concern on the part of Congress and others about the manner and pace of the implementation of the Act. See, e.g., Report of



the Interstate and Foreign Commerce Committee to accompany H.R. 15223, H.R. Rep. No. 93-1083, 2d Sess. (June 6, 1974).

Because of this concern, Congress required the Secretary, in Section 203 of the Rail Safety Improvement Act of 1974, to prepare a special report on the rail safety program. This report, entitled "Comprehensive Railroad Safety Report," was submitted on March 17, 1976.

The main body of the report relates to a survey made of the States concerning their views on rail safety, on standards prescribed and yet to be prescribed by the FRA, on FRA's implementation of the State participation program set out in section 206 of the 1970 Act, and on other aspects of Federal-State relations in the rail safety area. The views of the National Association of Regulatory Utility Commissioners (NARUC) and other organizations are contained in the Appendix to the report.

From the information and views presented in the report, it seems clear that the Nation's effort to improve rail safety will be significantly facilitated by amending the Federal Railroad Safety Act of 1970 in three respects:

*1. Authorize the States to participate in investigative activities in connection with all rail safety laws and regulations.*

Section 206(a) of the 1970 Act provides, in part, that "A State may participate in carrying out investigative and surveillance activities in connection with any rule . . . prescribed by the Secretary under this title. . . ." The FRA has interpreted this language to mean that the States are not authorized to participate in the enforcement of rail safety laws passed either before (e.g., The Signal Inspection Act) or after (e.g., The Hazardous Materials Transportation Act) the 1970 Act. Such an interpretation unnecessarily reduces the role the States may play in improving rail safety and prevents the States from making maximum use of available manpower. The Act should be amended to authorize the States to participate in the enforcement of all rail safety laws.

*2. Provide for a Railroad Safety Advisory Committee to review, and assist in the development of, safety standards.*

There have been many complaints about the rail safety standards that have been issued to date and the processes that have been used prior to promulgation of standards. The development of future standards will be greatly enhanced if an Advisory Committee, representing a true cross-section of the public interested in rail safety, were established to assist the FRA in this task.

The Advisory Committee would have nine members—2 each from the railroads, the railroad unions, the State commissions engaged in rail safety matters, and the public, with the Federal Railroad Administrator as Chairman. The Committee would review proposed standards and make other recommendations pertaining to rail safety.

*3. Authorize the States to seek injunctive relief in the Federal courts.*

Under present law, the FRA can assess penalties or obtain injunctive relief in Federal courts for violations of safety standards. If the FRA has taken no action on an alleged violation for 90 days, a State may go into Federal court for relief unless the FRA has determined in writing that no violation has occurred.

The State need some independent enforcement authority to support their investigative efforts. The present enforcement mechanism is cumbersome and is not supportive of State efforts to carry out an effective safety program. State inspectors are frequently treated with less respect than is due to them because the railroads know that, for all practical purposes, no violations will be enforced unless the Federal government pursues the matter.

This weakness in the present law should be corrected by an amendment which would authorize participating State agencies to seek direct injunctive relief in Federal courts.

Adoption of the following Act will amend the Federal Railroad Safety Act of 1970 to accomplish the three goals described above.

TEXT—A BILL

To amend the Federal Railroad Safety Act of 1970, as amended, to clarify and strengthen the role of the States in promoting safety on the Nation's railroads; and for other purposes.



*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the Federal Railroad Safety Act of 1970 be amended as follows:*

#### ADVISORY COMMITTEE

Sec. 1. Subsection (g) is added to Section 202 as follows:

"(1) The Secretary shall establish a Railroad Safety Advisory Committee to advise, consult with and make recommendations to the Department concerning railroad safety. The Committee shall consist of the Federal Railroad Administrator, who shall be chairman, and eight members appointed by the Secretary as follows: two public members, two members from railroad management, two members from railroad labor organizations, and two State commissioners engaged in railroad safety regulation selected after consultation with the national organization of the State commissions referred to in sections 202(b) and 205(f) of the Interstate Commerce Act, as amended. Members shall be appointed by the Secretary for a term not to exceed three years. Members of the Committee, other than those regularly employed by the Federal Government, may be compensated in accordance with the provisions of section 9 of the Department of Transportation Act (80 Stat. 931, 944). Service under this section shall not render such appointed members of the Committee employees or officials of the United States for any purpose. All proceedings of the Committee shall be subject to applicable provisions of the Federal Advisory Committee Act, P.L. 92-463, 86 Stat. 770, 5 U.S.C., App. 1.

"(2) The Secretary shall prior to publication submit to the Committee all proposed rules, regulations, and standards, and amendments or repeals thereof, and afford such Committee a reasonable opportunity, not to exceed ninety days unless extended by the Secretary, to submit a report on the necessity, technical feasibility, reasonableness, and practicability of such proposal. Each report by the Committee shall be included in the record of any proceeding that may be held on such proposal. In the event that the Secretary rejects the conclusions of the majority of the Committee, he shall not be bound by such conclusions but shall publish his reasons for rejection thereof."

#### PARTICIPATION BY STATES IN INVESTIGATIVE ACTIVITIES IN CONNECTION WITH ALL RAIL SAFETY MATTERS

Sec. 2. Subsection (g) is added to Section 206 as follows:

"Notwithstanding any other provision in this title or any other law pertaining to railroad safety, a State agency may also participate, in the manner prescribed in this section, in carrying out investigative and surveillance activities in connection with railroad safety laws and regulations in effect on the date of enactment of this title or made effective subsequent to the date of enactment of this title."

#### STATE AUTHORITY TO OBTAIN INJUNCTIVE RELIEF IN FEDERAL COURTS

Sec. 3(a). The final sentence of Section 206(a) is amended to read as follows: "The Secretary shall retain the exclusive authority to assess and compromise penalties (except as otherwise provided by section 207 of this title) for the violation of rules, regulations, orders and standards prescribed by the Secretary under section 202(a) of this title and to recommend appropriate action as provided by section 209 of this title."

Sec. 3(b). Section 207 is amended to read:

"(a) In any case in which the Secretary has failed to assess the civil penalty applicable under section 209 of this title with respect to a violation of any railroad safety rule, regulation, order, or standard issued under this title, or otherwise required by law, within 90 days after the date on which such violation occurred, a State agency participating in investigative and surveillance activities under the provisions of section 206 of this title within the State where the violation occurred, may apply to the district court of the United States within the jurisdiction of which the violation occurred for the assessment and collection of the civil penalty included in or made applicable to such rule, regulation, order, or standard. The provisions of this section shall not apply in any case in which the Secretary has affirmatively determined, in writing, that no violation has occurred.



"(b) A State agency participating in investigative and surveillance activities under the provisions of section 206 of this title may, with respect to a violation that occurred within the State of any railroad safety rule, regulation, order, or standard issued under this title, or otherwise required by law, apply to the district court of the United States within the jurisdiction in which the violation occurred for injunctive relief to restrain further violation hereof or to enjoin compliance therewith."

Senator LONG. Next we will call on Mr. Paul Daughdrill of Lexington, Miss.

#### STATEMENT OF PAUL DAUGHDRILL, LEXINGTON, MISS.

Mr. DAUGHDRILL. Good morning, Mr. Chairman.

Mr. Chairman, we've had a lot of past relations in the past together and a lot of fond memories.

I noticed a smile came over your face right then when Mr. Rodgers mentioned a particular name, and who was a great Governor and a great Senator. And you're keeping the tradition going. And everybody in south Mississippi and Louisiana still loves the progress that was made in the early years. And you can ride through Louisiana and still see the fruit.

It is certainly a pleasure and a privilege this morning to appear before your committee, Mr. Chairman.

My name is Paul Daughdrill, and I'm from Lexington, Miss. I am a retired railroad conductor, for over 35 years operating in Louisiana and Mississippi, from New Orleans, La., and occasionally, when we would have a derailment, we would detour through Baton Rouge.

And people in Mississippi are very much concerned about these recent train derailments, and just not now are we becoming concerned; we have been having these unsafe conditions for several years.

And my Governor and Senator Eastland and Senator Stennis and Congressman Montgomery and the entire Public Service Commission of Mississippi has been interested in getting me to come to Washington to testify, with my years of experience in handling safety matters for the workingman.

I had the privilege of having my files entered into Congressman Rooney's hearings that he held on the 15th and 16th, and also I testified before Mr. King's hearings at the National Transportation Safety Board on the 6th. And I'm certainly happy to be here with you today.

I did not get any of this or acquire any of my knowledge from the University of Mississippi or the University of Louisiana, LSU, or some seminar or some testing facilities. This is from firsthand experience, Mr. Chairman, of handling safety matters and working on the railroad as a railroad conductor.

Now, I understand the hazardous conditions that we are confronted with each day as citizens of the State and of the United States. I have come before your Subcommittee on Surface Transportation in regard to train derailments, railroad safety equipment, unsafe roadbeds, lack of maintenance, and in addition, I disagree with the gentleman who preceded me who talked about the accidents and injuries and deaths, because we do have a hazardous job out there.

I don't work on the railroad any more. I'm not on anyone's payroll any more. I'm a private citizen.



But freight trains are much too long, which create a safety hazard. The jumbo tank cars are too long and heavy. The bulk and weight make it almost impossible for them to turn sharp curves without jumping the track. In my years of experience they have jumped the track. They're just too long to make a sharp curve. They're not safe. There are too many pounds in those cars.

All of this and other factors are increasing the risk of train derailment.

Mississippi has track inspectors under State law that work under the Public Service Commission, and they do a wonderful job, but they are not funded enough by the State. But certainly I would like to see the Federal Government give the States a little assistance in hiring more State inspectors. Both the State and the Federal rail inspectors are doing a good job, but they are underfunded, and they need more funds to do a more adequate job.

Of course, I'm very much interested in Amtrak. I was a passenger conductor on Amtrak before I retired, and Amtrak is an asset to our Nation. And I feel that we should look into it more and fund it more and keep more trains on, because the day is coming, Mr. Chairman, that we're going to need more trains to handle the passengers and get them off the highways. We can't build the highways fast enough.

I would like to summarize my testimony before you this morning, and I request that my entire statement be entered into the record of these hearings. My testimony shall be in regards to the many train derailments in the area because of unsafe train wheels, roadbeds, rails, ties, and tank cars transporting dangerous chemicals and other poisonous chemical substances.

The dangerous conditions of the railroads have caused me and all the people in my State much alarm through the past years. I have served as a conductor for more than 35 years with the Illinois Central Gulf Railroad and have many occasions to walk and inspect the tracks. I have firsthand knowledge concerning the dangerous conditions involving major carriers.

I have in my files, which I have furnished you with—I have in my files several copies of correspondence exchanged with the officers of the Illinois Central Gulf Railroad in 1969, 1973, 1974, wherein I repeat the request that the railroads correct hazardous tracks and other dangerous conditions, emphasizing the very dangerous commodities handled on the trains.

I have been a local chairman and legislative representative and delegate and committeeman for the International Transportation Union for many years. I've personally made many walking tours inspecting the railroad tracks, ties, and roadbeds throughout Mississippi and also in Louisiana.

Over the past years I've reported to the same proper officials. I feel that the existing dangerous conditions are the result of poor maintenance of tracks and roadbeds and in the use of unsafe equipment, such as bad wheels and other unsafe tank cars.

The congressional committee—now, the reason I'm making this statement, Mr. Chairman, back in World War II I feel that the American Association of Railroads feathered their pocketbooks, and they had so much money they did not know what to do with it, and so they spent it somewhere else besides on the roadbeds.



The congressional committees should take action to appoint a reliable accounting firm to audit the American Association of Railroads to determine if the companies are applying a reasonable amount of their profits toward maintenance of the track, roadbed, and purchasing of new safety equipment.

I feel that the railroads have been using their profit to invest in other industries, such as buying outside industries. I feel if they had got started somewhere in the late 1940's or the early 1950's when they started doing this, and I think they are paying for it now. And any time we get in trouble, we pay for it later. And I believe that is what they did.

We have had several bad train derailments in our area, including the one at Laurel, Miss., about 10 years ago, and I furnished your committee with copies of the findings of the National Transportation Safety Board and of the Public Service Commission.

And that has been 10 years ago, Mr. Chairman, and we are still having serious train derailments. And I applaud you for your statement you made earlier in this hearing this morning, that the Congress had been able to do its part, but the Federal agencies haven't been doing theirs. The money has been appropriated, but they are not carrying it out for some reason or another.

And, of course, my testimony will be for the benefit of the trainmen that operate the trains and for the welfare and safety of my fellow Mississippians, and I certainly appreciate the opportunity to testify before your committee at this hearing, and hope that my testimony will be of assistance to you.

And I would like to digress just a minute, Mr. Chairman. You mentioned that you recalled you and I being together. You remember, we used to have a Derby Special out of New Orleans to Louisville, and it is coming up in a few days. And I had the pleasure of you riding with me, and we discussed legislation on the back end of the train.

But I wanted to tell you and explain to you that you can't have a smooth ride in those pullman cars now. We had good roadbeds back then, and I'm sorry to say that we don't have them now, and I'm afraid you would be disappointed if we had the special now.

And I have made my testimony brief, and I would like it to be entered into your record of your hearing.

And I want to commend you again for holding these hearings and showing your interest and trying to do something for the citizens of Louisiana and Mississippi and of the United States.

Again, I will say one more time, that the name Long is very famous and fond in the homes of Mississippians and Louisianians, and it has been over the United States. And I'm very proud of the record of my Senators, because I still claim you as my Senator.

[The statement follows:]

#### STATEMENT OF PAUL DAUGHDRILL<sup>1</sup>

Mr. Chairman, my name is Paul Daughdrill and I am former vice chairman of the Mississippi State Legislative Board of the United Transportation Union.

<sup>1</sup> Mr. Daughdrill, of Lexington, Mississippi, has had more than 35 years experience working for the railroad and handling safety legislation. Governor Finch, Senators Eastland and Stennis, Congressman Montgomery, Public Service Commissioners Norman Johnson and John L. Dale, and Senator Russell B. Long have requested Mr. Daughdrill to appear before the Subcommittee on Surface Transportation based on his wide experience and understanding of the safety needs of trainmen and citizens of Mississippi. Mr. Daughdrill has been a representative of the United Transportation Union for years.



I would like to summarize my testimony before you this morning and I request that my entire statement be entered into the record of these hearings.

My testimony shall be in regard to the many train derailments in our area because of unsafe train wheels, roadbeds, rails, ties and tank cars transporting dangerous petro-chemical and other poisonous chemical substances.

The dangerous condition of the railroads have caused me much alarm through the past years. I served as a conductor for more than 35 years with the Illinois Central Gulf Railroad and had many occasions to walk and inspect the tracks. I have first-hand knowledge concerning the dangerous conditions involving the major carriers. I have in my file several copies of correspondence exchanged with the division offices of the Illinois Central Gulf Railroad in 1969, 1973, and 1974, wherein I repeatedly requested that the railroad correct hazardous tracks and other dangerous conditions emphasizing the very dangerous commodities on the trains.

I have been a local chairman, legislative representative, delegate and committeeman for the International United Transportation Union for many years. I have personally made many walking tours inspecting the railroad tracks, ties and roadbeds throughout Mississippi over the past years and reporting the same to the proper officials. I feel that the existing dangerous conditions are a result of poor maintenance of tracks and roadbeds and the use of unsafe equipment such as bad wheels and unsafe tank cars.

The congressional committees should take action to appoint a reliable accounting firm to audit the American Association of Railroads to determine if the companies are applying a reasonable amount of their profits toward maintenance of the tracks, roadbeds and purchase of new safety equipment. I feel that the railroads have been using their profits to invest in other interests.

Congressman Fred B. Rooney, chairman of Transportation and Commerce Committee, held hearings on March 15 and 16, 1978, regarding the various train derailments in our area. He requested that I supply his committee with a copy of my files and they would enter it into the Congressional Record of the hearings.

We have had several bad train derailments in our area, including the one at Laurel, Mississippi, about ten years ago, wherein thousands of dollars in railroad property, homes and other personal property were destroyed. My testimony will be for the benefit of the trainmen that operate the trains and for the welfare and safety of my fellow Mississippians.

I appreciate this opportunity to testify before your committee at this hearing and hope that my testimony will be of assistance to you.

Senator Long. Thank you very much, Mr. Daughdrill. We appreciate it.

That concludes this hearing.

[The following information was subsequently received for the record:]

LEXINGTON, MISS., April 24, 1978.

Hon. RUSSELL B. LONG,

*Russell Senate Office Building, Washington, D.C.*

MR. CHAIRMAN: I am honored to have had the opportunity to appear before your committee on April 21, 1978, to discuss the importance of rail safety. However, due to the time limitation, I feel there was a very important aspect of the rail safety issue that I failed to mention in my testimony.

I would like to bring to your attention a few facts on the Federal Railroad Administration testimony. Congress has appropriated the funds and authorized the manpower for additional inspectors. Citizens and railroad employees are appealing for safer railroads and better work environments. However, the F. R. A. is ignoring these pleas by failing to take any action toward enforcing these laws.

Also, I would like to comment on the testimony of the Association of American Railroads. In consideration of my 35 years of work experience and handling railroad safety legislation, I must disagree with their statements on train length, size, and weight. Also, I question their testimony regarding rail accidents and designated terminals.

I would also like to remind you that we are in desperate need of more Amtrak trains and funds to keep our present Amtrak systems working.

I would like to request that this letter be entered into the file with the entire record of the hearing of April 21, 1978. My testimony is for the benefit of my fellow Mississippians and Louisianians and safer railroads for all America.

Sincerely,

PAUL D. DAUGHDRILL.



NATIONAL TRANSPORTATION SAFETY BOARD,  
Washington, D.C., April 18, 1978.

Mr. PAUL D. DAUGHRILL,  
Post Office Box 690, Lexington, Miss.

DEAR MR. DAUGHRILL: The recently concluded National Transportation Safety Board hearing on derailments and carriage of hazardous materials was most successful. We anticipate that much improvement in the level of safety afforded to the public and employees of the rail industry will result from this effort.

The Safety Board thanks you for giving the time to help us better understand the concerns of all interests. Your testimony was a most valuable contribution to the hearing. It will assist the Board to develop appropriate recommendations to effect changes necessary for improving the safety of transporting the numerous hazardous materials essential to our Nation's industries.

I just wanted to take this opportunity to thank you for your participation. It was not an "easy" hearing but it is our hope that people at all levels will be better served because of it.

Sincerely,

JAMES B. KING, *Chairman.*

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,  
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,  
Washington, D.C., April 14, 1978.

HON. GILLESPIE V. MONTGOMERY,  
U.S. House of Representatives,  
Washington, D.C.

DEAR SONNY: Thank you for your letter of April 6, 1978, in which you enclose copies of Mr. Paul Daughdrill's statement on rail safety.

I shall, of course, be pleased to include Mr. Daughdrill's testimony in the hearing record.

With best wishes,

Sincerely,

FRED B. ROONEY,  
*Chairman, Subcommittee on Transportation and Commerce.*

[Whereupon, at 11:30 a.m., the subcommittee adjourned, subject to the call of the Chair.]

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