

and Foreign Commerce Subcommittee on Transportation and Commerce

FEDERAL RAILROAD SAFETY AUTHORIZATION ACT OF 1976

HEARINGS
BEFORE THE
SUBCOMMITTEE ON
TRANSPORTATION AND COMMERCE
OF THE
COMMITTEE ON
INTERSTATE AND FOREIGN COMMERCE
HOUSE OF REPRESENTATIVES
NINETY-FOURTH CONGRESS

4 - APR 20
1976

SECOND SESSION

ON

H.R. 11804 and H.R. 11837

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

FEBRUARY 24, 25, AND 26, 1976

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Lyon, Carl V., senior vice president.

Florida East Coast Railway Co., W. L. Thornton, president.

Missouri-Pacific System, John G. German, vice president-engineering.

National Association of Regulatory Utility Commissioners:

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National Transportation Safety Board:

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Puls, Fritz L., General Counsel.

Styles, Thomas DeW., Chief, Railroad Safety Division.

Todd, Webster B., Jr., Chairman.

Wakeland, Henry H., Director, Bureau of Surface Transportation Safety.

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Wilson, W. Roy, alternate national legislative director, United Transportation Union.

Southern Railway Co., Harold H. Hall, vice president—transportation.

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Bennett, Donald, Chief Counsel, Federal Railroad Administration.

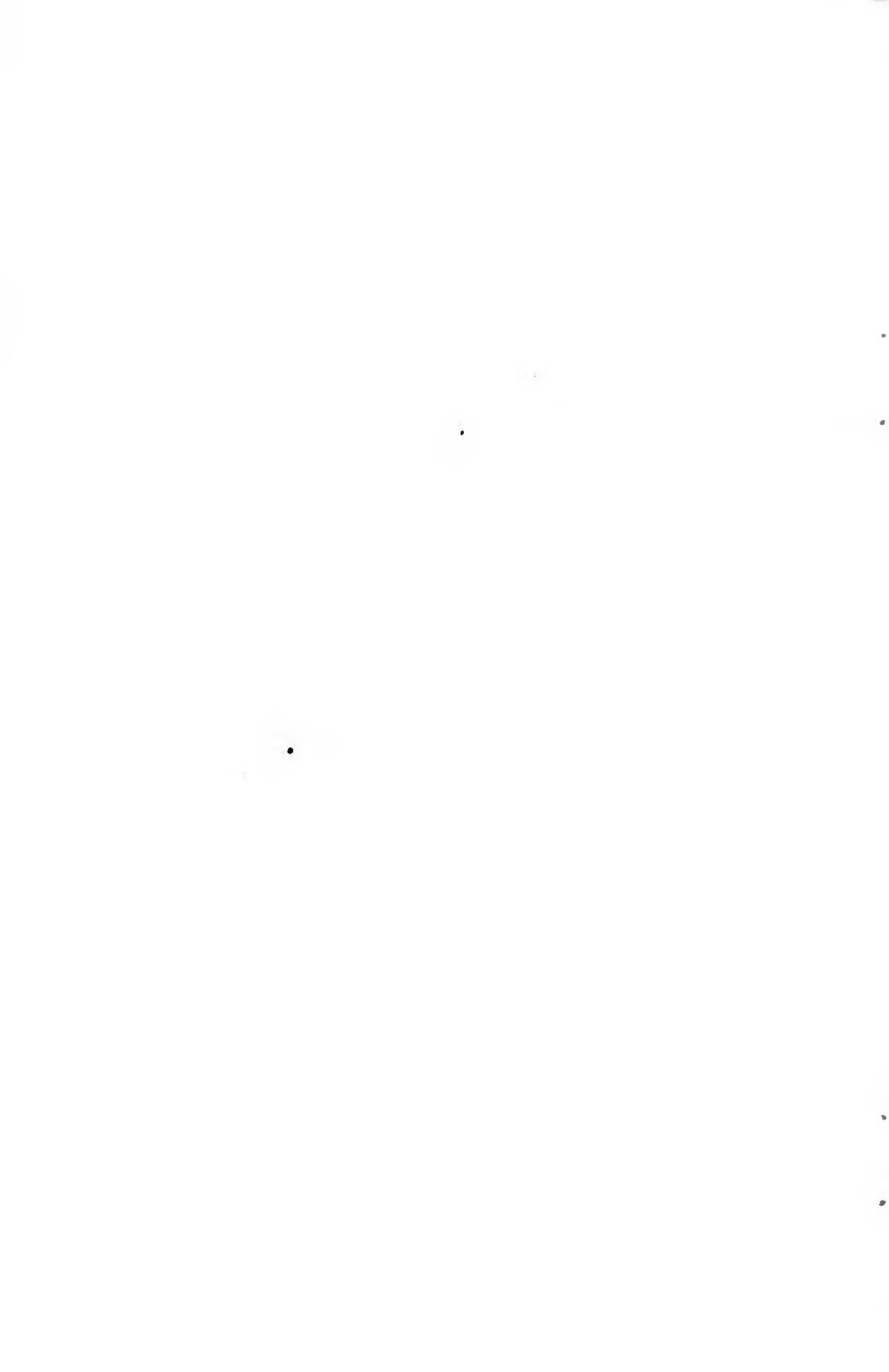
Curtis, James T., Jr., Director, Materials Transportation Bureau.

Flohr, Bruce M., Deputy Administrator, Federal Railroad Administration.

Hall, Asaph H., Administrator, Federal Railroad Administration.

Santman, Leon D., Assistant General Counsel for Materials Transportation Law.

Wright, Robert, Acting Associate Administrator for Safety.



FEDERAL RAILROAD SAFETY AUTHORIZATION ACT OF 1976

TUESDAY, FEBRUARY 24, 1976

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to notice, in room 2218, Rayburn House Office Building, Hon. Fred B. Rooney, chairman, presiding.

Mr. ROONEY. The subcommittee will come to order.

Today we are opening hearings on two bills amending the Federal Railroad Safety Act of 1970 to authorize additional appropriations for railroad safety programs.

The first bill is H.R. 11804, introduced by Chairman Staggers. This bill authorizes additional appropriations for the fiscal year ending September 30, 1977, at the same level of funding authorized under existing law for the current fiscal year. It also makes specific allocations of funds for safety inspectors, State safety programs, administrative expenses, and research and development activities.

The second bill is H.R. 11837, introduced by Chairman Staggers, for himself and Mr. Devine, by request. This is the administration bill. It authorizes the same total funding, but the authorization continues for 2 years and it also removes all specific allocations for things like safety inspectors and State safety programs. In addition, it removes from existing law the limitation on the expenditure of funds for research to the total amount spent on safety inspection activities.

Last year the administration requested a permanent open-ended authorization for railroad safety programs. I am pleased to note that the administration request this year appears to be a more tenable negotiating position than last year.

In the course of these hearings, the subcommittee will also look at related areas that we cannot, and should not, consider separately from railroad safety; namely, the transportation of hazardous materials by railroad and the activities of the National Transportation Safety Board with respect to railroad accidents.

After spending most of the past year in the development of the Railroad Revitalization and Regulatory Reform Act of 1976, we all know that the railroads have experienced serious financial difficulties and that they are not out of the woods yet. What concerns me most is that railroad safety may suffer in the face of these financial difficulties.

I feel very strongly that railroad safety must remain a continuing concern of all parties involved. The Congress has indicated its intention to assure that rail safety programs are adequately funded. The administration must assure us that there will be adequate implementation and enforcement of safety regulations. The rail industry itself must be convinced that railroad safety is cost-effective. We need everybody working together to reach the goal of improved railroad safety.

We will include in the record at this point the bills under consideration.

[The text of H.R. 11804 and H.R. 11837 follows:]

94TH CONGRESS
2^D SESSION

H. R. 11804

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 9, 1976

Mr. STAGGERS introduced the following bill; which was referred to the Committee on Interstate and Foreign Commerce

A BILL

To amend the Federal Railroad Safety Act of 1970 to authorize additional appropriations, 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 "Federal Railroad Safety
4 Authorization Act of 1976".

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

8 "SEC. 212. AUTHORIZATION FOR APPROPRIATIONS.

9 "(a) There are authorized to be appropriated to carry
10 out the provisions of this title not to exceed \$35,000,000 for
11 the fiscal year ending September 30, 1977.

1 “(b) Except as provided in subsection (c) of this sec-
2 tion, amounts appropriated under subsection (a) of this sec-
3 tion shall be available for expenditure as follows:

4 “(1) not to exceed \$18,000,000 for the Office of
5 Safety, including salaries and expenses for not more
6 than (A) five hundred safety inspectors, (B) forty-five
7 signal and train control inspectors, and (C) 110 clerical
8 personnel;

9 “(2) not to exceed \$3,500,000 to carry out the
10 provisions of section 206 (d) of this Act;

11 “(3) not to exceed \$3,500,000 for the Federal
12 Railroad Administration, for salaries and expenses not
13 otherwise provided for; and

14 “(4) not to exceed \$10,000,000 for conducting
15 research and development activities under this Act.

16 “(c) The aggregate of the amounts obligated and ex-
17 pended for research and development in the fiscal year end-
18 ing September 30, 1977, shall not exceed the aggregate of
19 the amounts expended for rail inspection and for the in-
20 vestigation and enforcement of railroad safety rules, regula-
21 tions, orders, and standards under this Act in the same fiscal
22 year.”.

23 SEC. 3. (a) Section 6 of the Act of March 2, 1893 (45
24 U.S.C. 6), is amended by striking out “\$250” and inserting

1 in lieu thereof "not less than \$500 and not more than
2 \$5,000".

3 (b) Section 4 of the Act of April 14, 1910 (45 U.S.C.
4 18) is amended by striking out "\$250" and inserting in lieu
5 thereof "not less than \$500 and not more than \$5,000".

6 (c) Section 3 of the Act of May 30, 1908 (45 U.S.C.
7 18) is amended by striking out "\$200" and inserting in lieu
8 thereof "not less than \$500 and not more than \$5,000".

9 (d) Section 9 of the Act of February 17, 1911 (45
10 U.S.C. 34) is amended by striking out "\$250" and inserting
11 in lieu thereof "not less than \$500 and not more than
12 \$5,000".

13 (e) Section 25 (h) of the Interstate Commerce Act (49
14 U.S.C. 25 (h)) is amended by striking out "\$100 for each
15 such violation and \$100" and inserting in lieu thereof "not
16 less than \$500 and not more than \$5,000 for each such
17 violation and not less than \$500 and not more than \$5,000".

18 (f) Section 209 (b) of the Federal Railroad Safety Act
19 of 1970 (45 U.S.C. 438 (b)) is amended by striking out
20 "\$250 nor more than \$2,500" and inserting in lieu thereof
21 "\$500 and not more than \$5,000".

22 SEC. 4. Section 2 (a) of the Act of March 4, 1907
23 (45 U.S.C. 62 (a)), is amended—

1 (1) by striking out "or" at the end of paragraph
2 (1);

3 (2) by striking out the period at the end of para-
4 graph (2) and inserting in lieu thereof "; or"; and

5 (3) by adding at the end thereof the following new
6 paragraph:

7 “(3) not to provide employees with sleeping quar-
8 ters, including crew quarters, camp or bunk cars, and
9 trailers, which (A) provide employees with an op-
10 portunity for uninterrupted rest in quarters having con-
11 trolled temperatures, and (B) are located away from a
12 yard where switching or humping is performed.”.

13 SEC. 5. Section 2 (c) of the Act of March 4, 1907
14 (45 U.S.C. 62 (c)), is amended to read as follows:

15 “(c) The provisions of this Act shall not apply to the
16 members of crews of wreck or relief trains whenever an
17 actual emergency exists and work of the crew is related to
18 such emergency, except that in any event it shall be unlaw-
19 ful for crew members of wreck or relief trains to be required
20 or permitted to work more than sixteen consecutive hours
21 in any twenty-four-hour period. For the purpose of this
22 paragraph, an emergency ceases to exist when the track is
23 cleared and the line is open for traffic.”.

24 SEC. 6. Section 202 of the Federal Railroad Safety Act

1 of 1970 (45 U.S.C. 431) is amended by adding at the end
2 thereof the following new subsections:

3 “(g) Notwithstanding any provision of law or regula-
4 tion to the contrary, the following requirements shall be ap-
5 plicable for purposes of providing protection against following
6 and opposing trains:

7 “(1) Whenever a train stops under circumstances
8 in which such train may be overtaken by another train,
9 protection by means of flagging shall be provided by a
10 member of the crew. To provide such protection, such
11 a crew member shall, at a sufficient distance from the
12 stopped train to assure full protection (A) place two
13 torpedoes on the track, and (B) whenever necessary,
14 display lighted fuses. In providing such protection, such
15 crew member shall carry a red flag by day and a red or
16 white light, or both, at night.

17 “(2) Upon being recalled and whenever safety
18 to the train permits, such crew member may return to
19 the train.

20 “(3) Whenever conditions require, such crew mem-
21 ber shall leave such torpedoes and a lighted fusee.

22 “(4) The front of such train shall be protected in
23 the same way, whenever necessary, by a member of the
24 crew.

1 “(5) Whenever a train is moving under circum-
2 stances in which it may be overtaken by another train,
3 a member of the crew shall take such action as may be
4 necessary to insure full protection. By night (or by day,
5 if the view is obscured), lighted fusees shall be dropped
6 from the moving train or displayed at proper intervals.

7 “(6) Whenever day signals cannot be plainly seen,
8 because of weather or other conditions, night signals
9 shall also be used.

10 “(7) Whenever a pusher engine is assisting a train,
11 coupled behind the cabin or caboose car, and the mem-
12 ber of the crew who protects the rear end of such train
13 is riding in the cabin or caboose car, the requirements
14 with respect to fusees may be met by dropping such fusee
15 between the cabin or caboose car and the pusher engine
16 on the track such train is using, and not between such
17 track and an adjacent track.

18 “(h) Notwithstanding any provision of law or regulation
19 to the contrary, the following protection shall be provided
20 for all employees working on, under, or about an engine, car,
21 or train:

22 “(1) A blue signal, displayed at both ends of an
23 engine, car, or train shall indicate that workmen are
24 under or about such engine, car, or train. Whenever an
25 engine, car, or train is protected by such a blue signal,

1 it shall not be coupled to or moved. Each class of work-
2 men shall display the blue signals and the same workmen
3 are alone authorized to remove such signals. Other equip-
4 ment shall not be placed on the same track so as to
5 obstruct the view of the blue signals.

6 “(2) Blue signals shall consist of a blue light by
7 night and a blue flag or marker by day.

8 “(3) Whenever emergency repair work is done
9 under or about an engine or car in a train and a blue
10 signal is not available, the engineman shall be notified
11 and protection shall be given to those persons engaged
12 in making repairs.

13 “(4) Workmen shall not work under or about cars
14 being switched into a hump yard track or any other track
15 until they are notified by the hump operator or person
16 controlling the switching that no more cars will enter
17 the track and that switches have been locked against
18 movement onto the track by warning shields or padlocks.

19 “(5) In the case of manual switches, locks may be
20 applied by switchmen or road crewmen bringing the
21 engine to the train. The hump operator may apply
22 a protective shield to a remotely controlled switch and
23 remove it after work is completed and the blue signals
24 are removed.

Mr. ROONEY. Our first witness this afternoon will be Mr. Asaph Hall, the Federal Railroad Administrator.

Mr. Hall, if you will please identify your colleagues and indicate how you wish to proceed we will be happy to receive your testimony now.

STATEMENT OF ASAPH H. HALL, ADMINISTRATOR, FEDERAL RAILROAD ADMINISTRATION, DEPARTMENT OF TRANSPORTATION, ACCOMPANIED BY BRUCE M. FLOHR, DEPUTY ADMINISTRATOR; DONALD BENNETT, CHIEF COUNSEL; AND ROBERT WRIGHT, ACTING ASSOCIATE ADMINISTRATOR FOR SAFETY

Mr. HALL. On my far right is Mr. Robert Wright, who is Acting Associate Administrator for Safety. On my right is Mr. Donald Bennett, who is our Chief Counsel. On my left is Mr. Bruce Flohr, the Deputy Administrator of FRA.

Mr. Chairman, since I have a rather lengthy statement I would request that the entire statement be placed in the record and I will attempt to summarize only the highlights of that statement.

Mr. ROONEY. Without objection [see p. 22].

Mr. HALL. I am pleased to appear before your subcommittee, Mr. Chairman, to discuss this extremely important subject of railroad safety and the Department's proposal, H.R. 11837, to amend the Federal Railroad Safety Act of 1970 to authorize additional appropriations.

The Department's proposal would authorize appropriations for fiscal years 1977 and 1978 to enable the Federal Railroad Administration to continue its efforts to promote a higher level of safety on our Nation's railroads.

At this point, Mr. Chairman, I would like to enter for the record a requested amendment to our proposal which we will be submitting officially to the committee.

Mr. ROONEY. Without objection.

SUGGESTED AMENDMENT

Mr. HALL. I will read it for the record.

In order to maintain the continuity of FRA programs, including the test vehicles, we request that H.R. 11837 be amended by striking out the period at the end of Section 212 and inserting "of which such amounts as are appropriated for inspection vehicles, for research and development, and for carrying out the provisions of Section 206(d) of this Act are authorized to be made available until expended."

We will provide justification for that change but what it basically is intended to do is to allow those particular authorizations to go beyond the specific fiscal year, fiscal 1977.

[The following information was received for the record:]

**JUSTIFICATION AND EXPLANATION OF AMENDMENT TO SECTION 212 OF
H.R. 11837**

MEMO FROM FRA ADMINISTRATOR TO CHAIRMAN ROONEY

During my testimony before your subcommittee on February 24, I asked that Section 212 of the Administration Bill (H.R. 11837) be amended to authorize

certain portions of the Safety appropriations of the Federal Railroad Administration to be available until expended. This is necessary because otherwise, under House Rule 21, Clause 2, the Department of Transportation 1977 Appropriation Bill would be subject to a point of order.

The following three appropriations are affected by this request :

Railroad Safety

This appropriation, which has heretofore been an annual appropriation, provides for the salaries and related expense of FRA safety inspectors and Regional and Headquarters staff. Beginning in 1976 it also finances procurement of track inspection vehicles. Because procurement of capital equipment is a lengthy process, both in initial contract award and follow-on charge orders, virtually all capital programs are available for more than one year. The language requested will apply only to that portion of the appropriation applicable to the test vehicles (\$5 million in 1977); the remainder of the appropriation will be an annual appropriation.

Railroad Research and Development

Safety activities comprise a relatively small share (about 15%) of FRA's total R&D appropriation, which, like all R&D appropriations in DOT are primarily contract research and have regularly been appropriated as available until expended without challenge. Because H.R. 11837 provides a lump sum authorization for all safety activities, however, it is considered advisable to identify all portions authorized to be available until expended if any one is identified. Otherwise it might be implied that the portions not so identified are intended to be annual appropriations.

Grants-in-Aid for Railroad Safety

This activity is identified in H.R. 11837 as funds "for carrying out the provisions of Section 206(d) of this act." Because of the wording of 206(d), appropriations under this head are actually made each year to cover state expenditures incurred during the ensuing year. These commitments are further conditional on states' meeting certain conditions and qualifying for specific certifications. Because of the uncertainties surrounding the timing of these actions by the states (which are not within FRA control) and because of the built-in one year delay, it is essential that the funds be appropriated as available until expended.

The appropriation language proposed for all three of the aforementioned accounts as shown in the Budget of the U.S. Government (Appendix) for 1977 includes the requisite wording to make these funds available until expended.

Mr. HALL. I would like to take a couple of minutes, Mr. Chairman, to run through the current trends in the railroad safety activity, and then I will highlight a few portions of my statement.

Based on preliminary figures for 1975 and the adjusted figures for 1974, that is, damage above \$1,750, the rate of increase in train accidents continued to decline in 1975. The percentage increase for 1975 over 1974 was only about one-half of 1 percent. This compares to the increase in 1974 over 1973 of about 19 percent, and the increase in 1973 over 1972 of about 29 percent. So we are making progress in that particular area.

Employee fatalities were down 17.1 percent from 140 in 1974 to 116 in 1975. Fatalities at grade crossings declined by about 26 percent from 1,220 to 902.

The final 1974 accident and casualty figures compared with our preliminary figures for calendar 1975 are summarized in attachment 1 to my statement [see p. 31].

In the enforcement area, FRA safety inspectors increased their inspection efforts during calendar 1975. During the first 10 months of 1975 Federal and State inspectors made over 3,600 inspections of 108,000 miles of track, which is nearly one-third of the total track miles in the United States.

During 1975, we made about 8,300 inspections for our new equipment standards, and 3,800 hazardous materials inspections. Safety appliance inspections were made representing approximately 87 percent of the total locomotive fleet and 22 percent of the total car fleet. We have attached a complete summary in attachment 2 to my statement [see p. 32].

During fiscal year 1975, FRA transmitted over 8,400 claims totaling about \$2.7 million for alleged rail safety violations. A total of \$797,000 was collected for 4,788 claims. For the first half of fiscal year 1976, that is, the last 6-month period, FRA settled over 2,000 claims for over \$500,000. The figures for claims transmitted during this 6-month period are not yet available. We have again summarized the entire claim picture in attachment 3 [see p. 34].

Now, I would like to address some of the major actions we have taken during the last year.

Over the last year, additional actions taken by FRA under section 203 of the 1970 act have resulted in furthering railroad safety. Emergency order No. 5 prohibited the free rolling switching of certain tank cars filled with high pressure compressed gas. We have experienced no fires and no explosions in these cars through switching accidents since the order was placed in force in late 1974. I believe this is a good case, where positive action produced positive results.

Last year, we published a notice advising that we intended to delegate additional enforcement powers to inspectors and certified State inspectors. These additional powers will enable FRA and participating State inspectors to: (1) Control certain serious hazards by requiring that proper repairs be made before unsafe railroad cars are returned to service; and (2) reduce risks created by operation at excessive speed over deficient track by reducing that track in class. Rule-making procedures have been completed and a final rule will be issued shortly.

The State program I will discuss a little bit later, but we now have 12 States participating in the rail safety program under section 206 of the 1970 act with a total of 22 State inspectors. We are also reviewing applications for four more States that soon will be entering the program, and we have expressions of interest from five more States in addition and we hope to have them on board very soon.

As a result of discussions and several meetings with NARUC, the FRA issued revised State participation regulations in November 1975. I believe these regulations, which I will not elaborate on here, have served to open up the program. We hope to allow the States actively to come in at a faster rate. We are setting up both on-the-job and classroom training to allow States to bring in inspectors at the trainee level and then upgrade them to the full journeyman level. We hope that this will have a most beneficial effect on bringing onboard more State inspectors.

We have also opened the program to our freight car standards in addition to the track inspection work, and we hope that that will also provide another avenue for State entrance into the program.

Another promising aspect of our enforcement effort is our automated track inspection program which provides FRA with an automated track inspection capability. FRA currently has a single

track geometry measuring vehicle which has been used as both a research device and as a safety enforcement tool. Using the technology developed in our R. & D. program, two additional FRA track inspection vehicles are now being fabricated this year and a fourth system will be completed in fiscal year 1977. The three new systems will be used solely for enforcing track safety standards, and the existing system will be used part time for this purpose and part time for R. & D.

Approximately 90,000 miles of track will be inspected during fiscal year 1977, and the total is expected to rise rapidly thereafter.

Automated track inspection cars can provide the larger data base required for more effective safety enforcement with essentially 100 percent track geometry inspection coverage of all passenger train routes and a large sampling of mainline freight routes.

In addition, rail flaw detection equipment on one of the vehicles will provide the track inspection with a statistically significant sample of internal rail defects.

I will not elaborate on the section in my statement on safety research and development except to say that over the past year we have made a significant effort, and I believe a successful effort, in turning the emphasis of that R. & D. program to one of near-term real life problems in safety in the railroad industry. The large emphasis in this area has been put, therefore, on safety. We are looking at various programs in conjunction with our R. & D. office and our office of safety to determine areas where in fact R. & D. can produce near-term solutions to safety programs.

I would mention only one in passing which I think is perhaps the most significant R. & D. program in this area that we have initiated in fiscal year 1976. This is the construction of what we call the facility for accelerated service test, or FAST, which was begun at our Transportation Service Test Center in Pueblo, Colo. The facility will be used to provide safety life cycle data in a compressed time period virtually by continuous operation of a test train over a closed loop track. Track and vehicle components will be subjected to the equivalent of about 10 years inservice usage in 1 year of testing.

Recently one of the leading rail publications called this the most important development in the area of railroad R. & D., the one with the most significant long-term benefit.

We are looking at several other areas which are listed in my statement but in the interest of time I will not repeat them here.

I would make one last note in the R. & D. area, and that is that further support of our safety research efforts will be derived from the newly established railroad safety research committee which was formed under the joint auspices of the AAR, the RPI, FRA, and rail labor. This committee, which is cochaired by the president of the United Transportation Union, and the vice president-operations of one of our major railroads, will look at problems and try to determine what changes need to be made in safety and accident prevention programs and generally attempt to bring into sharp focus the safety research projects being conducted in and for the industry.

All in all our R. & D. program is now aimed at immediate safety problems and their solution, and we hope that they will bear fruit in the very near term.

Looking at the regulatory activity over the past year, I will briefly list final rules which have gone into effect.

There is the railroad accident/incident reporting rules which greatly expand our reporting and provide us better data which include occupational illness.

There are the operating rules and practices rules which require that each carrier file with the FRA copies of its code of operating rules, timetables and special instructions, and to instruct and test its employees to assure their understanding of the operating rules.

We have amended the track safety standards to encourage carriers to operate their own track inspection vehicles.

We have prescribed civil penalties for our freight car safety standards.

We have added additional amendments to our freight car safety standards which restrict defective railroad freight car movements.

We have amended the safety appliance standards to require that newly constructed box and other house cars be equipped with end platforms and associated end handholds.

Finally, as I mentioned, we have put out revisions to State participation regulations which we hope will have a very beneficial effect on that program.

We have also put out several important notices of rulemaking. One is our special order and emergency order procedures.

We have put out a "stop and proceed" notice which would strengthen our regulations of operating practices in this area.

We have put out "blue flag" protection requirements which would require a blue flag to be displayed to indicate the presence of workmen on, under, and between railroad equipment. Again, that will be final very soon.

Finally, we have put out a notice on railroad radio standards and procedures which govern the use of radio communications in connection with railroad operations.

We have also put out advanced notices dealing with occupational type standards, OSHA type standards, protection of railroad maintenance of way and structures employees, and signals systems on commuter railroads and rapid transit. We have also come out with notices on recommendations from our advisory committee on operating rules, on rules 34, 93, and 99.

We are now developing, as we look at our total safety program, Mr. Chairman, two action plans which we hope will continue to improve our effectiveness over the years.

The first of these I call a short-term plan which is new underway to obtain remedial action by the industry itself so as to obtain a tangible improvement over the next 2 years. The second is a more basic method which consists of changes in the FRA's approach to safety which we hope will give us continuing betterments over the long term.

I will take a brief period to describe our short-term plan. It focuses on specialized target areas where the carriers and ourselves concentrate existing resources for the highest payoff. This is a major effort by the carriers to improve themselves in critical high cause areas which are called to their attention. In addition, we are attempting to streamline our own operation to provide field inspectors with more time to devote to industry problem areas.

We are looking at accident statistics in relation to geographic locations, individual railroads, general cause categories, the application of FRA regulations to these categories of accidents, and then finally accident rates per million train miles and per billion gross ton miles.

Under this plan a major enforcement effort is focused on 10 target railroads which, according to our 1974 accident statistics, had an accident rate of more than 25 accidents per million train miles. The results of this are summarized to date. I think it is important to note that the full impact of this short-term program will probably not be evident for another year.

Now, I would like to remark very briefly on the March 1976 report which we are required to submit to the Congress and give you some of the highlights of that report without going into a great amount of detail.

Completing the development of our long-term safety improvement plans is the completion of a "Comprehensive Railroad Safety Report" as required by section 203 of the Rail Safety Improvement Act of 1974. We are now in the final stages of preparing this report which will be submitted to the Congress on March 17, 1976. As this committee is aware, this report will deal extensively with the State participation program for railroad safety which was established in section 206 of the 1970 act. In the preparation of this report, FRA conducted an extensive survey of the States through which we have isolated several issues which have contributed in one way or another to the slow development of State participation in the Federal railroad safety effort. A detailed explanation of each of these issues will be contained in the report. I would like briefly to highlight them and preview some other aspects of the report for you today.

Under the State program, as I mentioned earlier, one of the most significant problems to date has been the general ability of the States to recruit or to employ, at present State salary levels, inspection personnel who meet the prescribed experience requirements. Other problems identified by the States involve the lack of State authority to issue more stringent rail safety rules in addition to Federal standards or to enforce existing Federal rules in their own right rather than by referral to the FRA. The States also identified several operational problems with respect to the administration of the program in the field once a State begins to participate. These problems involve the development of an effective Federal/State relationship and are not unlike problems encountered in the early stages of the development of other cooperative Federal/State programs.

The States also noted the limited scope of their participation in the Federal rail safety effort in that the concept of State participation applies only to rules, regulations, orders and standards issued under the 1970 act and not to those issued under the pre-1970 rail safety statutes such as the safety appliance acts, the Locomotive Inspection Act, the Signal Inspection Act, the Hours of Service Act. The impact of this distinction in jurisdiction upon the relative authority of a Federal and State inspector will require some duplication of inspection efforts and resulting inefficiency in the utilization of limited inspector resources.

We believe there is merit in the States' position with respect to the pre-1970 rail safety statutes. The participation of the States in the

investigative and surveillance activities pursuant to these acts would greatly increase not only the number of inspections possible but also the efficiency and cost-effectiveness of individual inspectors since duplication could be eliminated.

In the process of our consultations with interested organizations during the development of the report, NARUC suggested the creation of a statutory advisory committee to be composed of a number of State representatives, as well as carrier, labor, and consumer representatives. Such a group would bring together all parties interested in the future of the State participation program and establish a formal channel of communication for the transmittal of advice and recommendations to the Administrator. We are now considering this recommendation and believe such a body could greatly enhance the State input into the future development of the Federal/State partnership in rail safety.

Despite the several problems identified by the States during the survey, it was evident there is a considerable degree of interest in the railroad safety program among the States. For purpose of the survey FRA identified five major categories in which it expects to issue regulations between now and fiscal year 1981. For each of these categories the States expressed an interest or an intent to participate, and these are shown in my statement.

The FRA believes that the present statutory structure of State participation in section 206 of the act is a workable mechanism which fully recognizes the national interest in preserving uniformity of regulation in an industry which is basically interstate in nature, while also recognizing a proper role and important function for the States in the investigative and surveillance activities to assist in the enforcement of these uniform Federal standards at the local level.

Therefore, we do not contemplate recommending any major legislative changes which would affect the present functions and jurisdictions of the Federal and State governments with regard to the program. Our report will, however, contain recommendations for some legislative changes to section 206 of the act in order to facilitate increased State involvement, to improve communication between the States and FRA, and to rationalize the inspection efforts and eliminate inefficient inspector utilization.

I will skip over the section in the report on number of inspectors. Suffice to say that we will project in the report to you our estimate of the numbers of inspectors needed at the Federal, State, and the carrier levels through fiscal year 1981 as required by the act. These estimates are based on a considerable amount of uncertainty, which is, of course inherent in all projections of future activities. We would caution the Congress as they look at these to take into account the fact that there is not a basic way to project these for the three levels. Therefore, we will have in the report several caveats regarding these numbers, but they will be there for your review.

Finally, in the report we will address the hazardous materials provision. The report will contain a description of DOT regulations for handling radioactive materials transported by rail and projections of the amount of such materials which will be transported by rail through fiscal year 1980.

In addition, the report will cite several changes in the regulations governing radioactive materials which are expected to be issued shortly. Some of these changes will relate specifically to the rail mode, such as revised placarding requirements and intrain placement requirements. In addition, a number of changes are based upon recent changes made by the International Atomic Energy Agency. All major countries and international transport organizations use the IAEA standards as the basis of their own regulations. DOT and ourselves will use any future revisions made by IAEA as a basis for reviewing our own regulations.

Finally, I would like to address the subject of the FRA field reorganization since that has been raised in one of the bills before the committee.

Based on a review and an analysis of our safety effort which takes into account the additional responsibilities given FRA by Congress in recent legislation—I might add legislation that was very much involved with this committee and your fine efforts—we now have much implementation to do. In light of that we have developed a regional reorganization plan which we believe will enable us to improve our effectiveness not only for the new legislation but for our old programs.

I see the need for developing a broader based regional capability to assume our new responsibilities which includes the administration of grant and loan programs, branch line subsidy programs with the States and other transportation authorities, and overall transportation planning at the regional level.

With this in mind we plan to establish a new position of regional administrator to provide the type of top level decentralized management that will be needed in the future. In addition, we are reducing the number of our regional offices from eight to five in order to produce a more efficient span of control within the FRA.

The objective of this reorganization will be to increase our capability in the field for other than safety activities without interfering at all with the current level and effort of our existing regional safety directors and their staffs.

We strongly believe that this reorganization will also allow FRA to delegate as much authority as possible to the local level for conduct of the daily safety activities, including enforcement, accident investigation, handling of complaints, violations, and local contact with carrier and labor officials. These are functions that I believe can be handled better in the field than they can by headquarters personnel in Washington.

Completing this, however, we also believe that the headquarters safety office should have overall responsibility and authority for developing policy, priorities, guidelines, and technical support within which the field safety operations are to be conducted.

Mr. SKUBITZ. Will the gentleman yield at this point? Did I understand you to say you are recommending that the regional offices be cut from eight to five?

Mr. HALL. I am recommending that our broad based regional offices, that is the regional administrators—

Mr. SKUBITZ. The reason I ask the question, referring to the materials prepared by the staff. Committee Print No. 19, page 18, if I understand correctly, Mr. Staggers' bill provides that the Federal Railroad Administration shall be divided into 10 regional offices.

Mr. HALL. That is correct.

Mr. SKUBITZ. We have 8 now and you want to cut it to 5 but the bill goes to 10. Would you care to comment on that.

Mr. HALL. That is really why I am addressing that in the statement from our perspective where in my view we need five broad regions. We will then underneath that have the regular regional safety offices much as they are now. They will go from eight to seven regional safety directors. We will have the same field officers as far as our safety functions are concerned spread around the country. That will not change.

We are setting up here really a new activity of FRA in the field to administer the new programs which have been added under the new act which I believe Chairman Staggers' bill does not really address. He is simply talking about the safety-related activities. I don't believe we are that far apart in that area because I visualize basically no change in our current safety activities. They will in fact report to these new regional administrators, but as far as their distribution throughout the country that will not change.

Mr. SKUBITZ. I apologize for breaking in at that point.

Mr. HALL. It is a very important point.

Mr. ROONEY. Now that you have, as you say, broken in—

Mr. SKUBITZ. I apologize for it.

Mr. ROONEY. That is quite all right, Mr. Skubitz.

I was wondering, wouldn't it be better for the supervisor to have a smaller geographic area so he can concentrate his efforts?

Mr. HALL. If I may describe an imaginary chart of the field organization, we will be subdividing under the regional director in two areas. On one side there will be the regional safety director who will carry out all of the activities we are discussing here today. On the other side will be a director for what we are calling, for want of a better word, Federal assistance programs, the rail planning, grants-in-aid, and so forth.

Let me address the safety side because I think that is what is at issue here. Under the five regional administrators we will have seven regional safety directors. We will have one in Boston, one in Philadelphia, one in Atlanta, one in Chicago, one in Kansas City, one in Fort Worth, and one in San Francisco. The only change from our current organization is to eliminate one regional safety director who is now in Portland, Oreg., and set up the Portland office reporting directly back to the regional directors in San Francisco.

So in a sense we have 5 people reporting directly to the administrator, and my problem with having 10 is simply the span and control problem, how many people can report directly into a given office. We will break it down to a five level and then below that we will break it down to seven regional directors reporting through these regional administrators for safety, and at some point in time presumably five or perhaps more Federal assistance regional directors. Right now we are asking for only three in our current budget.

Below the safety regional director we also have supervisors for each inspection discipline. In other words, we have a supervisor for motive power and equipment, one for track, one for operating practices, one for signals, and so forth. Those supervisors will not change at all. We have no intent of changing the extent of that current field organization. Supervisors now report through the regional safety director and they will so continue to report.

They are further spread through the country. In fact, it would be my hope that we would continue to expand that level of, if you will, first-level supervisory activity in the field. Below them come the regular journeyman inspectors who also are spaced around. So you have a pyramid type of organization which I think lends itself to each level being able to control to the best extent the level below it rather than having everybody reporting up.

Mr. ROONEY. I wonder, Mr. Hall, if you could furnish this committee with this organizational chart that you have just described.

Mr. HALL. Yes, sir.

Mr. ROONEY. I just can't put it together. I would like to have that along with a map of the geographical areas that you just described covered by the safety inspectors at the regional levels.

Mr. HALL. We will be pleased to do that. This is a plan which has been approved by Secretary Coleman and is now in place as far as we are concerned.

Mr. ROONEY. Thank you [see pp. 35-37].

Mr. HALL. Let me now address, if I may, to close our comments, H.R. 11804, the bill referred to by Mr. Skubitz.

FRA views with great concern the introduction of H.R. 11804 which would amend the Safety Act to authorize, among other things, additional appropriations for fiscal year 1977 and make specific allocations of the amounts so authorized. With the exception of certain funds to remain available until expended, as I mentioned at the outset of my statement, we do not favor the specified allocations of authorized amounts as provided by this bill because it would unnecessarily create administrative inflexibility at a time when we are attempting to expand and reorganize our safety efforts.

Further, authorization of appropriations for only fiscal year 1977 would be inconsistent with the policy of Congress developing authorization proposals for 2 years instead of 1, as required by the Budget Impoundment Control Act of 1974.

Section 2 of H.R. 11804 increases the penalty for each violation of the safety acts administered by FRA to not less than \$500 nor more than \$5,000. In some cases this would constitute an increase of well over 100 percent of the amount of the penalty for each violation. We have serious reservations as to the effectiveness of such increases in promoting safety. However, if changes in current penalty provisions are to be made, and if in the judgment of Congress they should be made, they should go in the direction of more flexibility rather than less.

We would recommend that the minimum penalties be eliminated completely, as we feel that any minimum, and certainly the proposed higher minimum, is not appropriate with respect to many violations.

We would recommend providing more flexibility in the range of penalties so that fines may be levied to match the seriousness of each individual case.

Section 4 of the bill would amend the Hours of Service Act concerning employees' sleeping quarters in a way that is ambiguous and would present enforcement difficulties. Moreover, it is not clear to us how a railroad could comply with the amendment. Therefore, we would oppose this provision on the basis that these matters are better dealt with in the context of regular labor-management agreements.

Section 5 of the bill would limit the hours of service of crews on wreck or relief trains to 16 consecutive hours in any 24-hour period. An exception for wreck train crews was established by Congress way back in 1907 to allow the railroads certain flexibility in dealing with emergency situations. The effect of this proposed limitation would only serve to delay the clearing of wrecks and repair of the right-of-way and, as far as we can determine, cannot be justified from safety accident data.

Section 6 of the bill would amend the Federal Railroad Act to add various new regulations of railroad operations and specify the field organization of the FRA.

The regulatory provisions of the bill are in the nature of administrative regulations and are a radical departure from the traditional form of legislating whereby the administrative agency, within the parameters established by Congress, after appropriate investigation, promulgates, regulations implementing the statute. With all due respect to the Congress, we believe that it is more appropriate for the FRA, with our expertise, and after an appropriate investigation, to develop the detailed regulations necessary to achieve safety in rail operations. Rather than "legislative" regulations, we recommend that such proposals be left to the prescribed regulatory process.

I will not read the next couple of pages of my statement, but we do summarize there a list of the current rulemaking proceedings which cover all of the areas that are contained in the proposed bill. I think the point is that we have activities underway in all of those areas, many of which are in the final rulemaking stage.

Finally, H.R. 11804 would provide that FRA field organization be divided into 10 regional offices. This is contrary to the previously mentioned reorganization plan which reduces the number of FRA regions from eight to five, but makes no basic changes in our existing regional safety offices. Again, we do not believe that it is appropriate for the Congress to legislate internal organizational structures of Federal agencies at this level and, therefore, we strongly oppose this provision.

Mr. Chairman, that concludes my remarks and summary.

We would be very pleased to answer any questions you may have. [Mr. Hall's prepared statement and attachments follow:]

STATEMENT OF ASAPH H. HALL, ADMINISTRATOR, FEDERAL RAILROAD ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

Mr. Chairman, I am pleased to be before your subcommittee to discuss the extremely important subject of railroad safety and the Department's proposal (H.R. 11837) to amend the Federal Railroad Safety Act of 1970 to authorize additional appropriations.

The Department's proposal would authorize appropriations for fiscal years 1977 and 1978 to enable the Federal Railroad Administration to continue its efforts to promote a higher level of safety on our Nation's railroads.

This morning I would like to discuss with you the need for this legislation, and FRA's safety program under the Railroad Safety Act of 1970.

CURRENT TRENDS IN RAILROAD SAFETY

Based on preliminary figures for 1975, and adjusted figures for 1974 (damage above \$1,750), the rate of increase in train accidents continued to decline in 1975. The percentage increase for 1975 over 1974 was about $\frac{1}{2}$ percent; for 1974 over 1973, the increase was just over 19 percent; and for 1973 over 1972, the increase was almost 29 percent.

Employee fatalities were down 17.1% from 140 in 1974 to 116 in 1975. Fatalities at grade crossings declined significantly, by 28.1%, from 1220 to 902.

The final 1974 accident and casualty figures compared with preliminary figures for 1975 are summarized in Attachment 1.

The FRA Accident Reporting Regulations became effective January 1, 1975. This revision established new casualty reporting criteria designed to provide full comparability for the first time between the employee safety records of the railroad industry and industries which report to the Department of Labor under the Occupational Safety and Health Act. The new criteria encompass many injuries and occupational illnesses which were not reported to FRA in the past because they did not result in at least one day's lost time. Now *all* injuries requiring more than first aid treatment must be reported to FRA. Consequently, more injuries are being reported in CY 1975 than were reported in CY 1974 under the former reporting criteria. I would emphasize that this does *not* necessarily mean the number of injuries is increasing; it simply means that more are being *reported* under our new regulations.

FRA ENFORCEMENT EFFORTS

FRA safety inspectors increased their inspection efforts during CY 1975. During the first 10 months of 1975, federal and state inspectors made 3,679 inspections of 108,600 miles of track; during 1975, 8,311 inspections were made for our new equipment standards; and 3,832 hazardous materials inspections were made. Safety appliance inspections were made representing approximately 87 percent of the total locomotive fleet and 22 percent of the car fleet. Inspector activity is summarized in Attachment 2.

During FY 1975, FRA transmitted 8,441 claims totalling \$2,682,000 for alleged rail safety violations. A total of \$797,121 was collected for 4,788 claims. For the first half of FY 1976, FRA settled 2,087 claims for \$522,894. The figures for claims transmitted during this 6 month period are not yet available. Attachment 3 summarizes FRA enforcement actions.

MAJOR ACTIONS DURING 1975

Over the last year, additional actions taken by the Federal Railroad Administration under section 203 of the Railroad Safety Act of 1970 have resulted in furthering railroad safety. Emergency Order Number 5, prohibited the free rolling switching of certain tank cars filled with high pressure compressed gas. We have experienced no fires or explosions with these cars through switching accidents since the Order was placed in force in late 1974. Positive action produced positive results.

Last year FRA published a notice advising that it intended to delegate additional enforcement powers to its Inspectors and certified State Inspectors. The additional powers will enable FRA and participating State Inspectors to (1) control certain serious hazards by requiring that proper repairs be made before unsafe railroad cars are returned to service, and (2) reduce risks created by operation at excessive speed over deficient track by reducing that track in class. Rulemaking procedures have been completed and a final rule will be issued shortly.

A developing part of FRA's enforcement program is the State Participation Program. There are now 12 States participating in the rail safety track program under section 206 of the Federal Railroad Safety Act with a total of 22

inspectors. They are Alabama, Arizona, Illinois, Indiana, Iowa, Missouri, Nebraska, Ohio, Oregon, Pennsylvania, Vermont, and Washington. At present, FRA is reviewing applications submitted by the States of Connecticut, Kentucky, New Jersey, and Utah. In addition, FRA has had discussions with representatives of the States of Kansas, New Hampshire, North Carolina, Rhode Island and South Carolina, all of which have expressed an intent to participate in this program.

Fiscal year 1975 was the first year in which FRA was funded for the Federal share of grants for the State Participation Program, and in which States joined with us in our track safety efforts. However, we have been hampered in expanding participation to a greater number of States chiefly because of the prescribed inspector qualifications. Only a few States employ inspectors with sufficient track experience, and, because of the lower level of State salaries, some States have not been able to recruit qualified candidates. FRA requires State track inspectors to meet the same qualifications as FRA's Federal track inspectors. Uniformity of qualifications for State and Federal inspectors is essential to an effective and uniform enforcement program.

As a result of discussions and several meetings with NARUC, the FRA issued revised State Participation Regulations in November 1975. Rather than lowering the inspector qualification requirements, under these revised rules, FRA has initiated an intensive training program combining both on-the-job training and classroom instruction which will develop the skills necessary for an effective state track inspection program. The revised regulations also expand the scope of the State Participation Program by the addition of specifications for State participation under the Railroad Freight Car Safety Standards, with a training program for equipment inspector trainees similar to that established in the track area. The regulations also clarify the working relationship between State agencies and FRA.

With the freight car inspection program, and the training program in both track and equipment, we expect to see a significant increase in the number of States, and number of State inspectors, participating in this rail safety program during fiscal years 1977 and 1978. At the present time we anticipate having 34 State inspectors by June 30, 1976, 155 by the end of FY 1977 and 180 by the end of 1978.

Another promising aspect of our enforcement effort is our automated track inspection program which provides FRA with an automated track inspection capability. FRA currently has a single track geometry measuring vehicle which has been used as both a research device and a safety enforcement tool. Using technology developed by our Office of Research and Development, two additional FRA track inspection vehicles are being fabricated during FY 1976 and a fourth system will be completed in FY 1977. The three new systems will be used solely for enforcing Track Safety Standards and the existing system will be used part-time for this purpose and part-time for R&D. Approximately 90,000 miles of track will be inspected in FY 1977, and the total is expected to rise rapidly thereafter. Automated track inspection cars can provide the larger data base required for more effective safety enforcement with essentially 100% track geometry inspection coverage of passenger train routes, and a large sampling of main line freight routes. Rail flaw detection equipment on one of the vehicles will provide the track inspection with a statistically significant sample of internal rail defects. To maintain the continuity of the development of this program, we are specifically requesting that of the amounts authorized for FY 1977, \$5,000,000 remain available until expended, and of the amounts authorized for FY 1978, \$7,000,000 remain available until expended.

SAFETY RESEARCH AND DEVELOPMENT

The FRA technological research effort has been redirected and more sharply focused on near and intermediate term conventional rail problems. Efforts in this area have already resulted in significant program redirection. We have placed highest priority on safety and now have efficient internal interface between our rule makers, inspection, and technical R&D support personnel.

The Office of Rail Safety Research, which was formed in FY 1975, conducts research in three areas: (1) Improved track structures; (2) Rail vehicle safety; and (3) Safety inspection, defect detection, and testing of track and rail vehicle components and systems.

Track research is concentrated on the reduction of train accidents caused by the two major deficiencies that account for 67% of derailments. These are failure of track system components (rails, fastenings and cross-ties) and excessive dynamic responses of trains moving over rough track.

The construction of a facility for Accelerated Service Test (FAST) has begun at the Transportation Test Center. The facility will be used to provide safety life-cycle data in a compressed time period by virtually continuous operation of a test train over a closed loop track. Track and vehicle components will be subjected to the equivalent of about ten years of in-service usage in one year of testing.

We completed the demonstration tests of the ballast consolidator, a machine used to compact ballast loosened during track re-smoothing operations. Substantially on the basis of improved track performance data derived from this demonstration project, several railroads have acquired these machines.

The goal of the Rolling Stock Program is to improve railroad safety through the development of: (a) guidelines for vehicles and vehicle components which are less prone to failures; (b) techniques and mechanisms for predicting, detecting, and reacting to the failures which do occur; (c) improvements to increase the accident survivability of vehicle occupants; and (d) safety control systems. To establish safety criteria for new and existing vehicles and components, FRA is investigating the effect of forces exerted on critical components, such as wheels, axles, brakes and couplers, under emergency conditions.

We are also involved in research activities directed toward reducing injuries and fatalities of occupants in rail vehicles. Computer models were developed to stimulate accidents and to analyze countermeasures to increase occupant protection.

In the area of the rail transportation of hazardous materials, work has progressed to the point that several promising safety improvements have been developed to reduce the catastrophic consequences of accidents involving these cars. FRA, in cooperation with the Association of American Railroads (AAR) and the Railway Progress Institute (RPI), is evaluating these improvements in simulated accident situations. In the Track-Train Dynamics Project (jointly sponsored by FRA, AAR, and RPI) the interaction between rail vehicles and the track are being investigated. This work will result in the development of vehicle and track performance specifications and design guidelines to assure the safety of operations in the entire life cycle spectrum.

Past work in the Human Factors Program was devoted primarily to basic research (e.g., problem definition, analysis of job requirements and system analysis). The program has now matured to the point where experiments simulating in-service conditions are needed to verify and build upon prior accomplishments. These experiments will involve evaluation of the performance of the locomotive engineman under various conditions. The design specifications for the Research Locomotive Cab and Train Handling Evaluator are being prepared as the first step to conduct studies on man/machine interfacing under realistic, controlled, safe experimental conditions. Other FRA-sponsored human factors studies include new cab control concepts, determining the presence of noxious gases and noise levels in locomotive cabs, and testing and evaluating train handling aids.

The success of our *automated inspection car program* was noted in our earlier comments. We intend to continue an improvement program to extend the automated inspection capability for both the large rail cars and the smaller high-rail vehicles. Particular emphasis will be placed on improving detection of small rail flaws—the present system is limited to large flaw detection. Research will also continue to find automated methods to measure rail wear, rail-end mismatch, rotted ties, loose spikes and track structure modulus (stiffness elasticity).

Further support for our safety research efforts will be derived from the newly established Railroad Safety Research Committee which was formed under the joint auspices of AAR, RPI, FRA and rail labor. This Board, which is co-chaired by the President of the United Transportation Union and the Vice President-Operations of one of our major railroads, will look at problems, try to determine what changes need to be made in safety and accident prevention programs, and generally attempt to bring into sharp focus the safety research projects being conducted in and for the industry.

REGULATIONS

FRA has undertaken several regulatory and enforcement actions during the past year as part of our continuing effort to improve the level of railroad safety. Several new Federal railroad safety rules were issued and became effective during 1975. These included the following.

Railroad Accident/Incident Rules which greatly expanded the scope of railroad accident and incident reporting, including occupational illness.

Operating Rules and Practices Rules which require each carrier to file with FRA copies of its code of operating rules, timetables, and special instructions, and to instruct and test its employees to assure their understanding of the operating rules.

Track Safety Standards amendment which encouraged carriers to operate their own track inspection vehicles.

Civil Penalties—Freight Car Safety Standards which prescribed the amount of penalty to be assessed for violation of specific requirements of the Standards.

Freight Car Safety Standards amendments which restrict defective railroad freight car movements.

Safety Appliance Standards amendment which requires newly constructed box and other house cars to be equipped with end platforms and associated end handholds.

State Participation Regulations revision which established a program for State participation in inspections under the Railroad Freight Car Safety Standards, and a training program for State inspector trainees in both track and equipment.

In addition, several notices of proposed rulemaking were published which proposed additional railroad safety standards and requested public comment on their merits. Each of these proceedings is still in progress and FA is reviewing the input received through public comments and hearings. These proceedings include:

Special Notice and Emergency Order Procedures which would delegate additional enforcement powers to FRA and qualified State inspectors as I mentioned earlier in my statement.

"Stop-and-Proceed" Procedures which would strengthen our regulation of operating practices in this area.

"Blue Flag" Protection Requirements which would require the display of blue signals to indicate the presence of workmen on, under or between railroad equipment.

Radio Standards and Procedures governing the use of radio communications in connection with the conduct of railroad operations.

FRA also issued a number of advance notices of proposed rulemaking which identified areas of concern to FRA and requested public comment on the need for regulation as well as possible methods of regulation. The publication of these notices was in keeping with the DOT policy of involving the public in the rulemaking process at an early stage to assure full public participation in agency regulatory decisions. These advance notices included:

Railroad Occupational Safety Standards covered adoption of Department of Labor OSHA standards for the railroad industry.

Protection of Railroad Maintenance-of-way-and-structures Employees would require railroads to take protective measures to prevent rail equipment from striking railroad employees working on track or signal system components.

Signal Systems on Commuter Railroads and Rapid Transit Lines would require the installation of automatic train stop, train control, or comparable systems to assure these passenger operations are conducted in accordance with signal indications. We also have in final stage for issuance Notices of Proposed Rulemaking on three operating rules which have been recommended by the Railroad Operating Rules Advisory Committee (Rules 34, 93 and 99).

REVIEW OF SAFETY PROGRAM

FRA is now developing, through a number of studies, a short term action plan and a longer range plan to provide a basis for directing the Federal safety program. These studies will provide the basis for reviewing our current approach to the safety problem and setting new goals and policies.

In spite of the fact that the primary cause of deterioration in railroad safety is due to the industry's economic posture, it is hoped that by FRA's use of two Safety Improvement Plans, an improvement in the overall picture will emerge. In brief, these two Plans are: first, a short-term effort now underway to obtain remedial action by the industry itself so as to achieve a tangible improvement over the next two years; and second, a more basic method which consists of

changes in the FRA's approach to safety which should give us continuing betterments over the long term.

Our short term Safety Improvement Plan focuses on specialized target areas for the carriers and ourselves to concentrate existing resources for the highest payoff. This entails a major enforcement effort by the carriers to improve themselves in the critical high-cause areas called to their attention. In addition, we are attempting to streamline our own operations to provide field inspectors with more time to devote to industry problem areas.

Problem areas are defined by analyzing accident statistics in relation to geographic locations, individual railroads, general cause categories, the application of FRA regulations to various categories of accidents, and accident rates per million train miles and per billion gross ton miles.

Under this Plan, a major enforcement effort was focused on ten target railroads which, according to our 1974 accident statistics, had an accident rate of more than 25 accidents per million train miles. During the ten month period of January to October 1975, three of the target carriers showed some decline in their total accident rate. One carrier experienced a reduction in its human factors accident rate, three had reduced equipment accident rates, and five carriers experienced a reduction in their derailment rates. The full impact of this program will not be evident for another year.

The long term plan consists in the main of decentralized FRA regions, hazard identification and analysis systems, expansion in state cooperative enforcement programs, and consideration of a unit concept by which a principal inspector would be assigned to each major carrier.

We think it important to mention that although we are taking new approaches wherever practical to remedying the safety situation in the industry, more than 80% of our available man hours are still applied to standard operations provided for in our basic legislation.

MARCH 1976 REPORT

Complementing the development of our long term safety improvement plans is the completion of a "comprehensive railroad safety report" as required by section 203 of the Rail Safety Improvement Act of 1974. FRA is now in the final stages of preparing this report which will be submitted to the Congress on March 17, 1976. As this Committee is aware, that report will deal extensively with the State Participation Program for railroad safety which was established in section 206 of the Federal Railroad Safety Act of 1970. In the preparation of the report, FRA conducted an extensive survey of the States, through which we have isolated several issues which have contributed in one way or another, to the slow development of State participation in the Federal railroad safety effort. A detailed explanation of each of these issues will, of course, be contained in the report. However, I would like to briefly highlight them and preview other aspects of the report for you today.

State safety program

As I mentioned earlier in my statement, one of the most significant problems to date has been the general inability of the States to recruit or employ, at present State salary levels, inspection personnel who meet the prescribed experience requirements. Other problems identified by the States involve the lack of State authority to issue more stringent rail safety rules in addition to Federal standards, or to enforce existing Federal rules in their own right rather than by referral to the FRA. The States also identified several operational problems with respect to the administration of the program in the field once a State begins participating. These problems involve the development of an effective Federal/State relationship, and are not unlike problems encountered in the early stages of the development of other cooperative Federal/State programs.

The States also noted the limited scope of their participation in the Federal rail safety effort in that the concept of State participation applies only to rules, regulations, orders and standards issued under the 1970 Act, and not to those issued under the pre-1970 rail safety statutes such as the Safety Appliance Acts, the Locomotive Inspection Act, the Signal Inspection Act, and the Hours of Service Act. The impact of this distinction in jurisdiction upon the relative authority of a Federal and State inspector will require some duplication of inspection efforts and resulting inefficiency in the utilization of limited inspector resources.

There may be merit to the States' position with respect to the pre-1970 rail safety statutes. The participation of the States in the investigative and surveillance activities pursuant to those acts would greatly increase not only the number of inspections possible, but also the efficiency and cost-effectiveness of individual inspectors since duplication could be eliminated.

In the process of our consultations with interested organizations during the development of the report, the National Association of Regulatory Utility Commissioners (NARUC) suggested the creation of a statutory advisory committee to be composed of a number of State representatives, as well as carrier, labor, and consumer representatives. Such a group would bring together all parties interested in the future of the State Participation Program and establish a formal channel of communication for the transmittal of advice and recommendations to the Administrator. We are now considering this recommendation and believe such a body could greatly enhance the State input into the future development of the Federal/State partnership in rail safety.

Despite the several problems identified by the States during the survey conducted as a basis for the report, it was evident that there is a considerable degree of interest in the railroad safety program among the States. For purposes of the survey FRA identified five major categories in which it expects to issue regulations between now and FY 1981. For each of these categories the States expressed an interest or intent to participate as follows:

Rail safety category	State intentions	
	Will participate	May participate
Track safety.....	29	5
Freight car safety.....	22	7
Occupational safety.....	20	6
Operating practices safety.....	20	6
Passenger car safety.....	15	6

The FRA believes that the present statutory structure of State participation in section 206 of the Act is a workable mechanism which fully recognizes the national interest in preserving uniformity of regulation in an industry which is basically interstate in nature, while also recognizing a proper role and important function for the States in the investigative and surveillance activities to assist in the enforcement of those uniform Federal standards at the local level. Therefore, the FRA does not contemplate recommending any major legislative changes which would affect the present functions and jurisdictions of the Federal and State governments with respect to the Federal railroad safety program. The report will, however, contain recommendations for some legislative changes to section 206 of the Act in order to facilitate increased State involvement, to improve communication between the States and FRA, and to rationalize the inspection efforts and eliminate inefficient inspector utilization.

Number of inspectors

In addition to the analysis of State Participation, the March report will also contain estimates of the number of inspectors needed at the Federal, State and carrier levels through fiscal year 1981. These estimates were developed in broad ranges to reflect the general uncertainties inherent in all projections of future activities and to account for the limitation of the data available as a basis for the estimates.

The development of the figures for these projections was a difficult task since there is no existing data base common to all three of the categories for which projections were required which could be utilized as a basis for our calculations. It was necessary, therefore, to develop each projection separately, and to build upon a number of assumptions in each case. The March report explains at length the assumptions utilized in the development of the figures, and these should be carefully analyzed before the projections are utilized for any purpose.

Hazardous materials

The March report will also contain a description of DOT regulations for the handling of radioactive materials transported by rail, and projections of the

amount of such materials which will be transported by rail through fiscal year 1980. In addition, the report will cite several changes in the regulations governing radioactive materials which are expected to be issued shortly. Some of these changes will relate specifically to the rail mode, such as revised placarding requirements and in-train placement requirements. In addition, a number of changes are based upon recent changes made by the International Atomic Energy Agency (IAEA). All major countries and international transport organizations use the IAEA standards as the basis of their own regulations. DOT will use any future revisions made by IAEA as a basis for revising its regulations.

FIELD REORGANIZATION

Based on a review and an analysis of our safety effort which takes into account the additional responsibilities given FRA by Congress in recent legislation, we have developed a regional reorganization plan which we believe will enable us to improve our effectiveness.

To improve our effectiveness, we see the need for developing a broader based regional capability to assume our new responsibilities which include the administration of grant and loan programs, branch line subsidy programs with the States and other transportation authorities, and overall transportation planning on the regional level. With this in mind, we plan to establish a new position of Regional Administrator to provide the type of top level decentralized management that will be needed in the future. In addition, we are reducing the number of our regional offices from 8 to 5 in order to produce a more efficient span of control within FRA. The objective of this reorganization will be to increase our capability in the field for other than safety activities without interfering at all with the current level and effort of our existing Regional Safety Directors and their staffs.

We strongly believe that this reorganization will allow FRA to delegate as much authority as possible to the local level for conduct of the daily safety activities including enforcement, accident investigation, handling of complaints, violations, and local contact with carrier and labor officials. These are functions that can be handled better in the field than it can by headquarters personnel in Washington. Complementing this, however, we also believe that the headquarters' safety office should have overall responsibility and authority for developing policy, priorities, guidelines, and technical support within which the field safety operations are to be conducted. This means a strengthening of the headquarters' safety staff in these areas and a shift in emphasis from attempting to handle local activities toward looking at fundamental safety problems and how to set in motion programs to eliminate these problems. There is no intention to sever the relationship between Washington and the field organization. In fact, closer coordination will be maintained. In summary, the reorganization envisions policy and technical guidance from headquarters, with operational responsibilities delegated to the field which we strongly believe will improve FRA's effectiveness.

H.R. 11804

FRA views with great concern the introduction of H.R. 11804 which would amend the Federal Railroad Safety Act to authorize, among other things, additional appropriations for fiscal year 1977, and make specified allocations of the amounts authorized. With the exception of the authorization of certain funds to remain available until expended, as I mentioned previously, we do not favor the specified allocations of authorized amounts as provided by this bill because it would unnecessarily create administrative inflexibility, at a time when we are attempting to expand and reorganize our safety efforts.

Further, authorization for appropriations for only FY 1977 would be inconsistent with the policy of Congress of developing authorization proposals for two years instead of one year, as required by the Budget and Impoundment Control Act of 1974.

As you are aware, it was less than a year ago that we appeared before the authorizing committee for authorizations of appropriations for FY 1976. Rather than make an annual appearance for this purpose, it would be preferable to provide authorization for appropriations for at least a two year period. Thus,

we could effectively plan and organize our safety efforts over the longer term which is especially important in our rail safety research and development program when long range planning is required to insure its success. This request is not an attempt to evade Congressional oversight which can be obtained at any time Congress deems it warranted.

Section 3 of H.R. 11804 increases the penalty for each violation of the safety acts administered by FRA to not less than \$500 or more than \$5,000. In some cases this would constitute an increase of well over 100% of the amount of the penalty for each violation. We have serious reservations as to the effectiveness of such increases in promoting safety. However, if changes in current penalty provisions are to be made, they should go in the direction of more flexibility. We would recommend that the minimum penalties be eliminated completely, as we feel that any minimum, and certainly the proposed higher minimum, is not appropriate with respect to many violations. We would recommend providing more flexibility in the range of penalties so that fines may be levied to match the seriousness of each individual case.

Section 4 of the bill would amend the Hours of Service Act in a way that is ambiguous and would present enforcement difficulties. Moreover, it is not clear how a railroad could comply with the amendment. Therefore, we would oppose this provision on the basis that these matters are better dealt with in the context of regular labor-management agreements.

Section 5 of the bill would limit the hours of crews on wreck or relief trains to 16 consecutive hours in any 24 hour period. An exception for wreck train crews was established by Congress in 1907 to allow the railroads certain flexibility in dealing with emergency situations. The effect of the proposed limitation would only serve to delay the clearing of wrecks and repair of the right of way and cannot be justified from safety accident data.

Section 6 of the bill would amend the Federal Railroad Safety Act to add various new regulations of railroad operations and specify the field organization of the FRA.

These provisions of the bill are in the nature of regulations and are a radical departure from the traditional form of legislating whereby the administrative agency, within the parameters established by Congress, promulgates, after appropriate investigation, regulations implementing the statute. With all due respect to the Congress, we believe that it is more appropriate for FRA, with its expertise, and after an appropriate investigation, to develop the detailed regulations necessary to achieve safety in rail operations. Rather than "legislate" regulations, we recommend that such proposals be left to the prescribed regulatory process.

To demonstrate the appropriateness of our position we are pleased to advise that FRA has underway several rulemaking proceedings covering the areas proposed in this bill.

An August 5, 1974, the Congress of Railway Unions (CRU) filed a rulemaking petition requesting issuance of a rule to prohibit railroad employee lodging within one mile of a switching yard. A notice was published in the February 13, 1975 issue of the Federal Register (40 FR 6701) requesting public comment. The period for filing comments expired April 30, 1975. FRA is reviewing the numerous comments in response to the notice.

On August 9, 1973, FRA published in the Federal Register an ANPRM advising that it was considering initiation of rulemaking with respect to Rule 99 (Flag Protection) and three other rules in the AAR standard code of operating rules. Public comment was invited by October 15, 1973. On January 15, 1974, CRU filed a rulemaking petition to require a standard "Rule 99" Flagging Rule on all railroads. After considering all the comments filed in response to the ANPRM, FRA referred this matter to its Railroad Operating Rules Advisory Committee for further consideration. This committee was established on September 20, 1974, and is composed of twelve members representing Rail Labor, Rail Management and State Regulatory Agencies. At its meetings in July, August, and September the Advisory Committee reviewed this matter and recommended numerous changes in the present Rule 99. FRA is now in the process of preparing an NPRM which should be issued shortly.

On July 21, 1975, FRA published in the Federal Register (40 FR 30495) an NPRM to require railroads to display Blue Flags and take other protective measures to protect workmen working on, under, or about, rolling equipment. Comments were invited to be filed before September 5, 1975 and a public hearing was held on that date. In addition, the Railroad Operating Rules Advisory Committee reviewed the Public Docket in this proceeding in November and made additional comments on the proposed rule. FRA will issue a final rule shortly.

On September 20, 1974, the United Transportation Union filed a rulemaking petition to require highly visible markers on the rear end of every train. A public notice inviting comments on this petition was published in the February 18, 1975 issue of the Federal Register (40 FR 7001). At the request of the Brotherhood of Locomotive Engineers, the comment period was extended to April 15, 1975.

FRA is also considering the comments filed in response to an NPRM proposing issuance of a regulation to require highly conspicuous marking of the rear end of passenger trains and has devoted considerable effort in field testing of strobe lights and other devices under typical operating conditions. In the course of this field testing, deficiencies in the system proposed in the NPRM were uncovered. FRA is now engaged in developing a second NPRM, which will invite public comment on a modified system.

Finally, H.R. 11804 would provide that FRA field organization be divided into ten regional offices. This is contrary to the previously mentioned reorganization plan which reduces the number of FRA regions from eight to five, but makes no basic changes to our existing regional safety offices. Again, we do not believe it is appropriate for the Congress to legislate internal organizational structures of Federal agencies at this level and therefore we strongly oppose this provision.

Mr. Chairman, that concludes my prepared remarks, I will be pleased to answer any questions the Subcommittee may have.

ATTACHMENT 1
TRAIN ACCIDENT SUMMARY

	1975 estimate ¹	1974 ²	Percent change	1975 percent of total
Total train accidents.....	7,532	7,491	+0.5	100.0
Human factors.....	2,056	1,526	+34.7	27.3
Equipment failures.....	1,680	1,609	+4.4	22.3
Track failures.....	2,719	2,916	-6.8	36.1
Miscellaneous causes.....	1,077	1,440	-25.2	14.3
Millions of train miles.....	726.1	833.3	-12.9	
Accidents per million train miles.....	10.3	8.9	+15.7	
Human factors.....	2.8	1.8	+55.6	
Equipment.....	2.3	1.9	+21.0	
Track.....	3.7	3.5	+5.7	
Miscellaneous.....	1.5	1.7	-11.8	
Train accident casualties:				
Killed.....	73	99	-26.3	
Injured.....	1,151	812	(³)	
Employee casualties, all types of accidents:				
Killed.....	116	140	-17.1	
Injured.....	42,298	15,620	(³)	
Casualties at grade-crossing all classes of persons:				
Killed.....	902	1,220	-26.1	
Injured.....	3,769	3,260	(³)	
Millions of man-hours worked.....	1,009.6	1,099.5	-8.2	

¹ Data shown for 1974 are final figures. Figures for 1975 have been estimated from preliminary data for the 1st 10 mo on a straight line basis.

² 1974 train accident figures have been made comparable with 1975 by eliminating accidents in the \$750 to \$1,749 damage range.

³ Because of revised reporting requirements for 1975 injury figures are not comparable.

ATTACHMENT 2

INSPECTORS' ACTIVITIES

The vast expansion of FRA's safety inspectors responsibility under the Federal Railroad Safety Act of 1970 has had the effect of increasing the safety inspection activity. Inspections made of the total freight car, as opposed to the pre-Safety Act procedure of inspecting only brakes and safety appliances, has actually increased the effectiveness of our field inspections. Greater numbers of track and hazardous materials inspections were made in 1975.

LOCOMOTIVE, SAFETY APPLIANCE AND FREIGHT CAR STANDARDS INSPECTIONS

During Calendar Year 1975, Federal Inspectors performed *Safety Appliance Inspections* on 29,800 locomotive units and 347,700 cars. These inspections disclosed 934 locomotive and 47,131 car safety defects which were corrected by railroad personnel. Prosecution has been recommended on 4,924 cases.

These inspections represent 86.8% of the locomotive fleet and 21.7% of the car fleet inspected for Safety Appliances.

A total number of 4,232 *Locomotive Inspections* and 8,311 *Freight Car Standard Inspections* were conducted during Calendar Year 1975 covering 29,328 locomotive units and 58,180 cars. These inspections led to the discovery of 5,190 defective locomotive units and 15,079 cars which were corrected by the railroads and recommendations for prosecutions on 423 cases.

The inspections disclosed a defect ratio of 17.7% for locomotives and 25.9% for cars.

These inspections represent 85.5% of the locomotive fleet and 3.4% of the car fleet inspected.

TRACK INSPECTION

During Calendar Year 1974, Federal track safety inspectors with participating State track inspectors conducted a combined total of 1,273 inspections covering 43,800 miles of track, 18,170 turnouts, and examination of 35,120 records of carrier track inspections. These inspections led to the discovery of 11,754 defects which were corrected by the railroads and recommendations for prosecution in 132 cases.

During the first 10 months of 1975, Federal and State track inspectors have conducted 3,679 inspections on 108,600 miles of track, 46,900 turnouts, and examined 88,800 carrier records. During these inspections 31,000 defects were identified by our inspection force and were corrected by railroad personnel. Prosecution has been recommended in 162 cases.

HAZARDOUS MATERIALS

The Federal Railroad Administration conducted 132 field accident investigations during Calendar Year 1975 in which the presence of hazardous materials was an important aspect of the accident. Likewise, the Federal Railroad Administration assisted the National Transportation Safety Board in their investigations into six serious rail accidents involving hazardous materials. In addition, 527 special inspections of shipper facilities were conducted as a result of receiving Hazardous Materials Incident Reports and Department of Defense "DISREP" Reports.

During 1975, personnel of the Federal Railroad Administration performed 3,832 inspections of rail carrier, rail shipper, and specification container manufacturer facilities. This was a 50% increase over the effort expended in 1974. Prosecution has been recommended on 234 cases.

SIGNALS AND TRAIN CONTROL

A total of 270 applications for approval of proposed modifications of signaling systems and relief from the requirements of the Rules, Standards and Instructions governing block signaling systems, interlockings, automatic train stop, train control and cab signal system were processed during the year ending December 31, 1975. This compares with 175 handled in 1974.

In 1975 approximately 21,000 inspections of signal equipment were made by 21 inspectors and 7 supervisors compared with 19,000 inspections made by approximately the same force during the year 1974. The reduction of complaints involving signals during the year 1975 permitted the signal inspectors to devote more time to signal inspections.

These 21,000 inspections in 1975 involved the inspection of approximately 141,000 pieces of apparatus. The defective equipment found is called to the attention of the management for correction before any serious trouble occurs. This is indicated by the small number of accidents attributed to the malfunction of the signaling systems. Prosecutions were recommended on 187 cases.

OPERATING PRACTICES

The FRA Operating Practices inspectors during FY 1975 inspected 1,700 Railroad Operating Records; 79,750 Accident Records and 296,694 Hours of Service Records. Prosecutions were recommended on 104 cases involving accident reporting and 831 Hours of Service cases.

ALL INSPECTORS

A total of 1,378 complaints were investigated during Calendar Year 1975, an increase of 51 complaints over the previous year.

The Federal Railroad Administration investigated 77 serious train accidents and 117 fatalities of railroad employees during Calendar Year 1975.

FRA SAFETY INSPECTORS' ACTIVITIES

Inspections	Calendar year—		Percent of total
	1974	1975	
Safety appliances:			
Cars.....		374,700	1.22
Locomotives.....		29,800	1.87
Locomotives:			
Number of inspections.....	5,248	4,232	
Units.....	34,890	29,328	1.86
Freight cars:			
Number of inspections.....	8,577	8,311	
Cars.....	59,898	58,180	13.4
Track:			
Number of inspections.....	1,273	1,367	
Miles.....	43,800	108,600	33.3
Hazardous materials: Number.....	2,514	3,832	
Signals:			
Inspections.....	19,000	21,000	
Applications.....	175	270	
Railroad operating records.....		1,799	
Railroad accident records.....		79,750	
Railroad hours of service records.....		296,694	
Complaints received.....	1,327	1,378	
Accident investigations:			
Train.....	145	77	
Fatalities.....	116	117	

¹ Fleet.

² Federal and State track inspectors during first 10 months of 1975.

³ Track miles.

⁴ Fiscal year 1975.

Violation reports filed—fiscal year 1975

Type of violation:	
Track standard.....	4,489
Freight car inspection.....	5,206
Hours of service.....	831
Locomotive inspection.....	141
Signal inspection.....	187
Accident reports personal injury.....	104
Hazardous materials.....	234
Total	11,192

Source: Work measurement system; violations submitted by inspectors during fiscal year 1975 to the chief counsel.

ATTACHMENT 3
**CIVIL PENALTIES COLLECTED FOR ALLEGED RAIL SAFETY VIOLATIONS DURING
FISCAL YEAR 1975 AND CALENDAR YEAR 1975**
Fiscal year 1975:

- A. Under Federal Claims Collection Act (FCCA):
Amount—\$635,821;
Claims—4,454.
- B. Under Federal Railroad Safety Act of 1970 (FRSA):
Amount—\$161,300;
Claims—324.
- C. Total amounts under FCCA and FRSA:
Amount—\$797,121;
Claims—4,778.

Calendar year 1975:

- A. Under Federal Claims Collection Act (FCCA):
Amount—\$775,880;
Claims—5,116.
- B. Under Federal Railroad Safety Act of 1970 (FRSA):
Amount—\$267,980;
Claims—556.
- C. Total amounts under FCCA and FRSA:
Amount—\$1,043,860;
Claims—5,672.

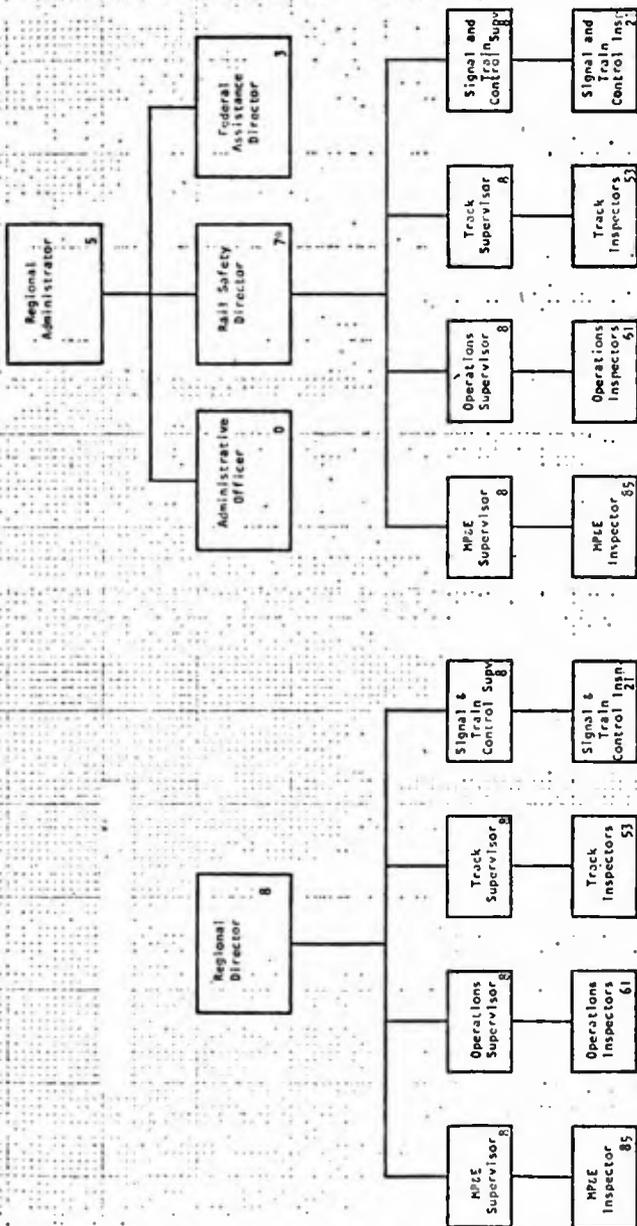
**CLAIMS FOR ALLEGED RAIL SAFETY VIOLATIONS TRANSMITTED TO RAILROADS
DURING FISCAL YEAR 1975**

- A. Under Federal Claims Collection Act:
Amount—\$1,820,500;
Number of Claims—7,397;
Number of Cases—229.
- B. Under Federal Railroad Safety Act of 1970:
Amount—\$861,500;
Number of Claims—1,044;
Number of Cases—37.
- C. Combined Total:
Amount—\$2,682,000;
Number of Claims—8,441;
Number of Cases—266.

FRA REGIONAL ORGANIZATION

PAST ORGANIZATION
(FY 76 Staffing Figures)

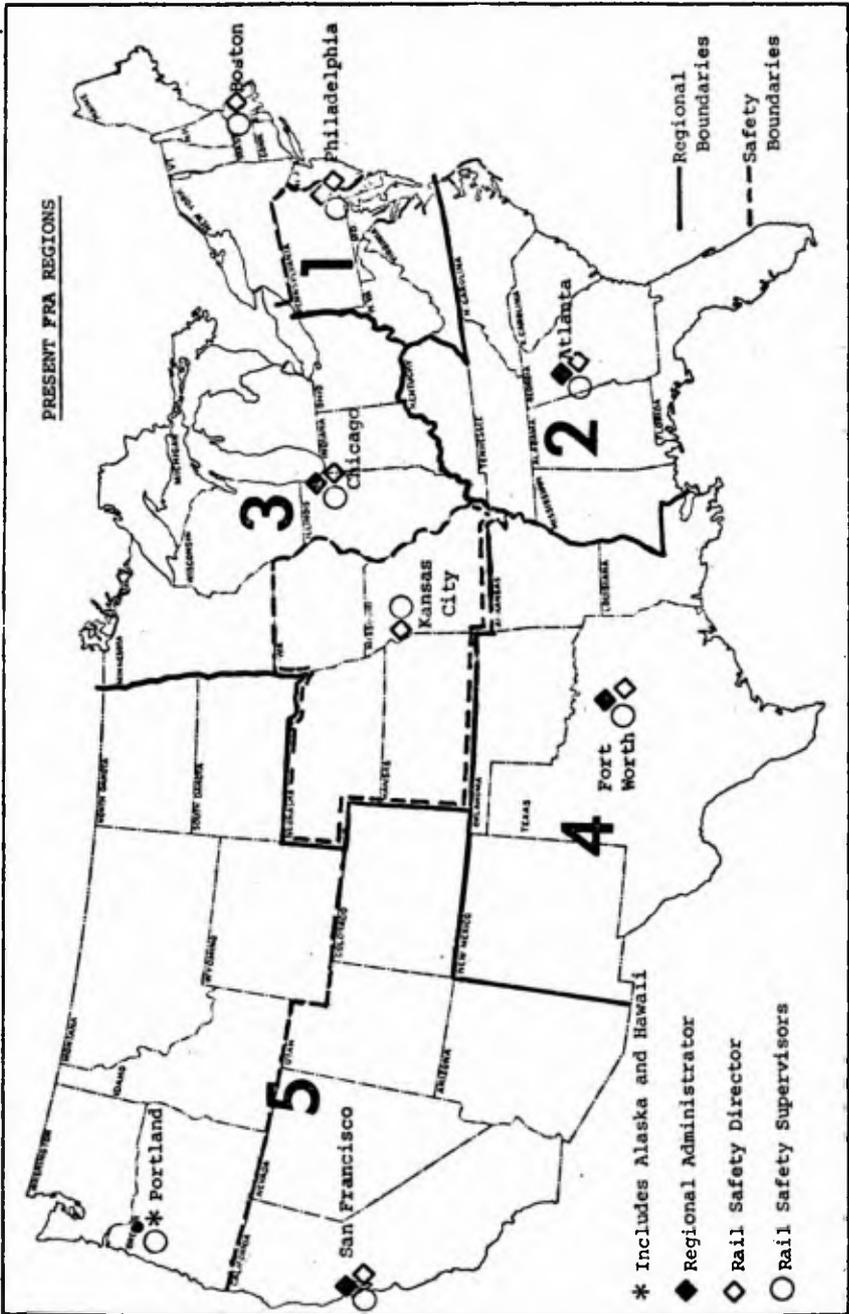
PRESENT ORGANIZATION
(Proposed FY 77 Staffing Figures)



Two of the seven shown are heads of the District Offices located in Boston at Kansas City and are responsible to the Rail Safety Directors in the Regional Offices in Philadelphia and Chicago respectively.

PAST FEDERAL RAILROAD ADMINISTRATION REGIONS





Mr. ROONEY. Thank you very much.

I want to commend you for having your statement before the committee 24 hours in advance. I had an opportunity to read it last evening. The committee is grateful for your cooperation.

I note from the first attachment to your statement the total number of train accidents increased again last year over the previous year even though the total train miles decreased by over 100 million miles from the previous year. I understand last year you told us that 98 percent of all reported accidents caused by track defects were covered by existing track standards and 97 percent of reported accidents caused by equipment defects were covered by the existing equipment regulations.

Do you have any similar statistics for this year?

Mr. HALL. I believe in terms of the coverage of our regulations they would remain the same as I stated last year. There is no question that the absolute number of accidents did increase, but the absolute increase was small. However, the per-train mile increase is still unacceptable as far as I am concerned. It is part of our effort in 1976, believe me, Mr. Chairman, to try to reduce that absolute value.

Mr. ROONEY. I am glad you brought that up because I can't see how accidents are continuing to increase when fewer train miles are involved and the existing regulations cover all of the reported accident causes.

Mr. HALL. I think it is a combination of the regulations and perhaps the need for some revision to those regulations which I would like briefly to discuss with you, as a matter of fact, plus the other side, which is the enforcement by the carriers, their own inspection procedures, their own internal safety programs, and then the extent that we are able to monitor the carriers' programs.

As you know, we have a limited inspector force. We are unable to do a 100-percent monitoring of the carriers' programs. Therefore, we have to rely considerably on the carriers' own incentive, if you will, and initiative to do their own safety program. I believe that this will always be the case. There will never be enough Federal or State inspectors to completely blanket all of the rail system and all of the carriers.

Therefore, the problem, as I see it, is to continue to instill in the carrier management the incentive and the requirement to conduct a more effective safety program within their own organization.

I believe we have seen over the past year a great improvement on the part of carriers. Particularly we note some of these target areas that I mentioned where we really pinpointed 10 railroads that had the worst accident rates. We sent out teams to sit down with their top management to try to identify what are the specific causes of those accidents and then get action to be taken.

I think that kind of activity on our part where we can actually meet and sit down and work with the carriers to determine the causes will eventually bring this thing around.

As far as the regulations themselves are concerned, I think it is very fair to say that they cover this very high percentage, 97 or 98 percent, of the violations. However, there is no question that they are new regulations, particularly the track and equipment standards.

They have been in effect only roughly 2 years. We are just now beginning to find out where there are some gaps where perhaps the regulations or standards themselves do not serve to reduce accidents. It is only through the use of the regulations that we will ever learn that.

I have asked Mr. Flohr to head up a task force during 1976 to take particular notice of the track safety standards to determine by means of sitting down with the experts in the field, where those regulations are deficient, where should we be making changes in the standards to improve the coverage, and come up with a recommendation for revision at the end of the year.

I would point out to the committee that the FAA has been quite successful, I think, in this type of periodic review of their regulations. You may not believe that, but if you could see some of the changes that have been made in the FAA regulations as a result of this continuing periodic review process, certainly we would not have the same situation we have now in the aviation field.

Because of the newness of this program, we have never really had a periodic review cycle set up. We are now instituting that this year. I would fully expect to see some changes for the better in the regulations.

Mr. ROONEY. Of the 500 inspectors that we authorized, how many do you have onboard at the present time?

Mr. HALL. Let me go to my numbers. Let me first clarify the 500 because that number is always a bone of contention.

Mr. ROONEY. It is not a number that is a bone of contention for us.

Mr. HALL. It is a number that shows up in the authorization bill but not the appropriation. What I have to address in terms of my program is the number of positions that are appropriated and authorized in our appropriation act. That number is as follows.

Mr. ROONEY. How much is in the President's budget?

Mr. HALL. Let me address what is in fiscal 1976 and then I will address what we are requesting.

Mr. ROONEY. What was in the budget, first?

Mr. HALL. In the 1977 budget?

Mr. ROONEY. 1977.

Mr. HALL. We are asking for 376 safety positions in the fiscal 1977 budget. That is broken down 313 in the field and 63 in our headquarters office. That anticipates, based on that number of positions, an end-of-year employment ceiling or level of 360 total in the Office of Safety. That is what is contained in the budget for which we are now appearing before the appropriations committees and requesting appropriations.

In fiscal 1976, the budgeted position level is 386 total positions, which is broken down as 318 in the field and 68 in headquarters. So you will see there is a net reduction of 10 in the number of positions comparing 1977 with 1976. Those 10 are in the nature of clerical positions where we get closer to this employment level of 360 and bring our authorized positions closer to the actual number of employment ceiling spaces that we will have.

To go back a minute, the 500 that this committee always has in mind is not a real number. We have never had 500 positions.

Mr. ROONEY. But you agree we need 500; do you not?

Mr. HALL. I would certainly have to agree from my standpoint that we can use more resources.

Mr. ROONEY. Why don't you ask?

Mr. HALL. We do, Mr. Chairman. The President's budget is what I have to go by.

Mr. ROONEY. OMB, in other words?

Mr. HALL. Also what the Appropriations Committee finally says.

Mr. ROONEY. OMB cut your request?

Mr. HALL. Yes, sir.

Mr. ROONEY. Are you recruiting more track inspectors now or are you going to rely on automatic track inspection equipment?

Mr. HALL. We are recruiting more inspectors. In fact, I have some numbers which I think would be of interest to the committee. Let me say we are doing both, but addressing the inspectors first. Over the past 2 years, that is, from the end of fiscal 1974 when the Appropriations Committee authorized 66 more inspector positions until now, we picked up the end of fiscal 1974, fiscal 1975 and fiscal 1976, we are adding 105 new positions in the field in the rail safety area. That is broken down by fiscal year as follows: Sixty-six were added as a result of the appropriations that came toward the end of fiscal 1974. They were hired in the summer of calendar 1975. As a result of the fiscal 1975 appropriation, we are adding a total of 39 new safety positions in the field. That is as a result of the 1976 Appropriation Act which was signed in November, last fall. Twenty-eight of the 39 are inspector positions. The others are clerical. We are now in the process of hiring 23 of those 28 new inspector positions. I expect that all of those will be on board within the next month or so. Some of them are already on and we have commitments for the balance.

There are five that remain that we are not now hiring as a result of an internal ceiling placed upon the FRA by the Secretary's Office. Until we reach our current ceiling, they have not authorized me to hire those additional five. I would fully expect that before the end of this fiscal year, once we have reached our current ceiling, they would then authorize me the five additional.

I would add one other point which I think should be emphasized, and that is, in addition to the Federal inspectors that we have in the field, we now have, as I mentioned in my statement, 22 State inspectors that are fully certified and have the same tag, if you will, as a Federal inspector for this case track inspection work. We see a large increase in that over the next year also.

Mr. ROONEY. Which is less than two per State. Why can't you get more State participation?

Mr. HALL. As I mentioned, the slowness has been principally because the States have found it difficult to hire journeyman level inspectors at the salary rates that the States can pay. The typical inspector comes off a railroad where he is making x dollars. He is not particularly interested in taking a cut in salary.

What we have proposed to do under our new regulations that were issued last November is rather than lower the journeyman level qualification, which we think would be a bad idea, we have opened up another category of inspector which we call a trainee. This will allow the States to take a man or a woman who does not have the full jour-

neyman capability, that is, 6 years of experience in the related field, put that person through about a 2-year training program which is both on-the-job training with either the qualified State inspector or the Federal inspector in the field, plus classroom training at our Oklahoma City training facility, and at the end of that 2-year period then be trained to reach the full journeyman level.

So we have provided, we believe, an avenue for the States to quickly enter the program and bring people on board over this 2-year period and then qualify as full journeyman inspectors.

We would also hope, of course, that the States would be able to go out and hire people at the journeyman level salary. That certainly is still available, but they have been having difficulty in that.

The other point I mentioned in my statement is that we have also opened a whole new category of State inspection on the equipment standards and freight car standards which they had not had prior to November 1975. That area requires a different type of inspector and one with a different type of qualification. We are hoping again the States will be able to move quickly into that new area. We have a lot of interest from the States in that particular part of the program.

Mr. ROONEY. Now, I want to get back to some of your objections to H.R. 11804. Let me go through a few of the questions, and then I will recognize the gentleman from Kansas.

In your testimony, you suggest eliminating, rather than raising, minimum penalties. Don't you think that higher penalties would make the industry observe your regulations more carefully?

Mr. HALL. I think there are cases where that may apply; yes, sir. I think there are also other cases where it perhaps may be counterproductive. Simply penalizing a railroad which has very little cash to start with does not help in terms of giving that railroad the ability to correct the deficiency.

We would like to see an approach where the penalties basically have no minimum, so we can treat each case or series of cases on their own merits. We do not have major objections to raising the top level as long as there is flexibility within that boundary. There are certain very stiff penalties right now under our current act, for instance, in the hazardous materials area. Those are very stiff penalties. Certainly in that case, they are well deserved. There are other areas under some of the older acts where the penalties are perhaps lower than they should be just because of time. In other words, the top in some cases is just a single number, and we don't have any flexibility at all.

I think our point, Mr. Chairman, is not so much where that top boundary is set. We feel obviously that can go too far, but within reason the top boundary is not the issue. Rather, let us look at violations and the associated penalties with some flexibility in terms of how they are treated, similar to what a court does in the sense of coming down with a fine. We have been very successful in the past where we do have a range of working out what we feel is an equitable penalty situation.

Mr. Bennett is our real expert in this area and I might ask him if he has other comments.

Mr. BENNETT. I might indicate that we have been enforcing the Federal Railroad Safety Act of 1970, which has a range from \$250 to

\$2,500. That flexibility has been, we feel, an aid in the enforcement of that statute and the regulations adopted under the statute. There is a difficulty on the minimum where each day can be a separate count on a continuing violation. Where there are a number of violations very quickly you can mount up to an astronomical figure that really has no relationship to any amount we hope to recover or any relationship to enforcing the regulations. That is why we are concerned about a minimum. We do enforce the flexibility of a wide range of available penalties.

Mr. HALL. I think I would add one other thing, Mr. Chairman. I don't believe the entire burden of enforcement for violations should be placed in the penalty area. One of the reasons we have moved forward with this other avenue, if you will, which I mentioned in my testimony, that is, giving additional powers to our inspectors to pull equipment out of service on the spot, to lower the speed limit or class of track on the spot, is to give what we colloquially say is another arrow in the inspector's arsenal in terms of enforcement. Simply to fine the carriers and have no other means of enforcing I don't believe is the best way to go. I would much rather have not only flexibility in the amount of fines but flexibility in what that inspector can do out in the field on the spot, right there, without going 6 months through the Claims Collection Act, and so forth, at which time you have lost some of the impact.

So, we view this new procedure that we are going to propose in rulemaking to be equally of use to our enforcement activities.

Mr. ROONEY. You appear to be opposed to a 16-hour limit on wreck train crews; is that correct?

Mr. HALL. In the case of the exception for wrecking crews we feel, to summarize our objections, this is putting a constraint upon an emergency situation where in fact there may be occasions that a crew simply has to be out there more than 16 hours to clear a track or to take care of a very serious accident situation.

Mr. ROONEY. How many accidents occur that take more than 16 hours?

Mr. HALL. I don't know that we have that specifically.

Mr. ROONEY. Can you supply that for the record?

Mr. HALL. We will try to do that.

Mr. WRIGHT. There was a survey, Mr. Chairman, that I believe the ICC did 10 or 12 years ago, and I believe at the time most of the accidents occurred at less than 6 hours on duty.

Mr. ROONEY. Isn't it bad from a personal safety point of view to have employees working more than 16 hours clearing a wreck?

Mr. FLOHR. Mr. Chairman, there are several factors involved. First, when you have an emergency situation and a wrecked train involved, you will usually have a high number of supervisors there on the scene carefully monitoring the restoration work that is being performed. Therefore, you have this additional degree of safety because there is firsthand supervision available. This should not be at all confused with the normal intent of the House of Service Act which now requires that a crew remain on duty for no more than 12 hours under normal operations. In those cases you must realize there is no close supervision involved.

In addition, in most cases I have found that carriers do observe even the 12-hour law in attempting to change out crews that are involved in emergency work. It should not be inferred that there are a large number of abuses of even the 12-hour law when doing emergency restoration work.

We have no accident data that would support any hazard problems that occur in this emergency work now where long hours of activity were involved.

Mr. ROONEY. Are these wrecking crews required to work on their way to a wreck or on their way from a wreck other than the fact that they are assigned to that responsibility? That is, do they work before or do they work after the wreck is cleared?

Mr. FLOHR. The normal requirement is that the train crew will come on duty in the terminal, where the relief train has the wrecking hook and other repair materials already loaded, take that special train out to the site of the accident and then remain on duty while the accident is being cleared. In most cases, as I stated earlier, railroads will try to comply with the 12-hour act actually, but a portion of the train crews' work is moving the equipment to and from the terminal where the equipment is normally stationed.

Mr. ROONEY. I think last year you stated, Mr. Hall, that you were delegating more enforcement authority to field inspectors. How long will it take to complete this delegation of responsibility?

Mr. HALL. I am trying to think back on where we were at the time of that hearing. I believe subsequently, after that hearing, we put out the notice of proposed rulemaking which then generated the usual public comments which have come back in. We are now in the final process of preparing a final rule for that delegation of authority to the field. Let me ask, Mr. Flohr, who heads up our safety committee, where that is.

Mr. FLOHR. The safety committee had a meeting yesterday. This was one of the agenda items. There was a minor revision in the form that will be required to be given to the railroad when a defect is found. Once that form is slightly revised, we will be ready to go to final regulatory rulemaking on that.

Also, it should be understood that now our inspectors do have the power of removing locomotives from service if they find a defect. It is the area of track and of cars which we did not have the power before to remove from service at the time the defect was found.

Mr. ROONEY. The gentleman from Kansas is recognized for 5 minutes.

Mr. SKUBITZ. First, I want to commend our chairman on his questions. He has done a very thorough job in asking questions. There isn't much more that I can add.

I was pleased to hear that if there is a serious accident, you provide more supervisors. Is that to keep the workers awake? I can't see any logic really in the argument that you oppose cutting this to 16 hours. It seems to me that when you place a man on a job for 16 hours any time there is an accident, the matter of fatigue becomes a factor and the net result is that you have a man who, because of overwork, is, himself, liable to be dangerous on the job. There hasn't been any accident that exceeds 12 hours. It seems to me we ought to be cutting these

hours still further. I think we need fewer chiefs and more Indians on these jobs and that is the point I am trying to make. I think that is the purpose of this sort of amendment.

Mr. HALL. I think the key point in my mind, Mr. Skubitz, is not that there should be a routine practice of working people 16 hours or more—

Mr. SKUBITZ. I don't mean a routine practice, but wherever the regulation or law permits it you have no control over it.

Mr. HALL. I think the point is that—

Mr. SKUBITZ. Am I right on that point or not?

Mr. HALL. If you write this into the law you have completely restricted perhaps the 1 in 1,000 case where you have a serious derailment or accident a way out distance from the home terminal and you have to have a crew out there for a long period of time. They are not necessarily always working. They can be in the wrecked train itself or resting, but they would be on duty under the provisions of the hours of service law. To the extent that you have, by law, closed out that flexibility when it is really needed in a truly emergency situation, there can be problems. I think it would be much better to have it in the sense of this is an exception to a rule. It is a very small exception.

Mr. SKUBITZ. If it is the exception, why not place a provision in the law that would limit it to 16 hours or even 12, with a provision in the law that, if it is a serious accident, you have the right to waive it?

Mr. HALL. You mean the FRA would have the right to waive it?

Mr. SKUBITZ. That is right.

Mr. HALL. That would take an on-the-spot waiver in a real-time situation which the carrier has a much better ability to handle.

Mr. SKUBITZ. If you permit the railroad company to keep a man working 24 hours, what good would it do to say: "We think 12 or 16 hours work is enough. You ought to get some more men"? They can just tell us to go fly a kite at that moment; can't they?

Mr. HALL. No. At that moment it depends upon the definition of an "emergency." It has to be a bona fide emergency.

Mr. SKUBITZ. It is a train wreck. I guess that is an emergency. It is way out somewhere and the company says: "We want to work these fellows 24 hours."

Mr. HALL. It could be the washout of a major section of track.

Mr. SKUBITZ. How could you say: "No, 16 hours is enough for these fellows"—unless we change the law?

Mr. HALL. We can't, unless you change the law.

Mr. SKUBITZ. That is my very point. I think perhaps if we gave you the right to waive, that ought to be sufficient. I think you ought to be able to make a judgment without spending 3 or 4 days making the determination whether these fellows ought to work.

Mr. HALL. I think that is certainly better than the way the bill is written.

Mr. SKUBITZ. I throw that out for discussion.

The second point I want to raise involves the idea of writing regulations within the legislation. At the top of page 6, No. 5, "Wherever a train is moving under circumstances in which it may be overtaken by another train, a member of the crew shall take such action as may be necessary to insure protection."

I see nothing wrong with that, but why do we get into the business of lighting fuses and specifying colors? Don't you have the authority to do something about that?

Mr. HALL. Yes, sir.

Mr. SKUBITZ. I am not opposed to that but I am wondering whether Congress ought to be in this business, because I would disagree immediately with line 22: "A blue signal displayed at both ends of an engine, car, or train shall indicate that the workmen are under or about such engine, car, or train." I think that ought to be a red light, not a blue one.

Mr. HALL. In the railroad industry, it is blue.

Mr. SKUBITZ. It is wrong then.

Mr. HALL. I agree with you.

Mr. SKUBITZ. I don't think we ought to get into the business of trying to determine light colors and how lights should be displayed. I keep thinking of areas in Kansas where trains go through that have grass up to your neck. There is a little town maybe a block from the railroad station. The train goes through and the wind is blowing 80 miles an hour. Now it comes time to drop a blue or red fusee, which obviously would catch the grass on fire and go right through the town. What does a fellow do? Under the law he has to drop a light or a fusee. He could start the brush on fire and burn the whole town down. That is a sort of silly example, but then the regulation is pretty silly.

Mr. HALL. I would agree with you fully, Mr. Skubitz. I think we have enough to do without worrying about red or blue.

Mr. SKUBITZ. Are we to send these fellows to school to be sure to learn about these colors?

I know our chairman was shocked with the fact that you haven't hired 500 more people. He asked about the OMB being responsible and you agreed.

Mr. Chairman, Mr. Adams is head of the House Budget Committee, and I am expecting you to go to him and make sure we get the 500 people next year.

With regard to train accidents there was an increase of five-tenths of 1 percent in 1975 over 1974; is that correct?

Mr. HALL. That is correct.

Mr. SKUBITZ. Is that due to a change in the criteria used in determining what constitutes an accident?

Mr. HALL. No, sir. We have adjusted so both of those years are comparable.

Mr. SKUBITZ. I notice the big increase is in human factors, accidents due to negligence on the part of people. Is that correct?

Mr. HALL. That was interesting to us. There is at least one explanation and that is that the miscellaneous causes you see have gone down 25 percent. Under our new accident/incident reporting requirements, there is a much more precise way of identifying the cause of the accident during 1975 than there was in 1974. We feel that that is the cause of the reduction in the miscellaneous category. It appears therefore that much of the reduction has shown itself up in the human factors category.

Mr. SKUBITZ. Will you define what you mean by miscellaneous?

Mr. HALL. We never knew before. Now we know.

Mr. SKUBITZ. After all these years.

Mr. HALL. After all these years.

Mr. SKUBITZ. I notice your track failures have decreased also; is that right?

Mr. HALL. That is right.

Mr. SKUBITZ. Is that because of track improvement?

Mr. HALL. I don't know that I would necessarily put it to improvement. I think it is probably more the effect of the track regulations or standards which went into effect a little over a year ago and the fact that the carriers are now recognizing the standards.

Mr. SKUBITZ. There were slightly more train accidents but fewer casualties?

Mr. HALL. That is correct.

Mr. SKUBITZ. Fewer people killed and fewer deaths and injuries at train crossings?

Mr. HALL. That is correct.

Mr. SKUBITZ. To what do you attribute that? Fewer people riding trains?

Mr. HALL. No; these two are employees rather than passengers. There were no passenger fatalities on trains last year, by the way. The grade crossings may have something to do with the automobile mileage or traffic in the country because that was down somewhat in 1975. On the other hand, there are more crossings being protected as the years go on. We are hoping that the grade crossing protection program under the Federal Highway Act, particularly is beginning to show some effect. That is handled through the States.

Mr. SKUBITZ. My chairman wants me to ask a few questions, but he has limited me to 5 minutes.

Will you give me more time?

Mr. ROONEY. You may have as much time as you want.

Mr. SKUBITZ. You got in quite a hassle about the transportation of nuclear wastes. Are there any safety regulations that have been put into effect in this area?

Mr. HALL. I will ask Mr. Flohr to answer that.

Mr. FLOHR. We are actively working with ERDA on the matter of transportation of nuclear material. In fact, we have just had a meeting 2 weeks ago with them concerning design work that they are now doing for the type of vehicles that will carry the nuclear materials, primarily nuclear waste materials, and the disposal of these nuclear wastes. As a result of these meetings and the designs that they are now developing and the small scale testing that they are doing—

Mr. SKUBITZ. Are you talking about containers to carry waste materials?

Mr. FLOHR. Right, they are referred to as a cask. As a result of this joint effort, this summer at the Pueblo test facility that we have there will be full scale tests conducted to determine just what performance will occur under various types of accident conditions should an accident occur while one of these nuclear shipments is being made. So we are actively working with them and we will be conducting full-scale tests.

Mr. SKUBITZ. Have you seen the container?

Mr. FLOHR. I have not seen a full size container. I have seen drawings of the full size container and I have seen small size reductions developed fully to scale of the container itself.

Mr. SKUBITZ. I think we have about reached the period where we may be transporting high-level waste materials that are very, very dangerous, with half-lives up to 50,000 years. I question whether or not that sort of material should ever be handled over the kind of rails we have today. I had a little experience with AEC when they tried to make my State the slop jar for this waste. I am expecting you fellows to look very carefully at any sort of containers that they suggest you use and test them very carefully.

Mr. HALL. We will do that, Mr. Skubitz. The tests that Mr. Flohr mentioned this summer will go a long way to determine that.

Mr. SKUBITZ. I have another question. I have been quite a supporter of Amtrak through the years and have been taking a beating over some of the things that they do. Recently I wrote a letter to the president of the Missouri Pacific Railroad asking why Amtrak was not able to travel at a speed faster than that allowed freight trains. To this moment I have not received a response to that question. Do you see any reason that a passenger train should be held down to the speed of a freight train?

Mr. HALL. Normally, Mr. Skubitz, our track standards allow passenger speeds to be somewhat higher than the freight train speeds for each category of track.

Mr. SKUBITZ. I think that is something you ought to look into.

Mr. HALL. I do not know the details on the Missouri Pacific situation. I do know Amtrak and Missouri Pacific are in a dispute, if I may use that word, over those particular operations.

Mr. SKUBITZ. Getting back to the human factors that cause these train wrecks, what are some of the human factors that are responsible for train accidents?

Mr. FLOHR. One of the first areas is errors in judgment which can have many contributing factors—inexperience, the fact that the employee anticipates an action of another employee that does not occur, the situation where one employee is passing signals and another employee is unable to control the movement of the cars. You have problems where an employee misjudges strictly in train handling, where, through the application of his air brakes, he might misjudge the stopping distance of his train.

Mr. SKUBITZ. Are the errors in judgment due to mental fatigue because they are working too many hours? I am serious about this point.

Mr. FLOHR. As I mentioned earlier, under normal train operations an employee does have a 12-hour restriction where he cannot work for more than 12 hours at one time.

Mr. SKUBITZ. Have you any rules now at the FRA that you work only 12 hours or not?

Mr. HALL. We work much longer than that, Mr. Chairman.

Mr. SKUBITZ. Why can't I get you after o'clock?

Mr. HALL. The phone is probably busy.

Mr. SKUBITZ. Have you any plan of action to deal with these human errors, errors in judgment?

Mr. FLOHR. Yes: we do. As a matter of fact, with the Railroad Operating Rules Advisory Committee, of which I am the Chairman, which is made up of five railroad management persons, five railroad labor people, and two State people, we are currently investigating the

10 highest human-factor accidents, looking at each of these factors to determine changes in rules, changes in training, additional techniques in motivating the employee. It turns out one of the highest human factor accidents involves the failure of the employee to properly secure a car when that car is set out by itself either at an industry or at a siding. This requires that an employee should secure the handbrake. Either the employee does not secure the handbrake or he does not secure the handbrake tight enough. That is the largest single cause of accidents. The second largest one involves failure of the employee to ride the point of a cut of cars being shoved, and as a result there is a collision in some way. That is the second highest cause.

We go down through the 10 highest causes in the human factor and are now trying to work out jointly what is the best fix to use in correcting these problems.

Mr. SKUBITZ. What do you think are the causes of them?

Mr. FLOHR. There is a variety of causes. This is what the Advisory Committee in dealing with right now. In some cases, it may be that the rule that the employee is working under has an ambiguity in it, so the employee does not receive sufficient guidance. It may be a case where the employee was not properly educated to begin with when he first started to work for the railroad. It may be a problem of simply motivation in some cases. Does he want to comply with the rule.

Mr. SKUBITZ. Could it be age, reflex action, vision, hearing?

Mr. FLOHR. It could be any of these physical factors. We are looking at these items, too.

Mr. SKUBITZ. Mr. Chairman, I have no further questions.

Mr. ROONEY. I have one or two final questions.

Will your Administration have any authority over the \$600 million that we made available in the ConRail bill?

Mr. HALL. Yes, sir. I would expect that to be delegated by the Secretary to the FRA Administrator.

Mr. ROONEY. Will any of that money be delegated to the safety area?

Mr. HALL. In my view, Mr. Chairman, one of the principal uses of that particular section of the bill will be to improve the safety on the railroads. You will recall the particular provision in section 505 which places safety projects on a priority basis assuming other benefits are equal. I would very definitely expect as we administer that program to look carefully at the applications from the carriers to determine what the safety aspects are. We will place safety in a very high priority as far as our criteria.

Mr. ROONEY. One final question.

You are familiar with the MKT's refusal to handle radioactive materials?

Mr. HALL. Yes, sir.

Mr. ROONEY. That article in Traffic World states: "The railroads have no real cause for alarm or high rates since the materials are shipped in DOT-specified containers which have withstood what the Administration called accident torture tests."

Can you tell us what a "torture test" is?

Mr. HALL. Mr. Chairman, I would like to defer that question and have you ask it of Mr. Curtis, who I think is following me to the stand, because that falls in his area.

Mr. ROONEY. You got involved in radioactive materials with Mr. Skubitz.

Mr. HALL. We are looking at those particular casks that Mr. Flohr mentioned, specifically at the request of ERDA and rail carriers. The containers themselves for packaging fall under the jurisdiction of Mr. Curtis. I am sure he would be quite knowledgeable in that area, much more than I am.

Mr. ROONEY. Have you any problems with the Occupational Health and Safety Board?

Mr. HALL. I would say, at the working level, no. At the policy level, the Department of Transportation and the Department of Labor are currently in discussions on how to set up a joint agreement for OSHA standards as opposed to transportation-related safety standards. This is not only in the rail area but also in aviation, Coast Guard and other modes. There was agreement at one time between DOL and DOT as to how to handle OSHA-related activities. That agreement was terminated by the Department of Labor in December 1974, over a year ago. We have been attempting to reestablish that agreement. "We" being the Secretary's Office in this case, ever since then. In the meantime, Mr. Flohr has been working very closely with the OSHA people with regard to railroad safety activities only. We have entered the field of rulemaking in the OSHA area for those OSHA or occupational safety regulations which pertain to the railroad industry. We put out an advance notice last year in this area. We are now about ready to go out with a further notice of proposed rulemaking which will specifically define what is the FRA jurisdiction and where that stops and what is the Department of Labor's OSHA jurisdiction. I would say at our level, at least, we are working very closely. I would not care to comment on the Department.

Mr. FLOHR. I think one other factor is important, that even though the working agreement was canceled, FRA is still receiving and investigating all types of OSHA-related complaints, even though we do not have actual regulations in effect. Our inspectors have been instructed in the field to thoroughly investigate and seek remedial action on any complaint that is received.

Mr. ROONEY. Are you familiar with the legislation which is intended to transfer the safety functions from DOT to the Department of Labor?

Mr. HALL. Yes, sir. In fact, we testified before the Labor Committee of the House.

Mr. ROONEY. What is your opinion as to the merits of this legislation?

Mr. HALL. We oppose the transfer to the Department of Labor. We feel that you are dealing here with a transportation-related safety function. If you put it into a total industrial-related safety function, it would tend to get lost, for one thing. We feel the transportation safety aspects within the FRA should be kept with the expertise in overall rail operations which we believe we have and are building up within the Federal Railroad Administration. Therefore, we oppose any such transfer.

Mr. ROONEY. I have no further questions.

Mr. Skubitz, have you any further questions?

Mr. SKUBITZ. You have a report coming out on March 17.

Mr. HALL. That is right.

Mr. SKUBITZ. Can we expect any big surprises in the report?

Mr. HALL. I don't believe there are any big surprises. We will, I think, lay out a fairly detailed representation of what our current program is and what we plan for the future at the Federal level and a very detailed summary and analysis of the State program, plus some recommendations on how to improve that, but nothing that I would term a big surprise.

Mr. SKUBITZ. I asked you a few questions about transportation of nuclear wastes. At the time I was not familiar with the fact that MKT had refused to transport waste. It disturbs me very much to see the Commission getting into this area because, as I said before, I recall when the AEC intended to create a nuclear waste disposal area in Kansas I vigorously opposed that. One reason that I did was because of the method that they talked about transporting it and, second, the fact that they misled everybody on the safety of salt and the condition of our areas out there. At that time they talked to us about the so-called trains in which they were going to transport the high level wastes and showed us beautiful pictures of stainless steel containers. Inside of that they put a cast iron container with the material in it. Around that they put ceramic. On the outside of that, in order to protect the public against this high level waste, was a lead plate, a lead shield. I think that is enough to wave a red flag that it must be pretty damned dangerous to transport this stuff.

When you talk about insurance, insurance doesn't pay for people's lives. When you start getting a car like that and it is damaged and there is a leak and it gets into the atmosphere, it doesn't affect just the people around the track—God only knows where it is going from that point on. That is one of the responsibilities that is being placed on your shoulders.

I hope you are not given a snow job by using this term "national defense" as a means that we have to have these cars. People's lives come first.

Mr. HALL. We will very definitely take into account your concern. I would like to invite you at the appropriate time to witness some of these tests out at Pueblo.

Mr. SKUBITZ. I would like to see the tests.

Mr. HALL. Very good, sir.

Mr. SKUBITZ. I don't think even a test would convince me, though. That is the trouble.

Mr. ROONEY. Have you discussed with the people in the Department of Labor what jurisdiction OSHA should have over the railroad industry?

Mr. HALL. Yes, we have, Mr. Chairman.

Mr. ROONEY. What areas do you think should be exempt from their jurisdiction?

Mr. HALL. We have had several meetings over the past few months. Mr. Flohr has been very much involved personally. Let me ask him to make some observation in that connection.

Mr. FLOHR. We have been attempting to develop a category or area of concern where FRA would maintain jurisdiction and where the

Department of Labor would have jurisdiction. It basically breaks down to one where anything involving the track, the train upon the track, and any of the facilities that are closely associated with the operation of the train on the track would be Department of Transportation-FRA responsibility. That was so defined in great detail in our advance notice of proposed rulemaking that was published in the Federal Register on March 7, 1975.

The Department of Labor would take jurisdiction of your office type buildings that aren't directly associated with the train on the track and the directly associated supporting facilities.

In addition, in areas where the train on the track is not covered by regulations right now such as drinking water, where we do not have any regulations on drinking water, we would directly adopt the OSHA regulation currently in force on these types of situations.

Mr. ROONEY. How about the roundhouse?

Mr. HALL. The roundhouse would be Federal Railroad Administration responsibility.

Mr. ROONEY. Are you as strict as OSHA is in interpreting these safety regulations?

Mr. FLOHR. I can't really say more strict without comparing on an individual basis one to another. As an example, ladders. For a ladder of the stepladder variety, which is angled or leaned against a structure, we would use the OSHA standards. However, a ladder to the side of a boxcar cannot comply with the existing OSHA standards because general OSHA standards require either a cage to surround the ladder or some kind of a belt insertion in case the employee slips. If we were required to put a cage around the ladder on all boxcars we would have to widen all of the tunnels, change all the overpasses, and change the width of the tracks. So on something like that we have to go back and look at it more clearly. As a matter of fact, we have had regulations on the design of ladders on the sides of equipment for several years. Ever since our Safety Appliance Act was first enacted.

Mr. HALL. To summarize, Mr. Chairman, there are cases where we have what might be called routine industrial environment where we can adopt OSHA regulations just as they are. There are other cases that are unique to the railroad industry where we have to look at it in that context and put out probably our own regulations.

Mr. ROONEY. What is your track record as far as safety is concerned with respect to the industry as a whole?

Mr. HALL. The railroads as a whole?

Mr. ROONEY. Yes.

Mr. HALL. I would say at the moment it is improving but not by any means as good as I think it should be. As you can see from our accidents statistics, the curve is starting to level off but it has not yet gone down. I would very much like to see it go down before I could answer with any degree of assurance that we really have accomplished what we have set out to do.

If you are asking about the relation to OSHA, in other words, what are the injuries per million man-hours related to OSHA, I have just been handed some numbers—and we can supply the details for the record—on injuries per million man-hours for calendar year 1975.

Railroads show 14.32 injuries per million man-hours comparing that with, for instance, coal mining which is 35.44. In other words, we are almost three times better than coal mining. Construction runs 14.18 which is about the same as railroads, up to metal-work construction, which I guess is the high rise metal, 39.88, which is considerably less accident free. Airlines run from the ground overhaul base with an accident rate of 11.3 compared to our 14.3, up to ground crews on airlines which are at 35.5. So we are favorable in comparison to airline ground crews. The one that stands out as being very good is steel manufacturing, 4.45.

Mr. ROONEY. How does the railroad industry compare with other industries on the basis of casualties to employees per million man-hours?

Mr. HALL. It must be understood that prior to January 1, 1975, there were differences in the reporting criteria between the railroad industry and the rest of industry. We must therefore, realize that while there is some degree of comparability in the following tabulation for the year 1974, we will not have total comparability until data has been received for calendar year 1975:

<i>Injuries per 1 million man-hours</i>	
Railroads	14. 32
Coal mining	35. 44
Airlines (flight crews)	28. 33
Airlines (ground crews)	35. 56
Airlines (overhaul base)	11. 31
Steel manufacturing	4. 45
Construction (overall)	14. 18
Construction (concrete)	13. 40
Construction (metal work)	39. 88
Construction (general building)	15. 99
All-industry average	10. 20

Mr. ROONEY. You mentioned having safety standards for tunnels and bridges. Do you have such standards? You don't, according to Senator Pastore.

Mr. HALL. We really do not have regulations per se on bridges and tunnels. We do have engineering capability within the FRA to assist the carriers or the transit authority in some cases or Amtrak to go out and look at bridges. We have not really entered that field in any depth.

Mr. ROONEY. The committee has no further questions at this time.

For the benefit of the members who were not here today and who may have some questions, the record will remain open. I have three other questions that I would like to submit.

Mr. HALL. Fine, Mr. Chairman. May I request one thing. We would like, if possible, to keep the record open so we could submit that March 17 report.

Mr. ROONEY. Without objection, that will be done.

Thank you for your usual fine appearance before this committee.

Mr. HALL. It is always enjoyable to appear before you.

Mr. ROONEY. The next witness is Mr. James T. Curtis, Jr., director, Materials Transportation Bureau, Washington, D.C., who will be accompanied by Mr. Leon D. Sautman, Assistant General Counsel.

You may proceed, Mr. Curtis.

**STATEMENT OF JAMES T. CURTIS, JR., DIRECTOR, MATERIALS
TRANSPORTATION BUREAU, DEPARTMENT OF TRANSPORTATION,
ACCOMPANIED BY LEON D. SANTMAN, ASSISTANT GENERAL
COUNSEL FOR MATERIALS TRANSPORTATION LAW**

Mr. CURTIS. Thank you, Mr. Chairman.

I appreciate this chance to speak with you about the Department of Transportation's experience under the Hazardous Materials Transportation Act of 1974. The Materials Transportation Bureau is fortunate to be able to rely on the Hazardous Materials Transportation Act as a basis for its continuing safety efforts. The act provides expanded authority to deal with the constantly increasing variety and quantity of hazardous materials moving in commerce as well as providing a clear restatement of previously existing authority. We are well along in implementing the act and believe that it is performing a valuable service in the maintenance of an acceptable level of safety in the transportation of hazardous materials.

At the time that act became law on January 3, 1975, the responsibilities and authority of the Secretary of Transportation relating to the transportation of hazardous materials were widely delegated within the Department between the modal administrations and the Office of the Secretary. This diversity of responsibility for various facets of the Department's governance of hazardous materials transportation was a matter of concern even before passage of the act. The act made it feasible to centralize hazardous materials responsibility, and led to establishment of the Materials Transportation Bureau on July 1, 1975.

The Bureau, conceived as a line organization within the Department on the level of an operating administration, is responsible for seeing that hazardous materials which move in commerce move safely. It consists of two organizational elements: The Office of Pipeline Safety Operations, which oversees the safety of both gas and liquid pipelines, and the Office of Hazardous Materials Operations, which is responsible for insuring safety in the transportation of hazardous materials by other modes of conveyance. Essentially, the Bureau exercises the Secretary's authority over internodal hazardous materials functions, and over issuance of hazardous materials regulations and exemptions from those regulations—except regulations governing certain hazardous materials carried on board vessels.

Hazardous materials responsibilities that are exclusive to each individual mode, primarily inspection, compliance and enforcement functions, are carried out by the modal administrations within the Department. The Bureau pursues its safety mission through activities that are based on a continuing evaluation of all aspects of the handling of hazardous materials. The Bureau and the modal administrations conduct and participate in frequent industry seminars, and distribute substantial volumes of informational publications, to insure wide familiarity with existing and new requirements applicable to packaging and carriage of hazardous materials.

Reports of incidents involving hazardous materials that occur in transportation, which are required to be filed by carriers, are examined for early identification of developing problem areas. The Bureau

is also involved in various transportation planning, research and development activities. Recently, we have been examining the feasibility of establishing independent laboratory facilities in order to classify materials and determine if they may be safely introduced into commerce. This action is based on section 109(d)(1) of the act, which as you know directs the Secretary to establish and maintain facilities and technical staff sufficient to provide, with the Federal Government, the capability of evaluating risks connected with the transportation of hazardous materials.

The Federal Railroad Administration provides one example of a model administration that still shares hazardous material responsibilities with the MTB. The Department's regulations dealing with such matters as design of cars carrying hazardous materials were published by the FRA alone prior to establishment of the MTB. Under existing delegations, however, actual issuance of regulations of that nature, to the extent that car design is related to the hazardous cargo to be carried, would be by the MTB, after coordinated development of the regulation by both agencies. Both FRA and MTB are currently examining possible safety improvements in cars which carry hazardous materials, such as use of shelf couplers and use of thermal coatings. Such measures as these, jointly developed by agencies, as they mature into regulatory proposals, will be issued by the MTB and will represent the expertise and cumulative experience of both agencies. After a regulation becomes effective, FRA then oversees compliance by inspection of hazardous materials shipments and by processing, where necessary, enforcement actions against violators.

I now should like to draw your attention to the administration's proposed hazardous materials authorization bill which was transmitted to the Speaker of the House on January 22 of this year. The bill will amend section 115 of the act to authorize appropriations of \$7 million for each of fiscal years 1977 and 1978. In the past, the Department has proposed that authorizations for this program be provided on a basis that would allow appropriations to be made in such amounts as required to carry out our responsibilities under the act. However, in view of the desire of the congressional committee to authorize specific annual amounts, the administration bill proposes that authorizations for hazardous materials activities be extended for 2 years at the level of \$7 million which is the amount Congress authorized for fiscal year 1976.

While the proposed levels in the bill exceed the amount recommended in the President's budget for fiscal year 1977, we believe those levels are appropriate and will provide sufficient latitude to meet any foreseeable program needs.

The bill also proposes two clarifying amendments to the Hazardous Materials Transportation Act. An amendment to section 106 is proposed that will strike the word "extremely" from subsection 106(e). Section 106, as it was passed by the Senate, limited the requirement of registering with the Department of Transportation to shippers and carriers of, and manufacturers of containers for, "extremely" hazardous materials. The conference committee rejected this limitation and deleted the word "extremely" at several places in section 106 but apparently overlooked subsection 106(c), leaving an internal inconsistency.

A second amendment will adjust subsection 107(a) of the act to make it clear that the Secretary's authority to grant exemptions extends to manufacturers of hazardous materials containers, as well as to shippers and carriers. This change is consistent with the rest of the act, which makes all three—shippers, carriers and container manufacturers—subject to the Secretary's safety authority.

This completes my statement, Mr. Chairman. I would be happy to answer any questions the subcommittee may have.

Mr. ROONEY. Thank you, Mr. Curtis.

I was looking at attachment 1, submitted by Mr. Hall, which is a train accident summary. I don't know whether or not you have seen it. There is no indication that there have been any hazardous materials accidents. Have there been?

Mr. CURTIS. Yes, sir.

Mr. ROONEY. What are they? What are the numbers?

Mr. CURTIS. Of the 11,000 hazardous materials incidents reports received during 1975, about 6 percent or 660 were submitted by rail carriers. Those numbers would be probably somewhat consistent with the amount of hazardous materials that are carried by rail versus other modes of transportation.

Mr. ROONEY. I am talking about accidents.

Mr. CURTIS. Accidents because of hazardous materials. I do not have that information. The information is reported to us on an incident basis. Any unintentional release of hazardous commodity requires an incident report.

Mr. ROONEY. Then you should have the record, should you not?

Mr. CURTIS. It would not necessarily be that the accident itself would track with the incident reporting. On rail accidents which we report in our hazardous materials area, for 1974 there were 148 rail accidents involving casualties and evacuations in which 10 persons were killed, 613 people injured, 28 evacuations, involving a total of 11,000 people. Seven of the ten deaths in 1974 were the result of a single tank car explosion in Decatur, Ill. For 1975, the comparable figures are 186 accidents, no deaths, 20 persons injured, and 19 evacuations, involving a total of 4,700-plus people.

Mr. ROONEY. Have you any statistics on the amount of hazardous material that is carried by the railroads versus other modes of transportation?

Mr. CURTIS. Yes, sir. The amount for the railroads is about 7.5 percent, 29 percent moved by highway, 43.5 percent by liquid pipeline, 19.5 percent by water. Those figures are an extrapolation of numbers that come from the Bureau of the Census and the Booz, Allen & Hamilton management consultant study, data from API—American Petroleum Institute—and data from the Manufacturing Chemists Association.

While they are not actual, we feel they do represent a factual extrapolation which puts the problem in the proper dimensions to be examined.

Mr. ROONEY. I missed the rail statistics. What was it?

Mr. CURTIS. 7½ percent.

Mr. ROONEY. Have any regulations been issued governing the routing of rail shipments of hazardous materials?

Mr. CURTIS. No, sir.

Mr. ROONEY. Are there any criteria establishing minimum levels of training and qualifications for railroad employees handling hazardous materials?

Mr. CURTIS. There are some. I am not familiar with all those. They are promulgated by the FRA themselves, sir. I can get that information and submit it for the record.

Mr. ROONEY. I wish you would.

[The following letter was received for the record:]

DEPARTMENT OF TRANSPORTATION,
MATERIALS TRANSPORTATION BUREAU,
Washington, D.C., March 12, 1976.

Hon. FRED B. ROONEY,

Chairman, Subcommittee on Transportation and Commerce, Interstate and Foreign Commerce Committee, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: During the February 24, 1976, hearings before your Subcommittee on the Federal Railroad Safety Authorization Act of 1976, you asked me the following question:

"Are there any criteria establishing minimum levels of training and qualifications for railroad employees handling hazardous materials?"

You accepted my offer to submit for the record, subsequent to the hearing, a response to that question. My response, to be inserted at page 1-73 starting at line 19 of the hearing transcript, is as follows:

With respect to carriers, the hazardous materials regulations of the DOT have been prescribed to define hazardous materials for transportation purposes and to state the precautions that must be observed by the carrier in handling hazardous materials while in transit.

By regulation, rail carriers have the duty to thoroughly instruct their employees in relation to hazardous materials regulations applicable to the rail mode. In accordance with that duty, rail carriers conduct periodic written examinations and provide classroom instruction for employees responsible for the handling of hazardous materials to insure the qualifications of these employees with respect to such handling.

In addition, the FRA has and continues to consider its role in educating railroad employees on hazardous materials matters to be of great importance. Formal classroom instruction for railroad employees emphasizing, among other things, concepts for job-oriented training programs and emergency handling procedures is conducted by the FRA in cooperation with the Transportation Safety Institute at Oklahoma City, Oklahoma.

Information on rail hazardous materials handling rules and procedures was also provided by the FRA to railroad employees at seminars. During 1975 almost 4,000 railroad employees attended these seminars.

The success of the FRA's educational efforts demonstrates the rail industry's recognition of the vital role the FRA plays in insuring that employees responsible for handling hazardous materials are trained and qualified to do so.

Sincerely,

JAMES T. CURTIS, JR.

Mr. ROONEY. Are railroads required to file a registration statement in order to transport hazardous materials?

Mr. CURTIS. No.

Mr. ROONEY. Don't you think it would be a good idea that they should be required under the act?

Mr. CURTIS. That matter is presently under consideration as a part of the Bureau organization, sir. We may go to a registration program. We may not. It is one of those matters that are under consideration and a determination will be made shortly.

Mr. ROONEY. What inspections do you make to make sure that the railroads comply with your regulations?

Mr. CURTIS. Those inspections are made by the FRA, sir.

Mr. ROONEY. How many inspectors are engaged in this type of activity?

Mr. CURTIS. I do not have any specific number on how many of the FRA safety inspectors are specifically assigned to hazardous materials inspection duty.

As I mentioned in my statement, sir, the investigation of surveillance matters of the railroads is continuing in the hands of the Federal Railroad Administration. I see from Mr. Hall's statement that he conducted 132 field accident investigations during 1975, in which the presence of hazardous materials was an important aspect of the accident. In addition, 527 special inspections of shipper facilities were conducted under his jurisdiction. The FRA in total performed 3,832 inspections of rail carriers, rail shippers and specification container manufacturers in 1975, which was a 50-percent increase over their efforts in the previous year.

Mr. ROONEY. What has DOT done to establish and maintain a central reporting system and develop a center to provide the local law enforcement and firefighting personnel with information and advice to deal with any kind of an emergency?

Mr. CURTIS. We currently are working with the National Fire Protection Association on a potential contract to be let in that particular area, sir. There is ongoing study work in the Department. The center has not been established but, as the law indicates, it will be established and we will be prepared to make available advice and guidance to emergency personnel of the firefighting variety, sir.

Mr. ROONEY. Have you any comments on the issue of transporting radioactive materials in view of the MKT refusal to carry such materials?

Mr. CURTIS. It is a matter of continuing interest. As you indicated, the media article which you described talked about a test which is a standard DOT drop test. As Mr. Hall and his staff indicated, we have that particular issue of transport of radioactive material under scrutiny at the moment, and that is the reason we intend to do a further testing program at the Colorado facility in late spring or early summer, sir.

Mr. ROONEY. Can a carrier refuse to handle such materials?

Mr. CURTIS. That is a question currently being argued in the courts. My personal opinion is under their common carrier authority they should not be allowed to pick and choose, sir.

Mr. ROONEY. I have no further questions.

Mr. Skubitz.

Mr. SKUBITZ. Mr. Curtis, you were here when I called attention to the article about the MKT refusing to haul nuclear material?

Mr. CURTIS. Yes, sir.

Mr. SKUBITZ. In your opinion, is there any extreme safety hazard in a situation like this?

Mr. CURTIS. There are precautions which should be taken for the packaging of any of the materials that we regulate. There is a range and degree of severity of the potential damage for any of the materials that we regulate. Therefore, we must be very careful in the case of radioactive material and radioactive wastes, which you described, considering the potential hazard. We must take the standard degree of

caution that we take in regulating packages for any hazardous material, sir.

Mr. SKUBITZ. You speak of it just like it is a little old milk package or something of that sort and you have to make sure you can contain it.

Mr. CURTIS. No, sir. I am sorry. I intended to indicate that there is a range of hazards and a range of packaging standards that have to do with the potential hazard involved with the commodity, sir.

Mr. SKUBITZ. My recollection is that in the Price-Anderson bill we provide up to \$500 million worth of insurance to protect against atomic disasters. Would you suggest if we are going to haul waste materials that are highly hazardous over the rails, that the rails be given the same protection by the Government?

Mr. CURTIS. I would not object to that.

Mr. SKUBITZ. Do you think the rails ought to be responsible for it?

Mr. CURTIS. Yes, sir.

Mr. SKUBITZ. They ought to be responsible for any accident that occurs when they say: "We don't want to haul this. It is too dangerous to haul. We could not afford to haul it. If there is an accident we are broke"? Do you think they ought to be forced to haul such material?

Mr. CURTIS. If in fact we determine that a particular commodity could not be safely transported, then I think we should ban the transportation of it. In the case of the material we are speaking of here, I do not think that that is the case. In other words, it appears to us that the packages up to this time, based on the transportation history, have been adequate, but, as I indicated to the Chairman, sir, this is the reason that we are going to participate in further tests with the FRA at the FRA facility in Colorado to determine the adequacy of those packages under pure transportation environment.

Mr. SKUBITZ. What was the cause of the leaks of these small, safe packages on planes?

Mr. CURTIS. I would say it is quite possible they were not properly packaged. I think those who introduced this type of commodity into the transportation stream must be very careful as to how they do it.

Mr. SKUBITZ. I like the words "very careful" and I like the words "I am sorry" when things happen, but if there was an accident on the plane at the time when these leaks occurred and lives were endangered or lost because of it, do you think the airline ought to be responsible for that?

Mr. CURTIS. I think there is a joint responsibility between the transporter of the shipment and that individual or individuals or company that introduced the material into the commerce stream.

Mr. SKUBITZ. They say: "We don't want to bother with this. We can't afford to handle that sort of thing. It costs too much money. One accident, and we are out of business." What happens in a case like that? That is exactly where MKT is today. It is a weak railroad. It is refusing to haul a dangerous commodity. It says, "If there was a wreck that wiped out a whole community because of atomic leakages, we are broke." Yet we turn around and say, "You have got to haul it." Does it make a little bit of sense to you if the Government or Government agencies are going to require that a railroad handle this, it ought to be willing also to stand the losses that might be incurred by the rail-

road because this so-called package just didn't quite stand up to par but leaked somewhere along the line in an accident?

Mr. CURTIS. Speaking of leaks, this is the reason we must constantly—

Mr. SKUBITZ. I don't want you to duck my question.

I want an answer. Should the Government or should it not be responsible when it forces the carrier to carry an item that is so highly hazardous and dangerous that that company's back is to the wall and is wiped out because you made an error in judgment about the safety of the package withstanding any sort of a wreck?

Mr. CURTIS. I would consider that as a last resort measure, sir.

Mr. SKUBITZ. In other words, you want to duck the question.

Mr. CURTIS. No, I am not willing to duck the question.

Mr. SKUBITZ. You are doing it.

Mr. CURTIS. I think a company is in a particular business, it must accept that there are certain risks attendant to being in that particular business. It may be that a common carrier has a higher risk than some other things, but I am certain we can find other businesses that have greater risks. I think one of the problems is that we bail out private industry too often, or possibly are too ready to bail out private industry when they do not take all precautions. If it comes down to the point that this material must be transported, and the Federal Government feels that a catastrophic loss should not be imposed upon a particular business, then the Federal Government would have to decide what it wanted to do. You have proposed a remedy that I would find acceptable as a last resort, sir.

Mr. SKUBITZ. Would you suggest that the Government get out of the liability with respect to atomic plants where we are ready to assume up to \$500 million of it?

Mr. CURTIS. No, sir, I would not.

Mr. SKUBITZ. Why?

Mr. CURTIS. The Government in its wisdom—

Mr. SKUBITZ. They are supposed to be safe.

Mr. CURTIS. I am not capable of engineering atomic plants, but the Government has made that particular decision and I think it is one that we could not turn back from at this particular time, sir.

Mr. SKUBITZ. That is all, Mr. Chairman.

Mr. ROONEY. I want to ask you one final question, Mr. Curtis. What agency has the jurisdiction over the shipment in interstate commerce of hazardous material? Would it be DOT?

Mr. CURTIS. It is the Department of Transportation, sir, and specifically the Secretary has delegated those duties to the Materials Transportation Bureau.

Mr. ROONEY. ICC would have nothing to do with it? AEC would have nothing to do with it?

Mr. CURTIS. I possibly did not hear your question.

Mr. ROONEY. What agency would have final jurisdiction over the shipment of hazardous materials on the interstate railroads?

Mr. CURTIS. The standards for packaging, containers, are with the DOT, sir.

Mr. ROONEY. No other agency? No other department?

Mr. CURTIS. In the case of atomic materials, we promulgate regulations which are reviewed by ERDA and NRC.

Mr. ROONEY. I have no further questions.

Thank you very much.

Mr. CURTIS. Thank you, sir.

Mr. ROONEY. Our final witness today will be Mr. Webster B. Todd, Jr., Chairman, National Transportation Safety Board, Washington, D.C.

We welcome you, Mr. Todd.

I would appreciate it very much if you would introduce your colleagues for the record.

STATEMENT OF WEBSTER B. TODD, JR., CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD, ACCOMPANIED BY FRITZ L. PULS, GENERAL COUNSEL; HENRY H. WAKELAND, DIRECTOR, BUREAU OF SURFACE TRANSPORTATION SAFETY; THOMAS DeW. STYLES, CHIEF, RAILROAD SAFETY DIVISION; AND LUDWIG BENNER, CHIEF, HAZARDOUS MATERIALS SAFETY DIVISION

Mr. Todd. I would like to do that. I have with me today on my right Mr. Fritz Puls, our General Counsel; on my left Henry Wakeland, Director of the Bureau of Surface Transportation Safety; Tom Styles, Chief of our Railway Safety Division; and Mr. Ludwig Benner, Chief of our Hazardous Materials Safety Division.

Before we get into specific legislation, I would like to bring you up to date on where the Safety Board has moved last year and say that since April 1, 1975, the Safety Board has been operating under the Independent Safety Board Act of 1974 [title III, Public Law 93-633], which requires us to investigate any railroad accident which involves a fatality, a passenger train, or substantial property damage. Although funds to carry out this broadened mandate were not made available in calendar year 1975, the necessary staffing program is well underway at this time.

The Safety Board has been able to hire or engage to hire 23 new professional railroad accident investigators to investigate an estimated 735 accidents per year. This is less than the minimum complement we believed necessary to perform the required investigations. It is expected that they will all be in the field conducting investigations by the first week of April. They will work out of existing Safety Board field offices plus a new office in Atlanta, which is well located to service both railroad and pipeline accidents.

We intend at this time to investigate all the railroad accidents as required under the new law. For the first time, statistics will be generated independently of the railroad industry's own interpretation and a number of new subjects will be included in our statistical literature. There will be both full accident investigation reports and short form reports. The short form does not demand protracted writing and editorial effort, but reflects the facts needed as a basis for statistical analysis. This very comprehensive form is designed to be the source of accident data for a computerized statistical analysis of pedestrian or "trespasser" fatalities, expected toward the end of 1977..

The Safety Board issued 38 recommendations in the railroad mode in 1975. To date, 20 of these recommendations have been accepted, and the resultant activity by the addressee agencies is either underway or planned. An example will illustrate the activity.

Late in 1974, the Federal Railroad Administration issued emergency order No. 5 in response to Safety Board recommendations. The order required the switching of tank cars containing compressed flammable substances only when coupled to a locomotive, thus preventing tank cars from rolling free during switching. FRA had previously declined to make this regulation as recommended by NTSB. Since FRA issued emergency order No. 5 there have been no further large-scale hazardous materials accidents following tank car damage in switching. In 1975, the Safety Board followed up by recommending that the order be superseded by regulations.

Additionally, recommendations were made to FRA to determine the best combination of tank car head shield and top and bottom shelf coupler, and to require that combination on tank cars. The Safety Board also urged FRA to issue radio regulations and regulations that will insure that trains are controlled in compliance with signal indications when engineers fail to so comply. The recommendations issued in 1975 involved hazardous materials, commuter train operation, and train radios.

H.R. 11837 would authorize \$35 million each for fiscal years ending September 30, 1977 and September 30, 1978; H.R. 11804 authorizes \$35 million for the fiscal year ending September 30, 1977 only. We believe that the 2-year provision of H.R. 11837 is clearly advantageous from a management point of view, and would give the Federal Railroad Administration more latitude and flexibility in their planning and programing.

Section 2 of H.R. 11804 would authorize for FRA \$18 million for salary and expenses for not more than 500 safety inspectors and 45 signal and train control inspectors. I have already referred to the Safety Board's addition of 23 new railroad accident investigators. I would like to stress that duplication of effort has been and is being scrupulously guarded against by both agencies. In fact, the Safety Board's increased investigative capability should release within FRA for regulatory and enforcement activities manpower hitherto used in accident investigation. The Safety Board has worked closely with FRA, and we have executed an interagency agreement with the Department of Transportation. Included in this agreement are provisions applicable to our relationship with FRA, the prime intent of which is to preclude duplication of effort in accident investigation.

Section 4 of H.R. 11804 would require sleeping quarters for train crews for interrupted sleep away from yard switching. In the accident which occurred at Decatur, Ill., on July 18, 1974, a fire and explosion of hazardous materials being switched at a yard caused seven fatalities among railroad employees who fled from a bunkhouse located with a railroad yard. This provision of H.R. 11804 has a safety effect as well as a comfort effect. The Board favors the provision.

Section 6 of H.R. 11804 would enact as Federal law to present operating rules in the form most used by industry. These are the flagging rule—"Rule 99"—and so-called blue flag rules. The Safety Board

opposes the practice of legislating on detailed regulatory matters, subject to improvement and change, for which the Congress has given necessary regulatory authority to the Department of Transportation.

Further, the specific words of the flagging rule which is proposed for enactment—section 6(g)—have technical shortcomings. Because it is ambiguous, the section does not have a logic for objective enforcement. The rule effectively requires flagging only according to the judgment of the flagman, and he is given no more specific guidance.

Rule 99 is a so-called hanging rule. It may be evident that flagging was required after an accident occurs, but it is very difficult for a flagman or anyone else to comply with its requirements consistently. In fact, railroads with all their experience, have never produced a definitive list of necessary criteria for flagging. The flagman would violate this proposed Federal law if, on a given occasion, he failed to diagnose this need for flagging from the circumstance before an accident or potential accident. Such a vague incomplete rule tends to make it appear that a problem is solved, thus diverting effort, when the problem has merely been converted into an unfulfilled responsibility.

This portion of H.R. 11804 is also difficult to enforce because it attempts to lay responsibility on a crew member. The effect may be that all crew members are made responsible. The identity of the crew position responsible cannot be determined from this language.

This problem of ambiguity in longstanding rules was first expressed by the Safety Board in a special study, signals, and operating rules as causal factors in train accidents, which was issued February 7, 1972. It is an extremely important problem because such rules do not insure safe operation and they are unfair to employees. The Board is therefore opposed to enactment of section 6(g).

The Safety Board believes that there is a need for protection of employees as provided by section 6(h) but believes it should be left to the Federal Railroad Administration's regulatory authority.

The Safety Board has expressed itself in favor of having the rear of trains marked in a conspicuous manner. A recommendation to that effect has been made and studies are underway. We believe, however, it should be accomplished by regulations rather than by law.

Section 6(j) would require by law that FRA be divided into 10 regional offices under the direct control of the Associate Administrator for Safety for the purpose of administering and enforcing all Federal railroad safety laws. We believe that such matters should be left to the discretion of the Administrator.

Mr. Chairman, this concludes my prepared statement.

I and the special staff with me would be delighted to answer any questions you may have.

Mr. ROONEY. Thank you very much, Chairman Todd.

I understand this is the first time you have appeared before this committee and I want to welcome you and congratulate you on your recent appointment as chairman of this very important Board. We will certainly be looking forward to working with you as far as this committee is concerned.

How does your railroad safety staff compare in numbers with other divisions responsible for other modes of transportation?

Mr. TODD. Under the appropriations last year we were able to add considerably to our railroad safety staff. We have I guess 23, is it now?

Mr. STYLES. Twenty-three are being added.

Mr. ROONEY. Are they all in training now?

Mr. STYLES. Half of them are in training now and the others will come on as of March 15.

Mr. TODD. This would compare with seven in highway, three in marine and two in hazardous materials at the moment. We have requested additional spaces for those other modes.

Mr. ROONEY. How about aviation?

Mr. TODD. Aviation has about 183, still the bulk of the Board's work force.

Mr. ROONEY. The law requires you to investigate and determine the probable cause of any railroad accident involving a fatality, substantial property damage, or a passenger train. How much is substantial property damage before your investigating committee will involve itself?

Mr. TODD. We have chosen the figure of \$500,000 as the starting point. We may have to modify that. We took that figure, I understand, because that was used in the original version of the Independence Act, I think we will just have to see how that goes.

Mr. ROONEY. Do you send Board members out on your investigations?

Mr. TODD. At the moment, as I understand the activities of the Board members, we do not have a comparable team structure for surface accidents as exists in the aviation mode. I think that this probably is a practice that should be expanded to the surface area, not only because of the expanded responsibilities under the Independence Act, but also because of the severity of some of the accidents that occur in other modes.

Mr. ROONEY. The law requires you to evaluate the adequacy of the procedures concerning the transportation of hazardous materials; is that correct?

Mr. TODD. That is correct; yes.

Mr. PULS. Yes, sir; that is correct.

Mr. ROONEY. Have you done this for any Federal agency or mode of transportation like railroads?

Mr. TODD. I think thus far we have really been doing it in the course of investigating specific accidents, but I would yield to Mr. Wakeland on that. I know there is also a provision in the law for a biennial review and 1976 is one of the years; is it not?

Mr. WAKELAND. We are going to start the biennial review process very shortly. Primarily the numerical limitations on our staff have held us back from making formal evaluations on hazardous materials as yet. We expect to get it done by the end of the year.

Mr. ROONEY. Did you agree with the breakdown of the accidents regarding hazardous materials that were just submitted to the committee by Mr. Curtis? Did you hear those statistics?

Mr. TODD. I would say the percentage allocation within modes probably agrees. Numerically it depends on what you count. Our figures show that from 1971 to 1975 of roughly 32,000 hazardous materials accidents and incidents, 7 percent were rail and 90 percent were high-

way. We don't have a pipeline figure in there. Air and water were 2 and 1 percent.

Mr. ROONEY. Do you agree with him on the volume of hazardous materials shipped by rail versus other modes?

Mr. WAKELAND. They originate those statistics and we have no source by which we can disagree.

Mr. ROONEY. Do you feel that you are properly staffed to handle all of the problems with respect to railroad safety?

Mr. TODD. At this stage, having just been in front of Chairman McFall last week defending a budget that I saw for the first time 3 days prior, I would have to conclude that we are a little bit understaffed. Addressing the new charges in the Independence Act, what we are going to be able to reorganize along functional lines in what has traditionally been the Bureau of Aviation Safety and what we will have to add in the way of new people. I am not in a position to say. I can tell you my professional staff feels severely shortchanged.

Mr. ROONEY. We have that same problem ourselves, don't we, Mr. Skubitz.

Mr. SKUBITZ. Mr. Chairman, I am not so sure but that you and I ought not to negotiate on that.

Mr. ROONEY. I recognize the gentleman from Kansas.

Mr. SKUBITZ. Mr. Todd, I want to welcome you here. I understand you have been on the job now for only a few weeks; is that correct?

Mr. TODD. That is correct, sir.

Mr. SKUBITZ. I agree with your statement regarding some of the specifics of this bill relating to lights and things of that sort, not that I disagree that things like this should be done, but it doesn't seem proper to place it in legislation. It seems to me, it is really a common-sense matter that ought to be done in the name of safety. I think of this one point: A blue signal displayed at both ends of an engine to indicate that workmen are under a train. It is inconceivable to me that safety would not require that there be some notification when a man is under a train. Does this exist today that railroads do not place signals to show when a worker is under a train working?

Mr. TODD. I will yield to my railroad experts, Mr. Skubitz.

Mr. STYLES. It has been my experience that this blue-flag rule on the railroad has probably been one of the most respected rules that they have in the book of operating rules.

Mr. SKUBITZ. Why is it here, then?

Mr. STYLES. I can't answer that.

Mr. SKUBITZ. You see, things like that are usually to remedy a situation that exists, and it raises the question in my mind.

Mr. STYLES. There are circumstances where certain activities go on in switching yards where people find it necessary to get either between cars or under cars, which is not really in the area of repairing cars that this particular blue-flag rule is normally used to protect. It may be whoever proposed that rule is thinking about the fact that certain activities in switching yards need to be protected also. I think that falls in the area of interpretation as to whether or not it actually comes under the blue flag.

Mr. SKUBITZ. I am in full agreement that something ought to be done about this thing. If you folks can't do it then I say, yes, we

ought to put something in these rules about it. I just happen to have an uncle who had both legs cut off in a train accident when he was hopping on a car and missed. This sort of accident sticks in my mind. I have had friends who had their hands cut when they were trying to work the brakes and things of that sort. I think that every precaution ought to be taken, but I don't think it is the business of the Congress to try to itemize what ought to be done.

After lecturing to you on that, No. 2, you have hired 23 new people; is that correct?

Mr. TODD. Yes.

Mr. SKUBITZ. How many of them are railroad men, members of the brotherhoods? How many are from the brotherhood organizations, how many from the railroads?

Mr. STYLES. I can't tell you how many specifically belong to one of the given brotherhoods and how many do not, but in every case these people are railroad people and in a few cases people who have transferred from the Federal Railroad Administration.

Mr. SKUBITZ. Are they people who have worked on the safety phase of it or have they been pushing a pencil in an office?

Mr. STYLES. In every case these are actively railroad people, either operating personnel or track or mechanical employees.

Mr. SKUBITZ. Mr. Chairman, I ask unanimous consent that a list of the 23 employes be placed in the record at this time and their qualifications for the job.

Mr. ROONEY. Without objection.

[The following information was received for the record:]

LIST OF 23 NEW EMPLOYEES AND THEIR QUALIFICATIONS

BAKEMAN, John R., GS-13.—30 years with Rock Island Railroad as General Road Foreman of Engines, Assistant Chief Mechanical Officer, and Operating Rules Examiner.

BARNITT, Garner L., GS-13.—2 years with Federal Railroad Administration as a Supervisor, Civil Engineer; 14 years with Atchison, Topeka & Santa Fe Railroad as Division Engineer, Roadmaster, and as a Corpsman on the Survey Corps.

BOURCET, John B., GS-13.—34 years with Penn Central and predecessor Company as Supervisor, Mechanical Training; Regional Supervisor of Air Brakes; Safety Supervisor; Road Foreman of Engines; and Locomotive Engineer.

BUTLER, Edwin R., Jr., GS-13.—Transferred to National Transportation Safety Board from Federal Railroad Administration, where for 6 years he was a Railroad Safety Inspector; before that he was employed with Aeroquip Corporation as a Service Engineer and with the Chicago and Northwestern Railway as Supervisor in the Mechanical Department.

CROGNALE, Arthur Jr., GS-13.—Transferred to National Transportation Safety Board from Federal Railroad Administration, where he has been employed for 2 years as a Track Safety Inspector; before joining FRA he was employed with Penn Central for 5 years as a Supervisor of Track and as Assistant Bridge and Building Supervisor.

GARNER, Frank J., GS-13.—27 years with the Chicago, Rock Island and Pacific Railroad, where he served as Assistant General Manager; Chief of Yard and Terminal Operations; Division Superintendent; Trainmaster, and Trainman.

GOBER, Russell F., GS-12.—Before joining the National Transportation Safety Board, Mr. Gober worked for the Florida East Coast Railway for 12 years serving in positions ranging from Trainman, Transportation Supervisor to Trainmaster.

INGLIS, Gordon J., GS-12.—Employed for 30 years on the former Chicago, Burlington and Quincy Railroad and the Burlington Northern as a Locomotive Engineer and Road Foreman of Engines.

JACKSON, Randall A., GS-12.—8 years with the Fairport Painesville & Eastern Railway Company where he served as the Assistant to the General Manager (Operations); he was earlier employed on the Southern Railway in various operating positions.

JENNINGS, Thomas O., GS-13.—32 years with the Penn Central; was employed as a Safety Superintendent, Trainmaster, and Trainman.

JONES, Stanley O., GS-13.—Worked for Chicago, Milwaukee and St. Paul Railroad for 34 years as Division Superintendent, Trainmaster, and Trainman.

JUDSON, Richard C., GS-12.—27 years of railroad experience; was employed with the Washington Utilities and Transportation Commission as a Railroad Inspector, and with the Burlington Northern Railroad as a Terminal Trainmaster and Trainman.

KENTNER, Raymond H., GS-12.—34 years service with the Chicago, Milwaukee, St. Paul and Pacific Railroad Company; Labor Relations Manager, Traveling Engineer, Trainmaster, and Locomotive Engineer.

KROHN, Jerome H., GS-12.—Was employed with the Chicago, Milwaukee and St. Paul Railroad for 8 years, as Assistant Division Engineer, Assistant Engineer, Staff Engineer and Survey Corpsman.

MESSENGER, Donald E., GS-13.—Transferred to National Transportation Safety Board from Federal Railroad Administration where he was a Rail Accident Analyst for 12 years; before joining FRA he was employed with Chicago Rock Island and Pacific Railroad for 24 years, as a Trainmaster, and Trainman.

MILBURN, Chester F., GS-13.—Worked for Penn Central for 33 years as a Locomotive Engineer, Assistant Trainmaster, Trainmaster and Assistant Road Foreman of Engineers.

RICE, Edward P., GS-12.—23 years with the Atlanta & St. Andrews Bay Railway Company where, after serving on various operating and mechanical positions, became the Chief Mechanical Officer.

SAPP, Leon H., GS-13.—9 years with the Missouri-Kansas-Texas Railroad; served as Assistant Superintendent of Rules and Safety, Trainmaster, Transportation Inspector and System Trainmaster.

STRAWSER, Gerald E., GS-13.—Transfers to National Transportation Safety Board from Federal Railroad Administration, where he was employed for 9 years as an Operating Practices Safety Inspector. Prior to his service with the FRA was employed on the Detroit and Toledo Shore Line Railroad as Yardmaster and Trainman.

TAYLOR, Douglas H., GS-13.—Served as Director of Safety for the Missouri-Kansas-Texas for 3 years; prior to that appointment he served 3 years as Trainmaster and Sales Representative for Missouri Pacific Railroad.

TOAL, Thurman W., GS-13.—27 years Experience with the Chicago Rock Island and Pacific Railroad Company where he has served as Division Engineer, Superintendent, and General Roadmaster.

ZIELINSKI, William G., GS-12.—Comes to the National Transportation Safety Board from New York State Department of Transportation where for 5 years he was a Railroad and Structure Inspector. Mr. Zielinski also had 4 years experience with the Pennsylvania Railroad Company as a Staff Engineer.

Mr. SKUBITZ. That is all I have.

Mr. ROONEY. I have no further questions.

This will conclude our hearings for today. We will meet tomorrow at 2 o'clock in this room.

[Whereupon, at 4:30 p.m., the hearing adjourned, to reconvene at 2 p.m., Wednesday, February 25, 1976.]

FEDERAL RAILROAD SAFETY AUTHORIZATION ACT OF 1976

WEDNESDAY, FEBRUARY 25, 1976

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to notice, in room 2218, Rayburn House Office Building, Hon. Fred B. Rooney (chairman) presiding.

Mr. ROONEY. The subcommittee will come to order.

Today we continue our hearings on railroad safety.

Yesterday we heard from representatives of the Department of Transportation and the National Transportation Safety Board.

Today we will hear from the National Association of Regulatory Utility Commissioners and representatives of the railroad industry.

Last year, as I recall, not a single representative of the railroad industry appeared in opposition to or in support of this legislation. After looking over some of the statements last night, I am sure that today we will discover what makes this year so different from last.

Our first witness is Mr. James Kelly, president of the National Association of Regulatory Utility Commissioners.

We welcome you to the subcommittee, and we will be happy to receive your testimony at this time.

I want also to pay special tribute at this time to Mr. Kelly as a member of the Pennsylvania Public Utility Commission. We welcome you today.

STATEMENT OF JAMES MCGIRR KELLY, PRESIDENT, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS, ACCOMPANIED BY SUMNER J. KATZ, ASSISTANT GENERAL COUNSEL

Mr. KELLY. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, my name is Mr. James McGirr Kelly. I am the president of the National Association of Regulatory Utility Commissioners and a member of the Pennsylvania Public Utility Commission. I am accompanied today by Mr. Sumner J. Katz, NARUC assistant general counsel.

The NARUC is a quasi-governmental nonprofit organization founded in 1889. Within its membership are the governmental agencies of the 50 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 the NARUC appreciate your invitation to make their views known in the critical and pressing area of railroad safety.

Mr. Chairman, I think it is very meaningful to note that we have the opportunity to appear before this subcommittee 3 weeks after the President signed into law the Railroad Revitalization and Regulatory Reform Act of 1976. It is obvious that the great importance of the railroad industry in this country has been reassessed as Congress has added new impetus to attempts to get this industry back on its feet.

As State regulators, we take the title of his major new law literally. We hope that this new congressional initiative will indeed revitalize and reform the railroads of this Nation so they can better serve the American people.

Along with this revitalization and reform, we respectfully hope that the Congress will take heed to the growing railroad safety problems that have taken the lives or mutilated thousands of Americans each year.

Since its 1970 inception, the members of the NARUC have vigorously supported the goals created by the Federal Railroad Safety Act.

As you know, section 206 of the 1970 act establishes a program of extensive State participation in the enforcement of Federal railroad safety standards either by certification or by agreement with the Federal Railroad Administration (FRA). Under that program, States receiving certification from or acting under agreement with the FRA would provide both money and manpower to insure that safety regulations issued here in Washington are in fact implemented throughout the country. Federal grants cover up to 50 percent of the entire State effort. States receiving Federal funds must annually invest, at a minimum, the same level of State expenditures incurred during the year preceeding the passage of the 1970 act.

While deliberating upon the provisions of the 1970 act, Congress determined that a Federal-State partnership was required if safety on the railroads were ever to evolve from a pious wish to a necessary reality. We concur in that judgment. That partnership has been slow in evolving and is, in our opinion, ripe for rapid development, given the increasingly high rates of loss of life and property on the Nation's railroads.

Mr. Chairman, the NARUC supports the provision in H.R. 11804 that amends the Federal Railroad Safety Act of 1970 by authorizing an amount not to exceed \$3,500,000 to carry out the provisions of section 206(d) of the act—the rail safety grants-in-aid program to the States for fiscal year 1977.

About this time last year we were able to report to you that eight States had been admitted to the FRA program to enforce Federal track standards.

As of this date today, 11 States are either certified or have entered into an agreement with the Federal Railroad Administration to enforce the Federal track standards. The FRA has told us that additionally, about 14 more States have indicated that they will be participating in the track standard enforcement program by the end of 1977.

Also, it was announced in November 1975 that the FRA had revised its track standard inspector qualifications and that new guidelines had been drawn up for the equipment inspection area. The FRA has said that it anticipates 180 qualified State inspectors to be enforcing Federal track and equipment standards by 1977.

Furthermore, it is our understanding that State participation regulations will be promulgated by FRA in 1977 in connection with occupational safety standards.

Mr. Chairman, in authorization hearings for fiscal year 1975 appropriations related to the 1970 act, we expressed our concerns to the Congress and requested an amendment to the 1970 act which would require a full report from FRA in March 1976 on the State participation program. Our concerns registered on the Congress. Our amendment was adopted (section 203 of Public Law 93-633).

We are told by the FRA that this special report is currently being compiled for submission to Congress by March 17, 1976 in accordance with section 203 of Public Law 93-633, the Rail Safety Improvement Act of 1974.

That report will project the following number of States planning to participate in fiscal year 1977 enforcement of rail safety standards: In regard to track standards, 28 States; concerning freight car safety, 19 States; and in regard to forthcoming occupational safety standards, 17 States.

Mr. Chairman, as spokesman for the Nation's State regulators, I can say that the members of the NARUC are more willing than ever to participate in the partnership envisioned by Congress in 1970. There is no question that the slaughter on the Nation's rail network continues unabated. Although rail safety is a national problem, it is essential to bear in mind that each accident is a local tragedy fraught with pain and responsibility for local citizens and Government officials. Congress realized this fact by mandating State participation in the enforcement of Federal standards.

The dangers involved with railroad accidents are, as you well know, no light matter. An Associated Press story picked up in the Washington Post on September 2, 1975 reported that a large freight train carrying propane gas had derailed near Des Moines, Iowa, beneath a busy highway overpass triggering what the AP referred to as a spectacular series of explosions.

According to the wire story, at least three persons were injured, including a motorcyclist whose cycle was literally blown from the interstate highway overpass. How they all escaped death seems to defy fate itself.

The wire story went on to note that several buildings within a mile radius of the derailment site were ordered evacuated for fear of more explosions from four cars menaced by the flames.

Nine railroad cars had derailed. Four of them had exploded, said AP, sending geysers of flames 1,000 feet into the air. The story said there was extensive property damage reported in the area from the force of the blast and said scores of homes suffered shattered windows.

Meanwhile, FRA accident statistics reported that for the first 8 months of 1975 there were an estimated 5,000 train accidents. Eighty railroad employees were killed in train accidents as were seven pas-

sengers. Total deaths due to train and train-related accidents for the first 8 months of last year were nearly 1,000. FRA additionally reported about 31,553 injuries during that same period of time and noted that there were approximately 68.06 casualties per million train miles. Obviously, Mr. Chairman, this is a very serious business.

Mr. Chairman, the provision of financial assistance to the States for the rail safety program on a 50-50 matching basis will not only invigorate State participation but will also permit the Congress to implement its national safety programs for far less expense than it would otherwise cost for the Federal Government to assume the entire financial burden.

We have met several times this year and last year with FRA staff to discuss possible improvements in this joint Federal-State program and we believe that the future can be very promising, provided that the Congress endorses necessary expenditures to continue and improve the program.

The members of the NARUC, meanwhile, are confident that this rather moderate Federal and State investment will return to the American people incalculable savings in lives and limbs not lost, and property not destroyed, due to railroad accidents that could otherwise be avoided by increased surveillance.

I want to thank you, Mr. Chairman, for this opportunity to make the views of the NARUC known to you.

Mr. ROONEY. Thank you very much, Mr. Kelly.

I want also to thank you on behalf of myself and my colleagues for that very fine luncheon that the National Association of Regulatory Utility Commissioners had for the Members of Congress today. It is always a highlight of the receptions here on the Hill. Each year I look forward to it.

I am glad once again that Pennsylvania is so ably represented by you as the President of NARUC, because I know that many Members of Congress share my deep appreciation for what NARUC has done to inform Members of Congress about what your Association does for the 50 States in this great Nation.

Your predecessor, George Bloom, was an outstanding and dedicated individual, who was really concerned about the individual States as well as the Federal Government.

I welcome you to this committee today.

Mr. KELLY. Thank you very much, Mr. Chairman. You are most gracious in your remarks to me, and accurate in your remarks concerning Mr. Bloom. I am most grateful for them.

Mr. ROONEY. Mr. Kelly, you mentioned in your statement two or three occasions the provision of financial assistance to the States for the railroad safety program on a 50-50 matching basis. Can you tell me why only 12 States have taken advantage of this offer?

In the beginning of your statement you talked about how two or three more States are going to be involved, but this program has been in effect for some time and only 12 States are taking advantage of this Federal assistance.

Mr. KELLY. One of the problems, I believe, Congressman Rooney, is the requirement that the Federal Railroad Administration has put on the qualifications for safety inspectors. Unfortunately they were very

stringent and there are just not enough qualified people to undertake this inammoth task.

Mr. KATZ has worked in this area over a period of time. I asked him the same question. Our impression is that there has been by the FRA a very difficult requirement, and perhaps through NARUC we will be able to release some of those or reform some of those requirements so we can get greater participation.

Mr. ROONEY. You are familiar, I believe, with a similar program this committee initiated under the Natural Gas Pipeline Safety Act of 1968.

Mr. KELLY. Yes.

Mr. ROONEY. Didn't that program get off to a much faster start?

Mr. KELLY. As far as I know, a much faster start. It has been accepted in a greater area; that is correct. I think there may be a distinction in the requirements.

Mr. KATZ. If I may add to that, yes; it did get off to a faster start. I think within about 2 or 3 years nearly all 50 States were participating in this joint Federal-State program under the Natural Gas Pipeline Safety Act of 1968.

Some of the provisions of the Federal Railroad Safety Act of 1970 are a little different from those of the Natural Gas Pipeline Safety Act in terms of State participation.

In addition, actually there were no State participation guidelines promulgated by FRA until sometime in the middle of calendar year 1973, which was a complaint that we brought to this committee and to other interested committees in Congress. The FRA has made definite progress since then and just this past November promulgated State participation guidelines for the first time in the equipment standards area.

So, there was a slow start to the program, but we do have confidence that it has finally gotten off the ground.

Mr. ROONEY. When you say it has gotten off the ground, what do you anticipate at this time next year? How many States will be involved in the program?

Mr. KATZ. Within our testimony, there was some reference to that. There is a complete report due on the State participation program. It was mandated by section 203 of the 1974 Improvement Act. That report I know is in the draft stage at the FRA now. We have seen it and they are putting it into final form to be submitted to Congress.

Our views, as well as those of the AAR and the railway unions, will be part of that report, as the law requires.

I think that report suggests by fiscal year 1977, if I recall the figures here, a maximum of 28 States will be participating in the Federal track standards which was the first set of substantive standards issued under the 1970 safety act—and another 20 or 21 participating in the new equipment standards area, and hopefully another 17 or 18, if I recall, in the forthcoming occupational safety standards.

Mr. ROONEY. Mr. Kelly, would you prefer a 2-year funding of this program?

Mr. KATZ. The program is a little bit difficult to predict on a year-to-year basis at this time since the program is just getting started and has not been stabilized. It is difficult to predict just how much money might be required within a specific 12-month period. So I think a little bit

more flexibility in the authorization language would be appropriate for our particular program.

Mr. ROONEY. Would you prefer a lump sum funding as requested by the administration?

Mr. KATZ. A lump sum total appropriation of \$35 million or a breakdown by—

Mr. ROONEY. With no allocations to specific programs and no limitations on research expenditures.

Mr. KATZ. I think we would prefer some kind of limitation and some designation of what Congress expects from the State participation program as well as other aspects of the safety program.

Mr. KELLY. I think such a designation would give guidance both to the Federal agencies and to the State agencies as to just what the money is for. I think it would be appropriate.

Mr. ROONEY. Yesterday, this committee had some discussions with the Administrator of FRA with respect to pending legislation proposing transfer of certain railroad safety functions from DOT to the Department of Labor.

I wonder if either one of you gentlemen would like to comment on that.

Mr. KATZ. I don't think NARUC has taken any formal position on that. At this point, I am not sure that we know enough about the pros and cons of the situation in order to take that kind of position. Perhaps our executive committee can look further into this proposal.

Mr. ROONEY. I would appreciate very much at your next executive committee meeting that you would bring this subject up because I am very much concerned about it. I am concerned about safety—OSHA regulations versus FRA regulations. I think if people are working in industry, there ought to be some kind of across-the-board legislation, not going from one agency to another.

Mr. KATZ. We understand there is some complication in this area. Of course, the States will be impacted because they will hopefully participate in the enforcement of occupational safety standards also. So it does make a difference. Divisions of responsibility sometimes can be confusing at the State level, also.

Mr. ROONEY. Thank you very much, gentlemen.

Mr. KELLY. Thank you, Mr. Chairman.

Mr. ROONEY. Our next witness will be Mr. Carl V. Lyon, senior vice president, Association of American Railroads.

Mr. Lyon, you may proceed.

**STATEMENT OF CARL V. LYON, SENIOR VICE PRESIDENT,
ASSOCIATION OF AMERICAN RAILROADS**

Mr. LYON. Thank you, Mr. Chairman.

My name is Carl V. Lyon. I am senior vice president of the Association of American Railroads.

My appearance, along with other railroad witnesses appearing in behalf of the AAR, is to provide the subcommittee with the view of the railroad industry on H.R. 11804, the Federal Railroad Safety Authorization Act of 1976.

The intended purpose of the pending bill is to further the ends of railroad safety. With that purpose, all of the railroads unanimously agree.

However, we oppose H.R. 11804 because we believe that its particular proposals for changing the law are unjustified and that they would not contribute toward improved railroad safety.

Mr. Chairman, at the outset you mentioned that the railroads were not here last year with respect to this legislation. I think the answer to that, if I am not mistaken, is that in last year's legislation of this kind there was nothing included that was of the objectionable nature covering operating rules, amendments to the Hours of Service Act, or limitations of an arbitrary nature on the amount to be appropriated for safety research as opposed to inspection and enforcement.

These, indeed, are the things that we are objecting to in this legislation.

We support the FRA's appropriation as set forth in H.R. 11837. If that were all that were at issue we wouldn't be here this year. But we do believe that the other provisions that are not directly related to the authorization of appropriations in H.R. 11804 are pernicious and damaging to safety and we, therefore, oppose them.

Pursuant to the Federal Railroad Safety Act of 1970 FRA has promulgated a large number of new safety regulations related to track standards, equipment standards, and a number of other areas of railroad operations.

Indeed, rules like the three specific rules that would be adopted by this bill are now in various stages of consideration before FRA and are nearing the end of the administrative process. That is where they belong. They don't belong in this legislation.

We are aware of nothing that would justify separating out for statutory enactment, as H.R. 11804 would do, a flagging rule, a so-called blue flag rule, or a train conspicuity rule which would require highly visible rear end markers on passenger and freight trains.

These rules, like a host of others, involve the technicalities of railroad operations. They are not subjects which should be dealt with specifically and precisely in a statute. If Federal regulation is necessary in these cases it should be by agency rules which are consistent with and are a part of the large body of Federal safety regulations now in existence.

In this form, they, like the other rules, would be fully applicable and could be made to meet new and changing conditions where necessary without seeking enactment of a statute.

The railroads have their own operating rules developed by teams of experts over many years which govern the day-to-day activities of railroad employees. From time to time these rules are changed to meet changed and new conditions, local or other particular circumstances, or where a change appears desirable in the interest of promoting safety.

Where operating rules play a part in railroad accidents, it is most frequently because the rules have been disobeyed or ignored rather than because the rules are inadequate, unclear, or nonexistent.

The proposed increases in penalties for violations of rail safety regulations are huge and without any justification. There is nothing

to indicate that the assessment of higher penalties in any amount would improve safety, but no doubt the increased amount of dollars utilized for that purpose could be better used for more productive purposes such as improving track.

Also, in our view, the amount of funding available for research and development should not be arbitrarily limited to an amount not to exceed that spent on inspection and enforcement as proposed by section 2 of H.R. 11804.

Each of these activities should stand on its own merit and its value determined in view of its contribution to rail safety.

Other more technical aspects of H.R. 11804 will be discussed by railroad witnesses who are to follow me. My testimony has been deliberately brief to allow maximum time for you to hear from some of the experts in the field.

This includes AAR's Dr. William J. Harris, Southern Railway vice president of transportation Harold Hall, John German, vice president of engineering for the Missouri Pacific; and Ronald C. Lindquist, Burlington Northern director of safety and rules, who is available to answer questions if necessary in this field.

Dr. Harris will provide the subcommittee with an analysis of railroad accident data which provides critical insight into the meaning of those statistics and indicates areas where concentration of effort is most likely to be productive. He will also provide the subcommittee with a thorough description of the rapidly developing and forward looking research program in which the industry in cooperation with its suppliers, the Federal Government, and labor, are engaged and how these items are contributing significantly to the improvement of railroad safety.

Before I close I feel constrained to make one reference by way of response to a comment made by the previous witness, Mr. Kelly.

On page 4 of his statement he talks about there being "no question that the slaughter on the Nation's rail networks continues unabated." This is truly an unfortunate statement for two reasons.

No. 1, it is inflammatory and, No. 2, it is not accurate.

According to the FRA official statistics that were submitted to the committee yesterday, the number of employees killed during the year 1975 was 116. The previous year it had been 140. This is an improvement of 17.1 percent.

In the casualties at grade crossings, all classes of people, whether they ran into the train or whether the train ran into them, we have even a better improvement in 1975 over 1974. In 1974 there were 1,220 persons killed at rail highway grade crossings. In 1975 there were 902.

Indeed, there has been an abatement of the slaughter, if one wants to call it that.

Mr. Chairman, in closing simply let me add that we are dedicated to safety improvement in the railroad industry. We recognize there is a role for the Government and it is being played. We will continue to do everything within our power to improve our safety but we cannot support H.R. 11804. It is bad legislation and would not improve safety.

Thank you very much.

[Mr. Lyon's prepared statement follows:]

STATEMENT OF CARL V. LYON, SENIOR VICE PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS

My name is Carl V. Lyon, and I am senior vice president of the Association of American Railroads. The AAR is a voluntary, unincorporated, non-profit organization composed of member railroad companies operating in the United States, Canada and Mexico. The members of the AAR operate over 97 percent of the rail track mileage and generate approximately 97 percent of the railroad operating revenues in the United States.

My appearance along with other railroad witnesses appearing in behalf of the AAR is to provide the subcommittee the view of the railroad industry on H.R. 11804, "The Federal Railroad Safety Authorization Act of 1976."

This bill would:

(a) Authorize appropriations for administration of the Federal Railroad Safety Act of 1970 for the fiscal year ending September 30, 1977, and place a ceiling upon the amounts which may be obligated and expended for research and development during such period;

(b) Make substantial increases in statutory penalties for violations of Federal railroad safety regulations;

(c) Amend the Federal Hours of Service Act to specify the kind and location of quarters to be provided employees who are off duty away from home;

(d) Amend the Federal Hours of Service Act to place restrictions upon the permissible hours of work of crew members of wreck or relief trains during emergency;

(e) Provide a statutory rule requiring rear end flag protection for stopped or slowly moving trains;

(f) Provide a statutory rule for "blue flag" protection for employees working on, under, or about railroad on-track equipment;

(g) Provide a statutory rule for "highly visible" rear end markers on passenger and freight trains; and

(h) Provide for the Federal Railroad Administration to be divided into ten regional offices for the administration of federal railroad safety laws, under the direct control of the FRA Associate Administrator for Safety.

The intended purpose of the pending bill is to further the ends of railroad safety. With that purpose, all of the railroads unanimously agree. However, we oppose H. R. 11804 because we believe that its particular proposals for changing the law are unjustified and that they would not contribute toward improved railroad safety.

The Federal Railroad Safety Act of 1970 which was developed and enacted in direct response to the recommendations of a safety task force comprised of members of railroad management, labor, state regulatory commissions, and the Department of Transportation placed authority in the Federal Railroad Administration to issue rules and regulations as necessary in all areas of railroad safety. Pursuant to that authority FRA has promulgated a large number of new safety regulations related to track standards, equipment standards, and a number of other areas of railroad operations.

Indeed, rules like the three specific rules that would be adopted by this bill are in various stages of consideration before the Federal Railroad Administration now and are nearing the end of the administrative process.

We are aware of nothing that would justify separating out for statutory enactment, as H.R. 11804 would do, a flagging rule, a so-called "blue flag" rule, or a "train conspicuity" rule which would require highly visible rear end markers on passenger and freight trains. These rules, like a host of others, involve the technicalities of railroad operations. They are not subjects which should be dealt with specifically and precisely in a statute. Statutory rules that would govern railroad operations in a hard and fast manner such as this bill would do are simply not advisable. If federal regulation is necessary in these cases, it should be by the issuance of rules which contemplate, are consistent with, and are a part of the large body of federal safety regulations now in existence. In this form they, like other such rules, would be fully applicable and could be made to meet new or changed conditions where necessary without seeking enactment of a statute.

The railroads have their own operating rules developed by teams of experts over many years which govern the day-to-day activities of railroad employees.

From time to time, these rules are changed to meet changed and new conditions, local or other particular circumstances, or where a change appears desirable in the interest of promoting safety. Where operating rules play a part in train accidents, it is most frequently because the rules have been disobeyed or ignored rather than because the rules are inadequate, unclear, or non-existent.

Analysis of railroad accident statistics lends no support for legislating rules or regulations with respect to the areas of activity set forth in H.R. 11804. To the contrary such analysis, which will be portrayed in some detail by Dr. Harris, indicates that the only area where accidents have increased is track where extensive federal regulation already exists.

The proposed increases in penalties for violations of rail safety regulations are huge and without justification. There is nothing to indicate that the assessment of higher penalties in any amount would improve safety, but no doubt the increased amount of dollars utilized for such purpose could better be used for more productive purposes such as improving track.

Also, in our view, the amount of funding available for research and development should not be arbitrarily limited to an amount not to exceed that spent on inspection and enforcement as proposed by section 2 of H.R. 11804. Each activity should stand on its own merit and its value determined in view of its contribution to rail safety.

Other more technical aspects of the bill will be discussed by railroad witnesses who are to follow me. My testimony has been deliberately brief to allow maximum time for you to hear from some of the real experts in this field. The vice president of the AAR's research and test department, Dr. William J. Harris, will provide the subcommittee with an analysis of railroad accident data which provides critical insight into the meaning of those statistics and indicates areas where concentration of effort are most likely to be productive. Dr. Harris will also provide the subcommittee with a thorough description of the rapidly developing and forward-looking research program in which the industry in cooperation with its suppliers, the federal government, and labor are engaged and how these items are contributing significantly to the improvement of railroad safety.

Mr. Harold H. Hall, vice president-transportation of Southern Railway, will also present testimony in behalf of the industry particularly with respect to those parts of the bill involving railroad operations with respect to which he has first-hand knowledge and information. This will include a discussion of the amendments to the Hours of Service Act and the amendments to the Federal Railroad Safety Act of 1970 which would impose operating regulations by statute.

Mr. John G. German, vice president-engineering of the Missouri Pacific will also present testimony on the various provisions of the bill and provide more specific and detailed information with respect to the rules proposed for statutory enactment.

In closing, let me say simply that the railroad industry has been making every effort to improve railroad safety. In 1970, we cooperated in the development of the Federal Railroad Safety Act which authorizes the imposition of regulatory rules, where necessary, through the administrative process where they belong. We cannot support H.R. 11804. We do not believe it will improve safety.

Mr. ROONEY. Thank you, Mr. Lyon.

The specific allocations for safety and research and the limitation on research expenditures were first enacted for the fiscal year 1975. As I understand it, they were continued in last year's bill for fiscal year 1976. We propose to continue them through fiscal year 1977.

Mr. LYON. Were those limitations, Mr. Chairman? If I am not mistaken, those limitations were absolute limitations rather than related to the amount of money spent on inspection and enforcement. Is it the same provision, Mr. Adams?

Nevertheless, the reason we are here is that is only one of the things that we don't like about the bill. We think it is wrong.

What is much more troublesome to us and which creates a very difficult problem are the operating rules which will be put into statutes where they will be very, very difficult to change. These are of very

great importance to us. It is the combination of all those things that brings us here to this table to tell you that this is a bad bill.

Mr. ROONEY. Do you think \$10 million is adequate authorization for research activities?

Mr. LYON. No, sir.

Mr. ROONEY. After listening to FRA yesterday, perhaps you should help convince OMB to put more money in the budget for this whole railroad safety program.

Have you discussed it with them?

Mr. LYON. I am not aware of any recent discussions with OMB but we from time to time provide OMB with our views on these matters. My response to the question, Mr. Chairman, supporting the safety appropriation was for that purpose, for research. I believe—and I am convinced of this—that there is a great need for much more activity on behalf of the Federal Government in the area of railroad safety research.

I think that we are just touching the surface with \$10 million a year.

This in no way compares with the amount of research, for example, that is conducted by the Federal Government in the air industry or in the motor carrier field, by the highway research activity.

Mr. ROONEY. Are you aware of the pending legislation to transfer railroad safety functions from DOT to the Department of Labor?

Mr. LYON. Yes, sir.

Mr. ROONEY. What is your opinion?

Mr. LYON. We are against it. I think it would be a mistake. At the time the Federal Railroad Safety Act of 1970 was passed, they included an exception clause—I believe the section was 4(b)(1) of the Occupational Safety and Health Act—which many of us were convinced at the time placed the authority for all areas of railroad safety under the Federal Railroad Administration. We believe one agency ought to be conducting this and it ought to be an agency that knows something about the railroad business and that is the FRA and not OSHA.

Mr. ROONEY. Are you concerned that OSHA might insist on strict compliance with State safety regulations? Is this one of your reasons?

Mr. LYON. No, sir. We know they will. We know that FRA does. We pay the penalty for that. That is not our problem with OSHA. We don't think that they would do the job as well. We think FRA has the knowledge and expertise, and they can perform the function and are doing so.

In addition to that, we certainly don't want any duplicatory effort out there by two agencies combing through our employees and operations and causing difficulties in some cases—sometimes, I might say, making it more difficult to perform safely.

Mr. ROONEY. It seems to me, Mr. Lyon, that the railroad industry is an industry like any other industry in this country. It seems to me there should not be a dual regulation from one industry versus another.

Mr. LYON. Mr. Chairman, with all due respect, I think one of the reasons we have a Department of Transportation is because of the nature of problems in the transportation industry. I think that the kinds of regulations that are necessary and the kinds of activities that go on day to day on the railroads are unique in many respects.

Mr. ROONEY. In other words, you feel that FRA has more expertise, is that correct?

Mr. LYON. I certainly do, yes, sir. That is my point.

Mr. ROONEY. Thank you very much.

I have no further questions. Thank you for appearing here.

Mr. LYON. Thank you, sir. We appreciate the opportunity.

Mr. ROONEY. Our next witness will be Dr. William Harris, Jr., vice president, Research and Test Department, Association of American Railroads.

We welcome you to the committee, Dr. Harris.

**STATEMENT OF WILLIAM J. HARRIS, JR., PH. D., VICE PRESIDENT,
RESEARCH AND TEST DEPARTMENT, ASSOCIATION OF AMERICAN
RAILROADS**

Mr. HARRIS. Mr. Chairman, I am very pleased to have the opportunity to be here before the committee today. I was honored last year to have some of your associates visit with us in our technical center in Chicago and learn something of our research program on safety in railroads in general.

I am prepared today to summarize for you my testimony which is obviously too long to do other than ask that it be put in the record.

Mr. ROONEY. Without objection [see p. 83].

Mr. HARRIS. My name is William J. Harris. I am vice president of the Research and Test Department of AAR. We have been engaged in a great deal of research on a number of issues over the years, at least by comparison with earlier research commitments, although the amount of research we are doing is still not enough to cope with all of the problems that we face in this industry.

In reviewing H.R. 11804 I have serious objections to some of the technical issues in the bill as well as to the matter raised by Mr. Lyon concerning the proposed ceiling on safety related research.

I have summarized on page 2 some of the major earlier research programs that we engaged in. I described the fact that we had a major role in AAR in rail flaw detection, which is even more important today.

Then I have discussed the tank car research program that we have been engaged in since 1970 following the violent rupture of 41 tank cars in 1969.

Cooperative studies that we have had with the tank car industry and the cooperative test and evaluation of some of the findings with FRA have now clearly identified the issues and problems and corrective measures that we believe can be taken within the range of available technology.

After a further evaluation of some of those design changes, I am expecting that the tank car industry may be in position to make a commitment of up to \$200 million for a retrofit program, provided the changes now being built into experimental cars stand up under the tests that are being conducted.

We will in that fashion, I think, after far too long a period of research as far as we are concerned, but the minimum time to solve this

problem, be in a position to put on the transport network safer tank cars.

There have been a number of regulations introduced or considered by FRA on tank car safety over the years. Those involving operations are in force. Those involving technical changes are not yet in force because, despite the desire by FRA and ourselves to have those regulations improve safety, they were found to be deficient technically and are still in the process of having to be evaluated to insure that they will achieve the objective and not indeed decrease safety, as was possible had they been adopted in their original form.

In 1971, as a result of a seminar called by FRA, we established a Locomotive Control Compartment Committee with representation from the Brotherhood of Locomotive Engineers, the United Transportation Union, Federal Railroad Administration, and AAR. Over the past 5-year period, with funding from FRA and AAR and cooperative programs of the locomotive builders, we have designed a series of so-called clean locomotive cabs that correct about 20 deficiencies that were found in design of those cabs.

These are now accepted, they are currently in production cabs.

The data base that we find when we examine every one of the accident cases is inadequate. We have had to go back and reexamine in great detail the actual individual injury cases or fatality cases so as to be able to have a basis for improving design.

We are now in the process of engaging in some cooperative test crash programs to study certain of the design changes that may have the potential for further improvement in cabs safety in the case of collision.

In the studies we have made of the data at hand there is little evidence that a change in rear end conspicuity as proposed in H.R. 11804 would make a significant contribution to improved safety.

In 1971 we began a series of programs on two components, couplers and freight car trucks, whose failures can lead to accidents. We are now nearing the time that we can issue a set of procurement specifications to improve these components.

In 1972 our major track-train dynamics program was initiated in cooperation with the railroads, the Railway Progress Institute, the FRA, and the Transportation Development Agency of Canada.

With much contributed manpower from the railroads and the supply industry, with the assistance of FRA contractors, with our own staff, we have been engaged in a number of studies on the dynamic stability of the train and the track structure.

We early issued guidelines for improved train handling. About 10,000 copies of these have gone to the railroads and are being used by them in upgrading their own operating practices.

We have developed a series of new mathematical models, and many railroads are now operating new trains on the computer to determine how best to control the forces between the train and the track structure before they put the train in service and how to give the locomotive engineer a set of instructions in order to keep that train stable in operation.

This program is continuing.

I organized a safety research division in my department in 1973 because I was aware that as the FRA data base derived from reports made to the FRA pursuant to earlier regulations grew, we had a further opportunity to utilize the analysis of those data in order to be able to extract from them meaningful insights on directions for new research.

We issued a major draft report in early February 1976, which is now out for comment. I will present to you some information from that report here.

We have a program in cooperation with the steel industry on improved rail.

We have a major program in cooperation with FRA on track structures to develop means of improving the maintenance of track so as to make it safer.

Now we are working in the design and construction of a test facility at Pueblo in which we can run trains under controlled conditions and establish the response of a variety of critical components so as to have another basis for the comparison of those components and selection of the optimums from the standpoint of improved operations and improved safety.

Mr. ROONEY. Dr. Harris, how do you improve rail? Aren't there certain specifications for a track at a given point, carrying given freight?

Mr. HARRIS. When I say improved rail I am talking about the actual rail itself which is a part of the track structure. That rail material is based on technology developed 30 or 40 or 50 years ago. While there has been some research on new alloys, on new methods of steel manufacture, on new methods of introducing stresses, changing the stress patterns in the rail, new thermal treatment to change the metallurgical structure of the rail, none of these have been brought finally into focus so the railroads can order rail to the new specifications.

The research that we have in progress is looking at two elements of the problem: One, a way to make stronger and tougher rail, which will be more resistant to fracture, and, two, a detailed analysis of the actual flaw which initiates a crack in rail that can lead to a broken rail.

The combination of these two studies we believe will give us the capability to specify better ways of making steel and a better procurement specification so we will have a rail that will last longer without failure and have flaws that can be detected more readily before a rail is subject to failure.

Mr. ROONEY. Has this been developed?

Mr. HARRIS. We are probably halfway along in the research program now. We are not there yet. We are close but we are not there yet.

Mr. ROONEY. Thank you.

Mr. HARRIS. I emphasize the experimental facility for accelerated service testing at Pueblo as a critical new tool for railroad research. In this area the industry is now contributing \$2 million of equipment and FRA is putting up about \$2 million for the first preliminary runs. We can expect an urgent need for expansion of these tests. It will be critically important to expend of the order of \$25 or \$50 million

within about 2 or 3 years in order to expand that facility so as to test a much wider range of variables more rapidly. We need that information in order to build into the refurbishing of the U.S. railroad system, made possible by the omnibus legislation, all in new concepts and ideas to improve safety.

We have barely time. We are late. We have to move ahead very rapidly. That is why, starting last November, we moved to a program which normally would take 5 years to plan and execute but which will be in operation in the summer of 1976 because of the superb support from FRA and the dedication of the railroads and their supplies who have given cars, locomotives, tracks, ties, components, and personnel to make this program go ahead.

Mr. ROONEY. I would like to commend you because if the railroads are moving ahead as an industry, this is the first opportunity I have seen in the last 40 years. I commend you.

Mr. HARRIS. Mr. Chairman, I am very proud to be a part of this industry because it has in the research area demonstrated a great commitment to cooperative effort.

In 1975, in the fall of the year, we established the railroad safety research board as another tool to try to bring labor, government, supply industry, and railroads together to consider safety.

Mr. Chesser, United Transportation Union, has kindly accepted co-chairmanship of this committee. Mr. Cena, operating vice president of the Santa Fe Railroad, is the other co-chairman. We have on it a Brotherhood president. We have on it operating vice presidents senior mechanical officers, presidents of supply companies, and Mr. Manion and myself from AAR as well as Mr. Parsons, Associate Administrator for research of the FRA.

This board, which has now had its second meeting, has already begun to create the kind of dialog which gives us the best opportunity for cooperative identification of the opportunities that we must direct our resource to in safety that I have seen in my 6 years in this industry.

We are all aware that we have not done enough and that we can do more.

As we examine the programs, as I say on page 10 of the statement, it is my personal conviction that despite the best intentions of government pursuant to legislative direction, many of the regulations now in force have not made a contribution to safety commensurate with the effort required to be in compliance.

What that means is we didn't know enough when the regulations were drafted to be able to assess what we ought to do by way of regulation; and now, with emphasis in this bill and elsewhere on enforcement, we stand to direct the industry away from those opportunities that the new analyses are identifying for improved safety.

I want to say very clearly that I know that my research program has also not dealt with many causes of injuries and fatalities, so the FRA is not alone in having lacked the ability to take these data and use them to advantage. I am directing my research program in cooperation with the railroad safety research board in line with the data that I have charted for you.

Mr. ROONEY. I might say, Dr. Harris, I didn't attend the staff's visit to your Chicago facility, but they came back very impressed.

I would like to know how long has AAR been interested in this activity with respect to safety?

Mr. HARRIS. I was invited to join this industry in January of 1970, to be the vice president of the research and test department, and given the opportunity for reformulating the program of research of the railroad industry through AAR, with a tremendous amount of help from many people in the industry because I was new to it, and from the supply industry and from government as well.

So I can only say that in terms of a research commitment on a centralized basis to safety, that commitment began in 1970.

My first major program was tank car research. I started a cooperative tank car research program in the planning stages within 2 weeks after I joined AAR. It was in being within 4 months after I joined AAR.

The other programs I have cited have come along year by year as our resources grew from an original \$700,000 made available through the AAR budget for research to about \$4.3 million appropriated in 1976 and an additional \$6.5 million contributed beyond that through manpower, facilities, and dollars from Federal contracts or contributions from the supply industry or the railroads.

On page 17 of the report we summarize the 1966 versus 1974 accident data again to emphasize the fact as far as fatalities and injuries are concerned we have seen a positive change. We still have more than are desirable, but we have seen a real reduction over this time period. I chose this time period only because these are the dates within which I have tapes of the accident data which I can analyze.

If I may take you briefly through some of the figures at the back of the statement, I would like to start off with figure 1 which presents the total number of accidents that are reported.

A \$750 accident is a very small number. We are being trapped into a bad numbers game by looking at numbers of accidents. I want to show you why in just a moment.

Let me talk about the numbers of accidents in figure 2. Over this period of time since 1966 and 1977 only the track-related accidents have gone up. Equipment, the human factors, the miscellaneous causes have stayed constant. We are not sure why, but we are sure from figure 3 that it is not just bankruptcy because when I take out the bankrupt railroads they are not the principal cause of the upward swing in the total number of track accidents.

Figure 4 is complicated. It simply says that through the years from 1966 through 1974 we now can begin to identify the severity cause of accidents. We can do the same thing with equipment and human factors and with miscellaneous accidents.

But there is nothing about these numbers of accidents that really relate to injuries and fatalities. That is a critical issue that I want to convey to you. There is nothing about looking at the numbers of accidents that you can equate to injuries and fatalities.

If you look at the bottom line on figure 8a you will see what is called train accident injuries. You can see the next line up talks about train service accidents. It is the train accidents that involve interactions of trains. The train service injuries are reported when people are injured

but when damage to track and equipment is below the dollar threshold for reporting.

If you look at figure 9 you can see that surely we have a lot of train service injuries, but very few that are serious. All of those we regret but we are not maiming large numbers of people in the railroad industry.

In figure 10, percent of employee injuries by major cause category, notice in the left-hand sector there is a 4 percent figure for train accidents. If I eliminate all train accidents I reduce the number of employees who are injured by only 4 percent.

How do people get injured on the railroads? By getting on and off trains, by stumbling or slipping, during the coupling or uncoupling of trains, by operating switches. I didn't know this until our analysis was completed by my staff within the past 6 weeks. My research program has been directed at preventing train accidents on the assumption I would, thereby, reduce the number of injuries. Now we are in the process of rethinking our whole program as to how to get at the problem of reducing injuries.

It is for this reason that strict enforcement of the kind of regulations that now exist on track standards and equipment standards will not, in fact, improve railroad safety to any great extent from the standpoint of the employee. That is why I urge your careful reconsideration of the introduction of regulations by statute at this time while we are in the reformulation stage of the program.

Now here is that fatality picture in figure 11. Over that period from 1966 to 1974 there was some decrease in the total fatalities and those in train service accidents, and about the same number of fatalities in train accidents.

Again in figure 12 look at the employee fatalities by major cause category. Train accidents involved only 18 percent. Struck or run over at places other than public highway crossings, coupling and uncoupling, stumbling, getting on and off trains; these are the kinds of causes that we are now trying to look at, examine, find changes in practice, changes in design or changes in instructions so as to try to cope with this problem.

Mr. Chairman, we are working hard on research. Our resources are far too limited to explore all the promising avenues. But the cooperative attitude between the Government, labor, the supply industry and the railroads and ourselves looking at the broad issues of safety I think is going to bring us to the point where we can find without regulation, as we did in the cab case, opportunities for improving safety and with regulation as necessary, the correct regulation which when properly enforced can increase safety.

Thank you.

[Mr. Harris' prepared statement and attachments follow:]

STATEMENT OF WILLIAM J. HARRIS, JR., PH. D., VICE PRESIDENT, RESEARCH AND TEST, ASSOCIATION OF AMERICAN RAILROADS

My name is William J. Harris, and I am Vice President of the Research and Test Department of the Association of American Railroads (the AAR). The AAR is a voluntary, unincorporated, non-profit organization composed of member railroads operating in the United States, Canada, and Mexico. Its members operate 97 percent of the railroad mileage and produce 97 percent of the revenues of all United States railroads.

I would like to describe to the Committee some of the increasingly important activities of the rail industry in recent years to improve rail safety, primarily of a research nature, some of the important achievements, some of our current and planned activities, and the manner in which I believe to our efforts. Most importantly, the proposed legislation would severely impede any expansion of the on-going programs and would deprive those programs of the flexibility necessary for their successful execution.

Safety has been a matter of major concern to the railroad industry since its earliest days. Rule books, operating instructions, signal systems, track and equipment inspection practices have been under continuing review and improvement.

In these action programs, research has made a major contribution for more than a century. The invention of braking and coupling systems increased safety. More than 35 years ago, the Research and Test Department of the AAR had a major role in the development of rail flaw detection systems that made it possible to identify rail with hidden flaws that would fail if left in service. More recently, several approaches have been taken in the development of safety programs.

Major individual accidents have been studied and programs developed responsive to the issues that have been identified. For example, in 1969, forty-one tank cars ruptured violently after railroad accidents. In 1970, the tank car builders, through the RPI Tank Car Committee, joined with the AAR in a cooperative tank car safety research program. In the ensuing years, extensive laboratory and field work has:

1. Identified the sequence of events that lead to violent rupture; and
2. In cooperation with the Federal Railroad Administration (FRA), identified and tested a number of promising changes in tank car design that can reduce the number of violent ruptures.

The tank car and railroad industries have expended more than \$1.5 million in this program and in what is probably the largest privately financed safety effort in the history of freight transportation, as a result, are nearing a commitment of nearly \$200 million in retrofit programs to incorporate the improvements in existing cars. There has been extensive cooperation with the FRA research program in research on protective systems for tank cars.

The FRA has introduced a number of regulations to increase tank car safety and has considered many more. Those involving operations have been promulgated and are in force. Those involving design changes have been promulgated, in part, but are not yet reflected in changes in equipment because of technical problems that were encountered in attempts to achieve compliance.

The necessity of research is clearly indicated by the inadequacy of many of the FRA tank car design regulations in the absence of an adequate technical understanding of the causes of the accidents and of the correct engineering solutions.

In 1971, another major step was taken in the railroad safety research program. As a result of a seminar called by the FRA, a Locomotive Control Compartment Committee (LCCC) was established with representation from the Brotherhood of Locomotive Engineers, United Transportation Union, FRA, and the AAR. Under the auspices of this committee, the following programs have been carried out:

1. the FRA contracted for a study of injuries to occupants of locomotive cabs;
2. the AAR contracted on a cost-sharing basis with the locomotive builders for the construction of cab mock-ups to reduce the incidence of injuries; and
3. after review and approval of many groups and endorsements of the Locomotive Control Compartment Committee, the AAR Mechanical Division voted affirmatively to approve the changes and to adopt them in the standard cab.

Accordingly, without regulation, labor, management and government have achieved agreement and taken action to improve safety of the locomotive cab.

The LCCC has also been engaged in studies of fatalities in cabs. The AAR identified a sequence of events in rear-end collisions that needed further study. A cooperative crash test program conducted by the FRA with equipment furnished by the railroads has begun to identify the design approaches that may achieve safer cabs in the case of collisions. Incidentally, there is little evidence in these studies that such issues as a change in rear-end conspicuity as proposed in H.R. 11804 will make a significant contribution to improved safety.

In 1971, the Railway Progress Institute (the RPI) and the AAR initiated cooperative programs on coupler safety and on freight car truck* component safety. These programs have included extensive laboratory and road testing to establish the strength required of couplers, side frames, and bolsters. They have included the study of hundreds of broken components to establish the mode of failure. They have identified a few components that are being removed from service because of the frequency with which they fail. From these programs, information is being compiled to establish the basis for design of the next production models of these critical components.

In 1972 in cooperation with railroads, the RPI, the FRA, and the Transportation Development Agency of Canada, the AAR organized a major program on Track-Train Dynamics. The first major contribution of this program was in the form of Guidelines for Train Handling, Train Make-up and Engineer Education. Over 10,000 copies of these Guidelines have been distributed and are being used by railroads to improve operation of trains so as to reduce forces between cars and between the train and the track structure in order to reduce accidents. Mathematical models developed in the course of this program and validated by extensive experimentation are being used to improve designs of equipment, particularly in terms of dynamic stability to investigate other means of increasing safety of operations. The program will continue several years more.

In 1973, the Research and Test Department organized a Safety Research Division to centralize its work in development of a comprehensive safety systems approach for use in planning research programs and identifying new action programs. Analysis of accident data began in that year, using FRA records of reports required to be filed by railroads in the case of accidents involving a minimum level of dollar damage or injuries or fatalities. This work has progressed to the point that a major report was issued in draft form in early February 1976 for comment and publication by April 1976. Data from this analysis are presented later in this statement.

In 1974, in cooperation with the American Iron and Steel Institute, the AAR, and the American Railway Engineering Association completed plans and initiated work on a comprehensive rail steel investigation. Included in this program are studies of the kinds of flaws found in rail subjected to a variety of service loadings and the nature of the characteristics and properties of the material at the point of initiation of the flaw. Additional programs supported by the AAR since 1971 on rail will lead to the basis for improving rail steel.

In 1974, the FRA and the AAR initiated a jointly funded study of track structures intended to develop improved methods of designated maintenance of track. One task of this program required the identification and design of new track research facilities. The AAR is in the process of construction of a pilot facility for carefully controlled track experiments.

The FRA in cooperation with the AAR, the RPI, and other suppliers is constructing at the Test Center in Pueblo, Colorado, an experimental track called IFAST, the Interim Facility for Accelerated Service Testing. The railroad industry and its suppliers are contributing up to \$2 million of track elements and equipment and the FRA an equivalent amount to bring this program into action by the summer of 1976. IFAST will make possible for the first time in this country, the study under controlled, full-scale conditions, of many variables of rail, rail fasteners, ties, ballast, and subgrade and an equally large number of variables of wheel design, truck design, car size, and train operating conditions.

From this experiment will stem a large number of opportunities for increased safety. However, the very first year of this experiment will involve an expenditure from the cooperating parties of over \$4 million. This kind of experimentation must be expanded and continued. In a few years, it would be desirable to spend from \$25 million to \$50 million a year on this kind of safety research alone. In addition, there must be funding for the necessary laboratory and pilot experiments to provide inputs to the full-scale programs and to apply the findings in improving designs and operating practices.

In 1975, the Railroad Safety Research Board was established under the chairmanship of Al Chesser, President of the UTU, and Larry Cena, Vice President of Operations of the Santa Fe Railway Co. Members of the Board include Messrs. Chamberlain, President of the Brotherhood of Railway Signalmen; Crane, Executive Vice President, Operations, Southern Railway; Hackney, Assistant Vice President-Mechanical, Chessie; Hutcheson, Assistant Vice Presi-

*A freight car truck is that assembly of wheels, axles, and connecting structures that support each end of a freight car on the track structure.

dent Engineering, Seaboard Coast Line; Johnson, Manager of Railroad Sales, CF&I Steel; Lennartson, President, RPI; Manion, Vice President, Operations and Maintenance, AAR; R. E. Parsons, Associate Administrator for Research and Development, FRA; and myself also representing the AAR.

This Board was established to study trends in safety, based on accident reports and investigations, and additional analyses of safety data will be made to form a basis for recommendations on new safety research programs or revisions in present programs.

The members of the Board recognize that there has been much attention given to safety including legislation and regulatory action. The Board is aware that these measures have not had the desired results.

It has been noted that the resources available for safety research by government and industry are expanding and the Board will focus its attention on programs that offer the greatest promise for improving safety.

It is recognized that all parties involved in safety have at some time been persuaded that they were alone in their concern. The time is at hand for a major cooperative effort to use what we know and to increase our knowledge as needed in a more effective safety research effort.

The AAR is committed to support the Board in its work, the RPI has announced its intention to work with the Board, the FRA has indicated its interest in the findings of the Board and rail labor plans to work toward making the Board an effective instrument for improving safety.

At its meeting on February 19, 1976, the Board heard an extensive presentation from the February 1976 draft report on analysis of railroad accidents. After lengthy discussion, it agreed to concentrate on study of injuries and fatalities, particularly those major causes discussed later in this statement.

It can be seen that, in 1970, railroad safety research was initiated in response to significant major accidents such as those involving tank cars, track and rail failures, equipment failures, and injuries in locomotive cabs. However, there has been increasing recognition of the necessity for a more comprehensive understanding of the totality of the railroad safety issues and the need for setting priorities on a more rational basis recognizing the causes of fatalities, injuries, and major accidents.

This requirement will be furthered by the February 1976 report on accident analysis and by the cooperative environment between labor, management and government being achieved in the Railroad Safety Research Board. It is evident that a more effective basis now exists for research and action on railroad safety than has existed in recent years.

It is my personal conviction that many of the steps that have been taken by government in the recent past on safety, particularly in the issuance of recommendations stemming from singular incidents and in the issuance of extensive regulations without reference to accident causes have not made a contribution that is commensurate with the required effort. When recommendations for action or regulations address minor or irrelevant issues, particularly if they are strictly and punitively enforced, the all-too-limited resources of the railroad industry will be diverted from areas where there may be a greater need for effective action. Thus, government programs intended to improve safety can actually reduce the overall safety effort. We are now in position to begin to assess whether the regulatory action has had the desired consequences. The industry has been operating under FRA track standards since 1972.

As the data to be shown later indicate, only in the area of track has there been an increase in the number of accidents. It may be argued that some segments of the industry have not complied fully with regulations and that, therefore, the industry should be inspected more carefully and fined more heavily for failure to comply. However, study suggests that the present track standards do not deal with the basic shortcomings of track involved in accidents. Far more important, the data presented in this statement clearly show that injuries and fatalities would not be reduced significantly if track standards now in force were even more completely enforced. We also know that our research program has not dealt with many causes of injuries and fatalities and we are redirecting it in cooperation with the Railroad Safety Research Board.

In order to pursue railroad safety, we need the opportunity for flexible response, not increased legislative or regulatory rigidity and we need the opportunity to allocate resources as required without arbitrary ceilings on the amounts that can be spent for analysis, research, and action programs. We welcome the FRA safety research program and the joint efforts with FRA when it is found to be in the government interest to cooperate. I shall testify in support of in-

creased FRA research programs at the time of appropriation hearings. When we know from government and industry programs what we should do to improve safety, we shall do it. Regulation, when found necessary, should be selective and intended to increase the extent of those actions that have a high probability of reducing fatalities, injuries, and accidents.

Because the understanding of railroad accidents is fundamental to the purposes of this hearing, the balance of this statement discusses the findings of the February 1976 report on analysis of railroad accidents, offers observations on the relationship of the previously described AAR safety research programs to accident frequency and severity, and comments on safety problems not previously given coordinated attention but now to be the focus of new efforts as a result of our new insights.

Railroads have been reporting to the federal government for many years whenever accidents involved a certain minimum threshold dollar loss or injuries or fatalities occurred. Over 640 causes of accidents have been identified as pertinent to railroad safety. The data in the following remarks cover only those injuries or fatalities of railroad employees in train or train service accidents and those involving train operations. The other cases are now being analyzed and will be reported on in the near future.

In Figure 1, attached, we have charted the number of what are called "train accidents." Until January 1975, such accidents were reported when there was damage of more than \$750 to equipment, track or roadbed. This reporting threshold had been unchanged since 1957. As a result, incidents, which involved much less than \$750 in damage in 1966 and were not reported then, would be reported in later years as accidents simply because high inflation had driven up the repair costs. As you can see from the top two lines of Figure 1, when inflation is taken into account, the number of accidents decreases rather markedly.

The same presentation also shows that there has been a much smaller increase in the number of accidents causing over \$50,000 in damage for each of the past nine years. (Accidents amounting to \$50,000 are equivalent to the destruction of two freight cars.) At that level of cost, the number of accidents is very small.

Figure 2 assesses the number of train accidents by major cause categories. After adjustments for inflation are made, it can be clearly seen that those accidents caused by equipment, factors involving human beings, or causes in the miscellaneous category have remained essentially constant whereas the number of track-caused accidents has increased. In further study of the track-caused accidents we separated the bankrupt railroads and took their bankruptcy date back to 1966, assuming that during days before they actually became bankrupt, they had limited funding for track maintenance. However, as shown in Figure 3, the track-related accidents are not restricted to the bankrupt railroads. In fact, the growth rate of such accidents appears higher for solvent carriers.

We were able to look at each of the four major categories in terms of a severity ranking of causes. As shown in Figure 4, the mainline-rail, and mainline and surface of track were associated with the most severe accidents where severity is established by multiplying the number of accidents by the median value of the dollar cost of accidents associated with that particular cause.

We have a substantial number of research programs looking at the rail problem and at the line and surface problem. We are attempting to improve the materials from which rails are made; we are investigating methods of improving flaw detection techniques; we are looking at the effects of various dynamic loads on rail; and we are looking at the dynamic input into the train resulting from changes in track, line, and surface. We have already made useful contributions to train handling practices that can reduce forces on the rail. We are making progress toward understanding how to make better rail and how to evaluate it more completely. Accordingly, our current research programs, most of which are cooperative ventures with the supply industry and the Federal Railroad Administration, will provide information that should reduce rail-related accidents.

In Figure 5 the severity rankings of cause codes associated with equipment accidents are presented. The highest rated cause in most years has been axes, but this really means burned-off journals as a result of overheating. The industry has available an increasingly extensive network of hotbox detectors, and significant progress is being made in identifying those journals that are becoming overheated.

In regard to the second category of events, trucks, and the third category, couplers, significant progress is being made in a series of programs. We have made detailed examinations of the modes of failure. We have extensive test programs

underway to establish more definitely the properties of coupler and truck materials. We are developing additional means of testing and evaluating the components. In the very near future, improved performance specifications will be issued for these components that will increase their capability to survive in the railroad environment.

Through the Track-Train Dynamics Program, which is also cooperative with the supply industry and FRA, further insights are being gathered that will contribute to improvements in the performance and reductions in the number of accidents associated with equipment.

Figure 6 discusses the severity rankings of human factor cause codes: Category 1702, Failure to Secure by Hand Brakes; 1902, Excessive Speed Other Than Yard Limits; 1917, Absence of Man on or at Leading Car Being Pushed; 1802, Switch Improperly Set; 1910, Failure of Engineman to Keep Proper Lookout Not Otherwise Classified. These represent areas in which there has not been a major research effort in the past. However, through the Railroad Safety Research Board, a careful study is being made of these issues to assess what the man-machine problems are and where research can make a contribution.

Figure 7 lists the severity rankings of the top five cause codes for so-called miscellaneous accidents. Category 4687 only indicates that after investigation there was another ascertained cause which means that, for purposes of this study, we do not know what the cause was. The other causes which appear as leading factors in recent years are 4601, rocking or swaying of the car; 4588, combinations of two or more causes other than those explicitly described; 4607, slack action; 4008, load shifted due to stakes blocking or other fastenings; 4301, landslides or boulders on fouling the track; and 4307, track or structures damaged or washed out by floods.

A substantial amount of activity is in progress under the Track-Train Dynamics Program in regard to the rocking or swaying of a car. Some means of controlling the rocking or swaying are currently in use; others are being developed.

Extensive activity on improved train handling to reduce slack action has also been instituted under Track-Train Dynamics. All railroads are currently revising many elements in their train operating practices manual; and accordingly, the slack action problem should become less serious in the future.

The same applies to other combinations of two or more causes because the very purpose in track-train dynamics is to look at the interaction of track and equipment—dynamics elements—so as to develop through improved understanding a means of bringing the train into more stable operation.

Shifting load will also be improved as train action is better understood and there is less dynamic action as a result of improved train handling and improved equipment and track structure.

Accordingly, research in progress is being directed at a significant fraction of the accident causes in the miscellaneous category.

The most serious aspect of railroad accidents is, of course, the resulting casualties to rail employees, passengers and the general public. It is important to note that the general trend of casualties has shown a very marked improvement from 1966 through 1974, with total fatalities declining from 2,684 to 1,908, a drop of 28.9 percent. Moreover, all categories of fatalities—those suffered by employees, by passengers, by trespassers and by others—were reduced over this same period. Similarly, all injuries groups registered declines.

As the table below shows, less than 7 percent of the fatalities from rail accidents involve employee deaths. On the other hand, 75 percent of the total injuries were incurred by rail employees.

FATALITIES AND INJURIES IN RAILROAD ACCIDENTS: 1966 VERSUS 1974

Category	Fatalities		Injuries		Percent change	
	1966	1974	1966	1974	Killed	Injured
Employees.....	159	140	18,195	15,620	-12.0	-14.2
Passengers.....	23	7	1,244	574	-69.6	-53.9
Trespassers.....	678	565	702	674	-16.7	-4.0
Others ¹	1,824	1,192	5,411	3,568	-34.6	-34.1
Grade crossings.....	1,782	1,220	4,073	3,260	-31.5	-20.0
Total.....	2,684	1,908	25,552	20,818	-28.9	-18.5

¹ The preponderance of casualties in this category consist of nontrespassers killed and injured at rail-highway grade crossings.

The number of employee injuries for train and train service accidents is shown in Figure 8a and the total days disabled for train service accidents in Figure 8b. (Prior to January 1975, a train service accident was one in which a reportable death or an injury results but there is less than \$750 damage to equipment, track, or roadbed.) A decrease occurred in the number of injuries and in the total number of days disabled over this period of time.

Figure 9 indicates that, for train service accidents, the number of serious injuries with over thirty days or over 180 days of disability, has decreased or remained stable at a low number over the period 1966 to 1974. A similar analysis is being made for train accidents.

Figure 10 provides an analysis of the injuries by major cause categories. As can be seen, three categories—getting on and off trains; stumbling, slipping, etc.; not on train; and stumbling, slipping, etc., other causes—constitute more than half of all the causes of employee injuries. The coupling, uncoupling areas, flying object areas, operating switches, operating hand brakes in train accidents, and all other causes represent a very wide range of other issues.

At the meeting of the Railroad Safety Research Board on February 19, 1976, it was agreed that a more detailed study would be made on selected railroads of the actual cases of the employee injuries by these major cause categories to establish what could be done by way of improving equipment, of changing practices in terms of job requirements, of improving instruction in regard to safe practices, etc. Obviously, something can be done about these categories of injuries; and something will be done.

The number of fatalities in train service and train accidents is summarized in Figure 11. The total number of fatalities in these two cases range from slightly over 150 per year to 130. There have been some decreases, although obviously all fatalities are of concern to many persons in the industry particularly the chief operating officers.

In Figure 12, the causes of fatalities are summarized for the year from 1966 to 1975. It can be seen that "being struck or run over in places other than public highway crossings" and "train accidents" constitute more than half of all the causes. Train accidents encompass overtaking collisions or head-on collisions of trains. It is the intent of the Railroad Safety Research Board to select a few individual railroads for initial detailed studies to establish what can be done in order to reduce the number of fatalities.

This brief summary of accident data and analysis of accident information has been extracted from a report now existing in draft form dated February 1976 prepared by A. E. Shulman and C. E. Taylor of the Research and Test Department of AAR. The report is being reviewed by many people in labor, government, and industry, and adjustments may be necessary as the reviews are completed.

This analysis of accident information has been conducted to provide better guidance for the AAR in its own research program and to provide to the FRA and other interested parties a basis on which they too can examine the priorities and allocations of resources for research.

Given the existing data and given the great opportunities for improvement of equipment and practices, it is obvious that any arbitrary ceiling set on the amount of research funding can hamper the capability of both FRA and other groups to expand in attractive and promising areas.

Of the \$4.3 million being expended by AAR in 1976 on research and the additional \$6.5 million being expended under the management of the Research and Test Department of AAR with matching funds, or personnel, or equipment, from the railroads, the supply industry and FRA, a large fraction has direct relevance to safety. Through the work of the Railroad Safety Research Board, with representation from labor, FRA, railroads, railroad supply industry, and AAR, I am confident we have a forum within which we can develop cooperative programs that will cope with some of the most difficult problems in safety that we have in this industry.

We have a commitment to improve railroad safety. It is clearly reflected in the nature of our research programs. We look forward to the completion of these programs and the application of their findings as one of the keys toward improving safety in the railroad industry.

TOTAL NUMBER OF ACCIDENTS AT THRESHOLDS
OF \$750, INFLATED \$750, \$5,000, \$10,000, \$50,000
1966 - 1974

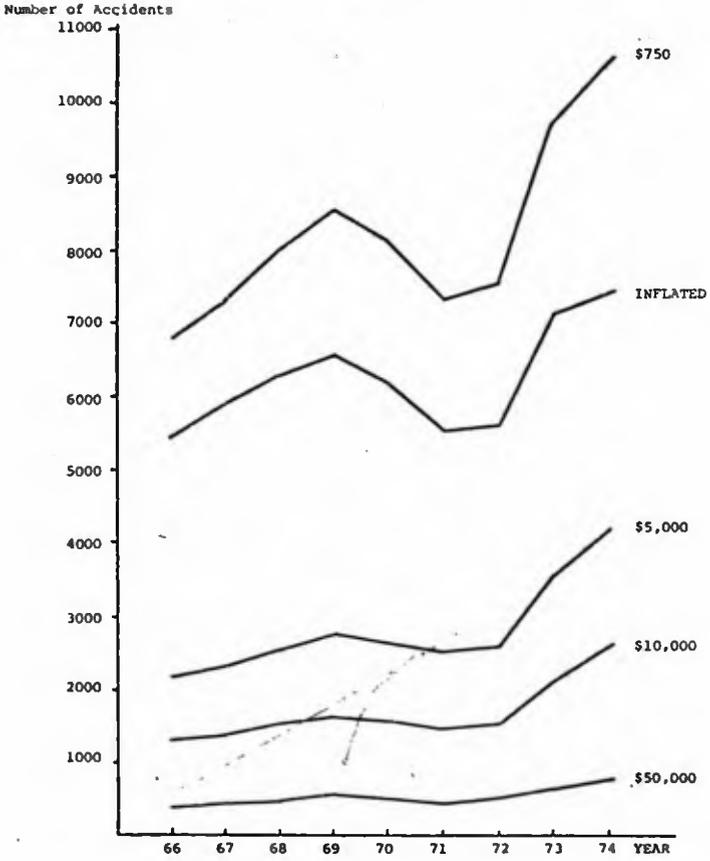


Figure 1

NUMBER OF TRAIN ACCIDENTS BY
MAJOR CAUSE CATEGORIES
@ INFLATED THRESHOLDS

1966-1974

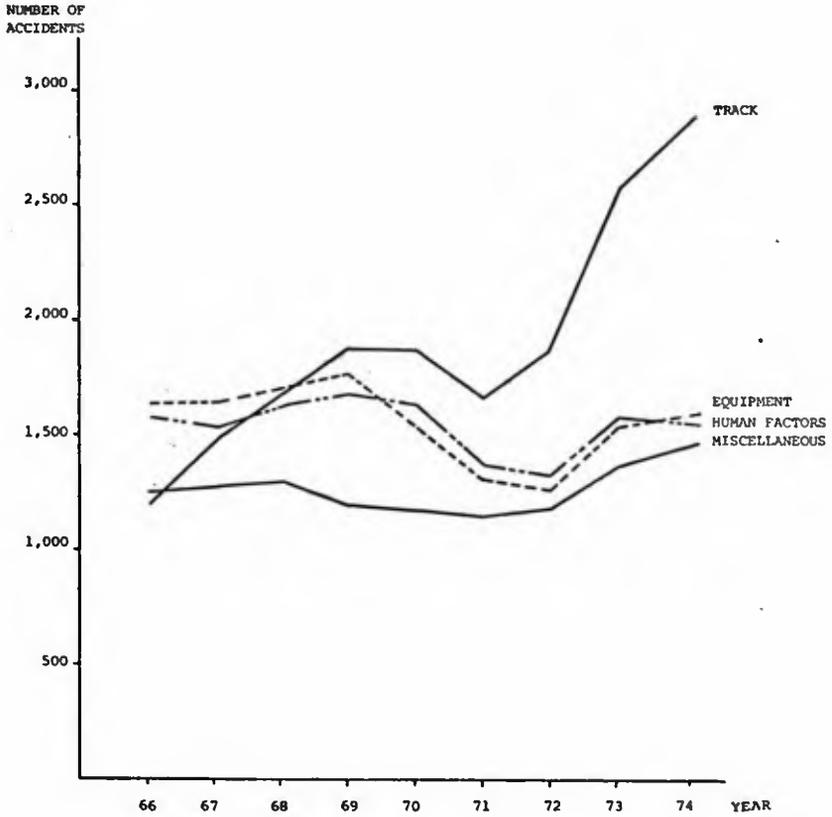


Figure 2

YARD TRACK ACCIDENTS
@ INFLATED \$750 THRESHOLD
1966 - 1974

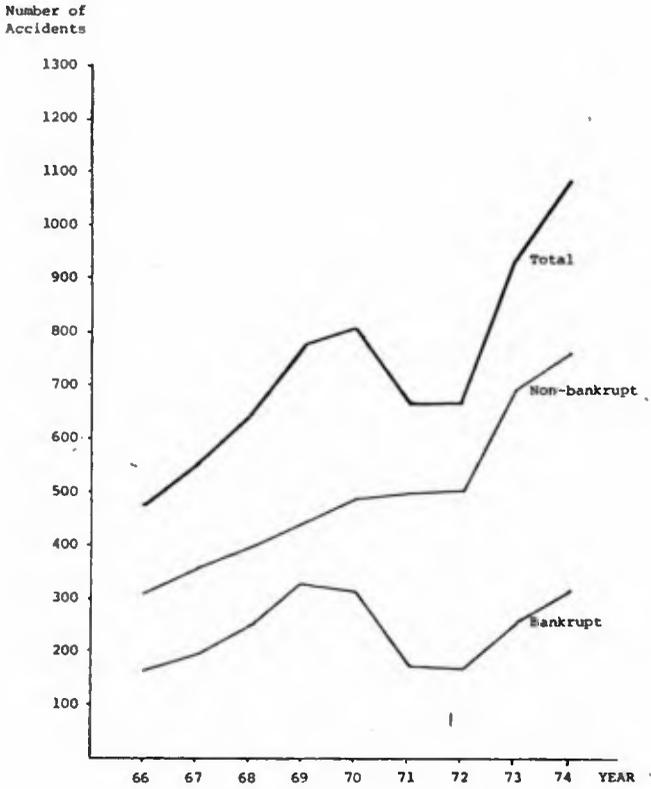


Figure 3

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

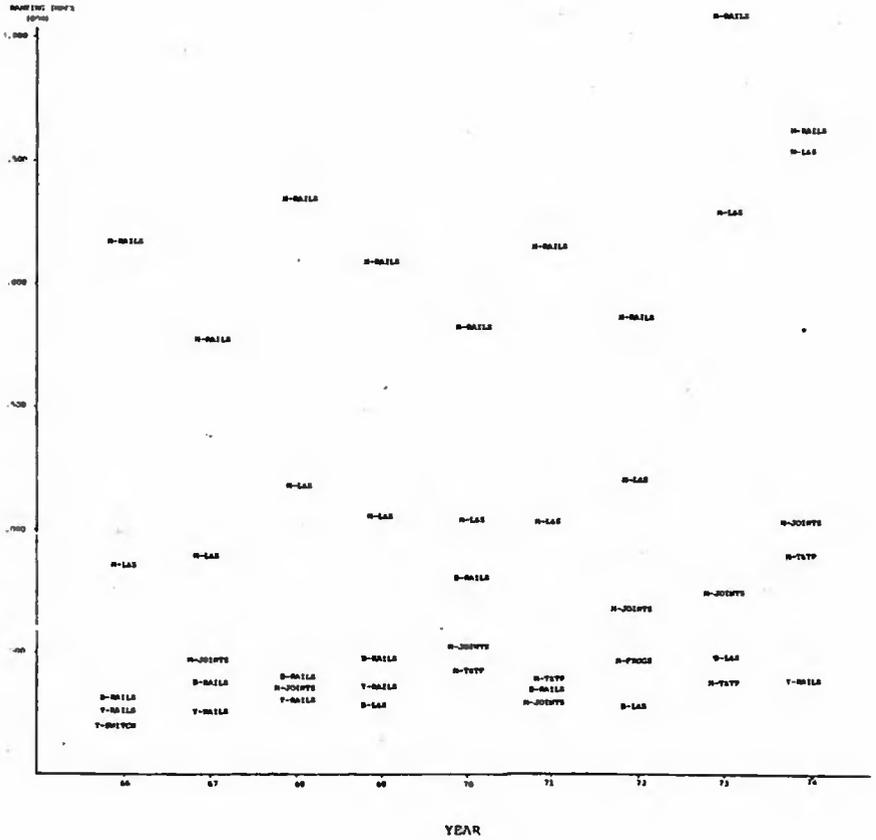


Figure 4

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

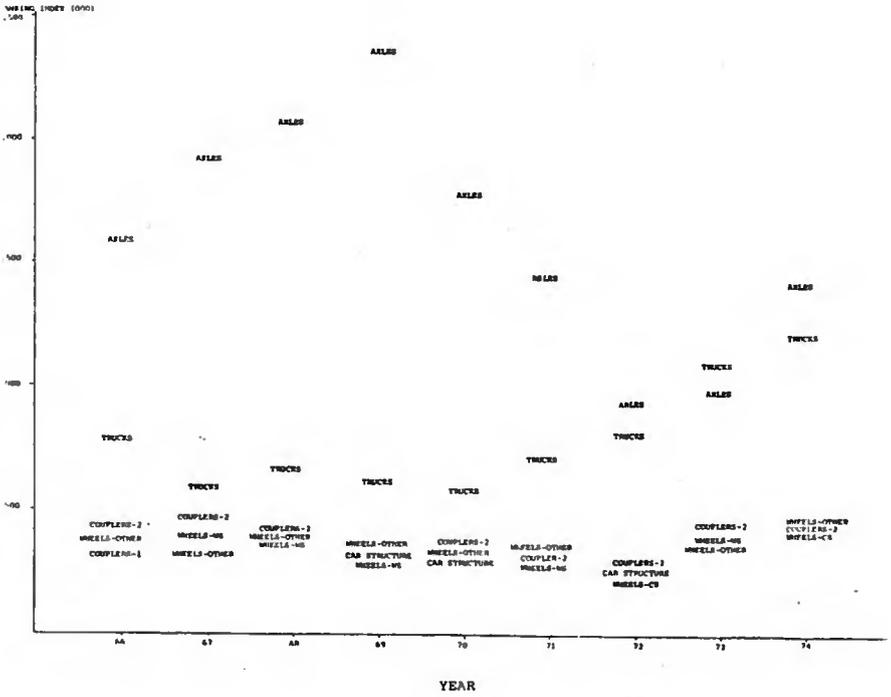


Figure 5

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

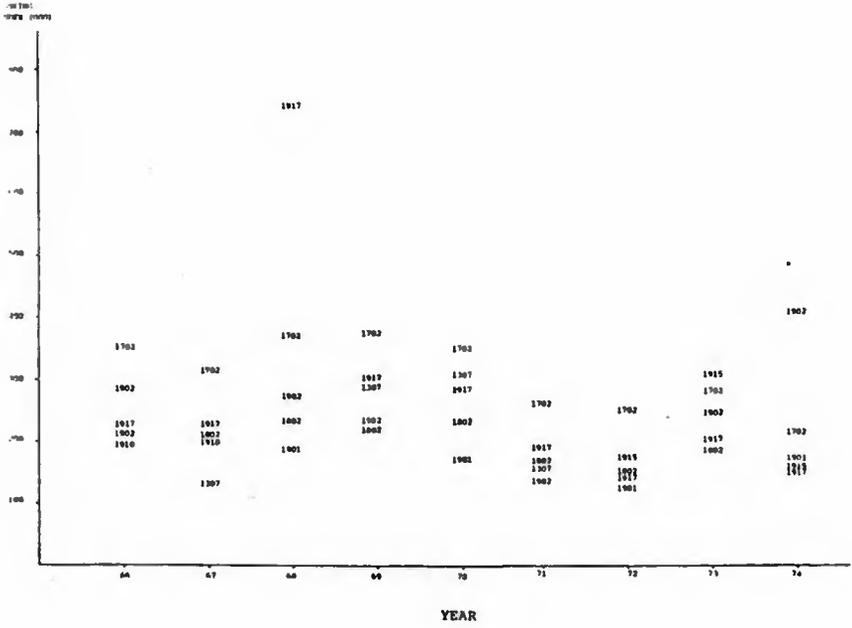


Figure 6

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

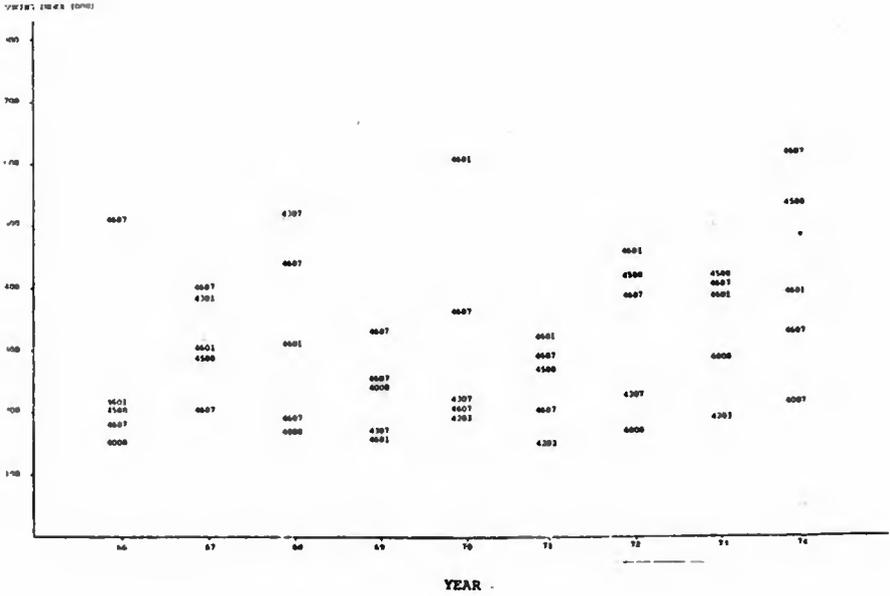


Figure 7

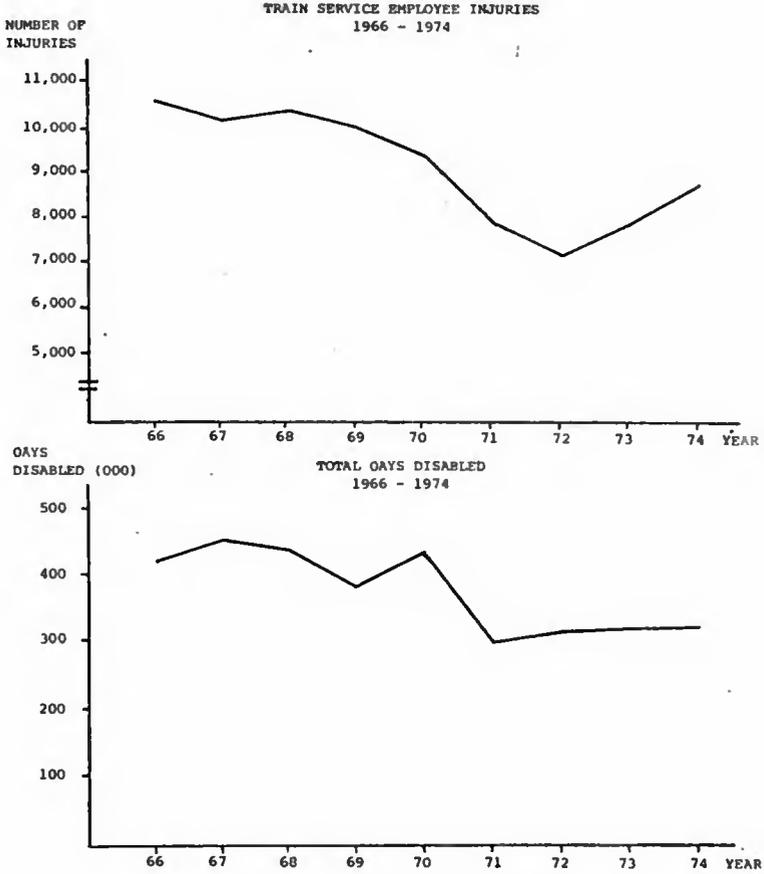


Figure 8a

TRAIN, TRAIN-SERVICE AND TOTAL EMPLOYEE INJURIES

1966 - 1974

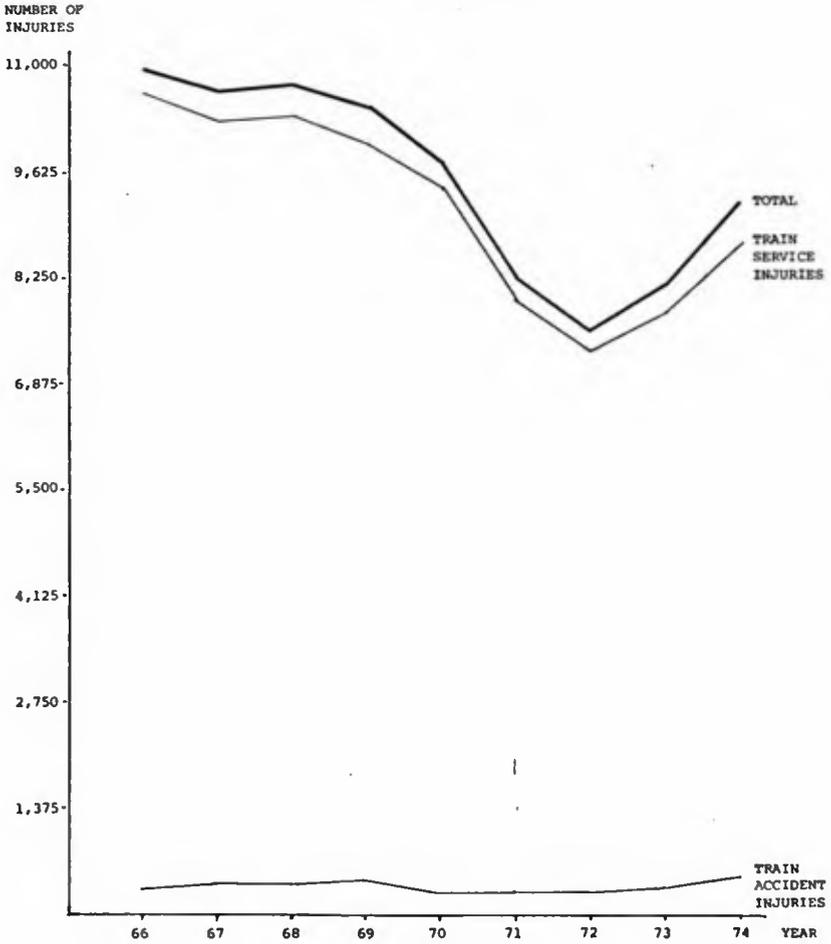


Figure 8b

NUMBER OF TRAIN SERVICE INJURIES
AT VARIOUS THRESHOLDS

1966-1974

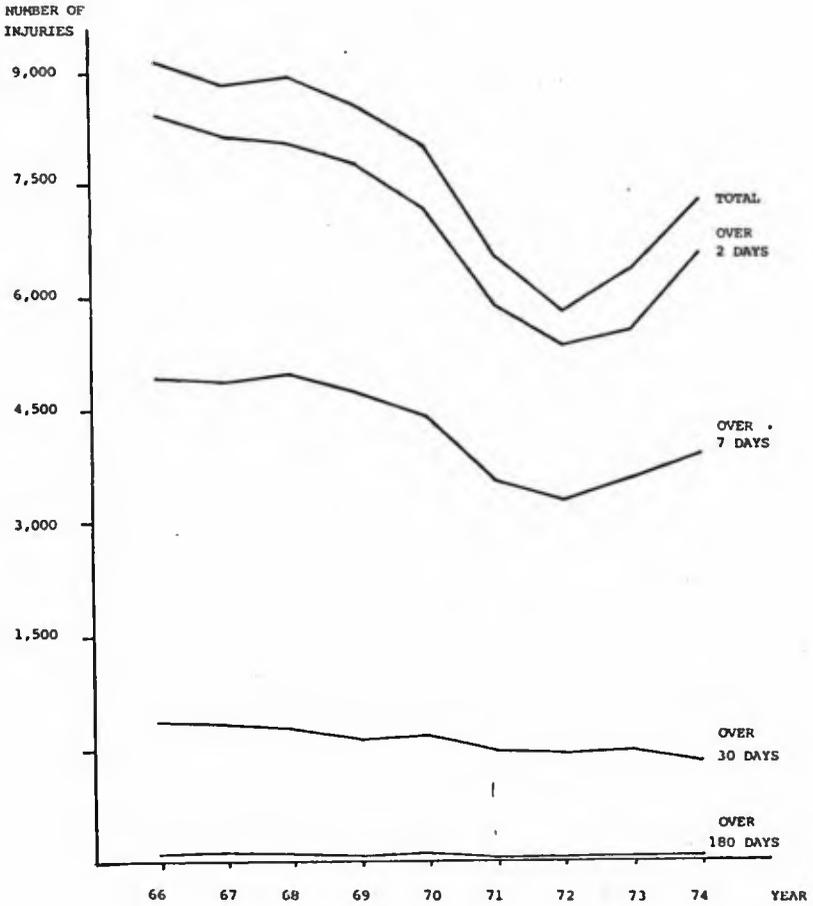


Figure 9

PERCENT EMPLOYEE INJURIES BY MAJOR CAUSE CATEGORY

1966 - 1974 COMBINED

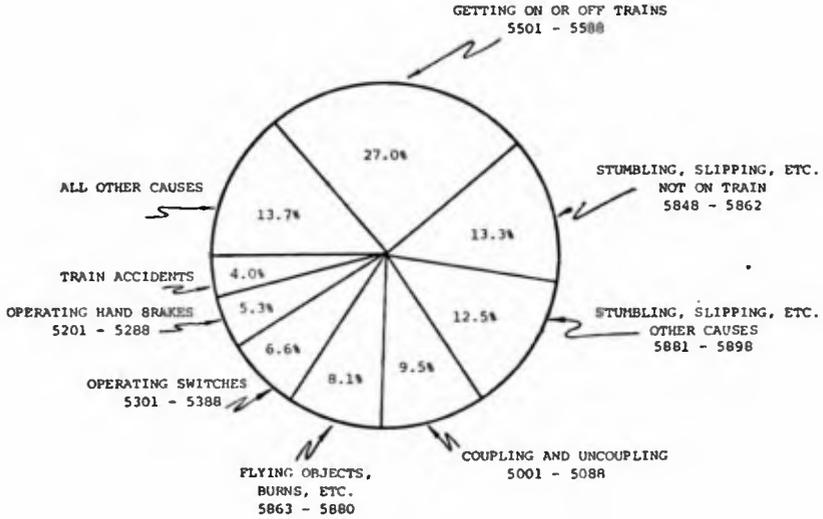


Figure 10

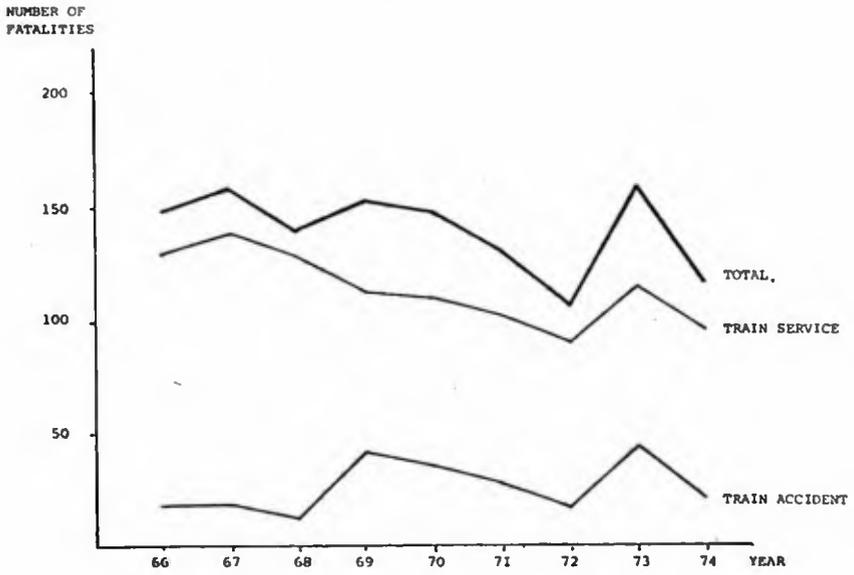
TRAIN AND TRAIN SERVICE ACCIDENT EMPLOYEE FATALITIES
1966 - 1974

Figure 11

PERCENT EMPLOYEE FATALITIES BY MAJOR CAUSE CATEGORY

1966 - 1974 COMBINED

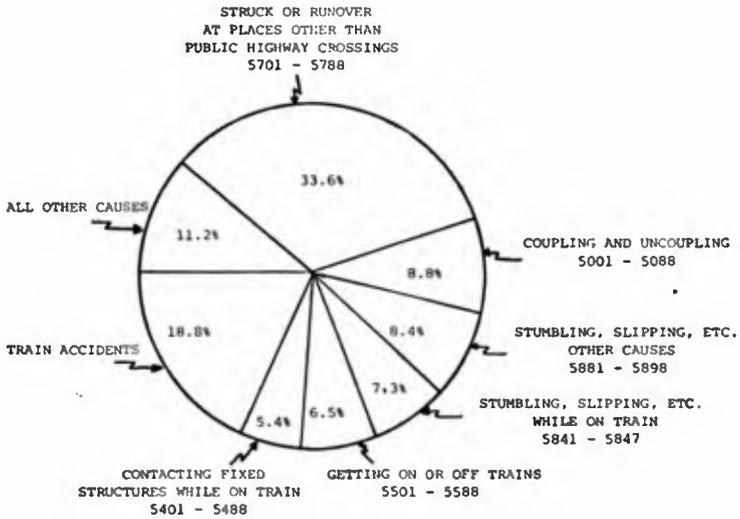


Figure 12

Mr. ROONEY. Thank you very much, Dr. Harris.

Yesterday Mr. Hall's testimony indicated that the human factor as the cause of accident increased by 34 percent last year. Do you have any research into any kind of operating rules that you might have been thinking about promulgating?

Mr. HARRIS. Mr. Hall has the advantage of me. I haven't seen his 1975 data.

The human factor is a very tough one to analyze. Let me describe to you some of them. You can talk about a man getting his hand caught in the door of the cab as a human factor accident, but it could also be considered as a design problem. We are trying to improve the design. You can talk about human factors associated with the ability of a man to get on and off a train. That, also, is a man/machine interface problem, if I can use that kind of jargon.

I don't know how to assess the correct role to be assigned to the human being in that situation.

Surely instruction, surely guidelines, surely operating practices are a very critical part of attempting to insure that people can operate safely and effectively, but I leave to my associates from the railroads the opportunity for further discussion of that issue.

No question, the area of examination of how the human being fits into the system, as I tried to show you in the last figures about the injury and fatality problem, must become a much more central part of our work in the future.

Mr. ROONEY. We discussed yesterday the 16-hour limit on wreck crews. What do you think about that as a human factor?

Mr. HARRIS. Again, if I may defer to one of my colleagues who is more familiar with railroad operations than I, I believe he can attest to his experience in this area. I am not competent to comment on that, to my regret.

Mr. ROONEY. Yesterday we also touched on the transportation of nuclear materials on the railroads. Do you feel that the technology permits safe transportation of such dangerous substances?

Mr. HARRIS. Yes, sir. Under the conditions that we have recommended.

If I may be explicit on this point, the railroad industry has been offered irradiated fuel elements in casks for movement in trains. At the request of the Board of Directors of AAR, I made a specific study of this problem, in association with railroads. From a study that we made of practices in the past, and from my study of the details of cask design and testing, I came to a number of conclusions and made certain recommendations as follows:

The casks that have been designed previously by AEC and now supported by ERDA are very fine shipping containers, but they are not invulnerable. They were designed and tested under a set of explicit conditions. I have recommended and the Operating-Transportation General Committee and the Board of Directors have further recommended to the industry that we control the transportation environment so as to insure that we never exceed in a service accident the conditions under which those that the cask was successfully tested. Those conditions are speeds no greater than 35 miles an hour, and

essentially the absence of flammable materials so there is no fire, because casks were qualified in test in a half-hour fire, and we have many cases where fires much longer than that exist. Therefore, we have made a recommendation that these casks be handled under controlled transportation environment.

If I felt the casks had not been tested as carefully as they have been, I would recommend against their movement. I believe they can be moved safely, but not in regular train service as we are being urged to do by ERDA and by others.

Mr. ROONEY. I would like to have your comment on MKT's refusal to handle radioactive materials.

Mr. HARRIS. Mr. Chairman, I can offer only a technical comment on that issue. I can't speak to the legal or tariff responsibilities.

Mr. ROONEY. The ICC, as I understand it, said that railroads as a commoncarrier must ship the material because of the accident torture tests that the Department took into consideration. Do you think those tests are valid?

Mr. HARRIS. No, sir.

Mr. ROONEY. You do not?

Mr. HARRIS. I believe they are valid in regard to the kind of movement that we have proposed as feasible, but they may not be valid in light of what individual railroads are being requested or even almost directed to do by way of movement of those products.

Again, others of my associates may wish to comment in detail on the legal liability or authority of railroads to induce their own safety requirements because we are liable in the case of an accident.

Mr. ROONEY. Where are your associates?

Mr. LYON. I might simply comment on that. There are several here.

The section of the Interstate Commerce Act which imposes a commoncarrier obligation on a railroad is section 1, paragraph 4. That has a reasonable standard in it. It is the requirement that you perform commoncarrier service reasonably offered, and so forth. There has not been any clear precedent of law or decision by the courts, and so forth, that clearly sets forth what in these circumstances is the legal commoncarrier obligation of the carrier. I think we will simply have to wait and see how the law is interpreted before we know the answer to that question.

Mr. HARRIS. Mr. Chairman, I respectfully hope that the nuclear industry and the ICC can come with us to recognize that from the standpoint of the public of this country we know how to move casks safely, and we ought not to be expected to move them under conditions where we can't be sure they can be moved safely.

Mr. ROONEY. I wonder, Dr. Harris, if you are in a position, based on your research activities, to comment on the desirability of the provisions of H.R. 11804 which relate to removing crew quarters from switching and hump yards.

Mr. HARRIS. Mr. Chairman, I think there have been an incident or two in which crews have been exposed to what they consider to be undue hazards. I believe with the changes we are making in safety, both from the operational point of view under FRA regulations and

from the design changes I have talked about, we are eliminating that hazard. Again the issues go beyond those of simple technology.

Mr. ROONEY. How about the requirement for flagging protection and the blue flag provision?

Mr. HARRIS. Mr. Chairman, again our data clearly show that people are struck from time to time by moving trains. The evidence we have, however, I do not believe supports the rigidity of the regulation that is proposed in H.R. 11804. I believe subsequent witnesses will be in a position to comment in more detail on that point.

Mr. ROONEY. Thank you very much for your testimony this afternoon. We appreciate very much your being here.

Mr. HARRIS. Thank you very much.

Mr. ROONEY. I might say for the benefit of the witnesses who are here, as you know, there are other subcommittee meetings this afternoon. My colleagues may have some additional questions and the record will remain open.

The next witness will be Mr. Harold Hall, vice president—transportation, Southern Railway, Co., Washington, D.C.

STATEMENT OF HAROLD H. HALL, VICE PRESIDENT—TRANSPORTATION, SOUTHERN RAILWAY CO.

Mr. HALL. Thank you, Mr. Chairman.

I have submitted a prepared statement which is obviously too long to read here. I would like to attempt to summarize and supplement that.

Mr. ROONEY. Without objection your statement will become a part of the record, and you may summarize [see p. 107].

Mr. HALL. I am Harold H. Hall, vice president-transportation, of Southern Railway Co., headquartered here in Washington, D.C. I appreciate the opportunity to appear before your subcommittee, on behalf of the Association of American Railroads and Southern Railway Co., and its affiliated rail carriers. My statement and a number of attached exhibits have been submitted here for the record before the subcommittee and I would like to supplement it briefly.

I want to underline again what is stressed in my statement; that safety is of the first importance as the policy of the management of Southern Railway Co. We do not merely pay lip service to that policy, but we do our best to carry it out in practice. We believe the operating rules changes that would be legislated in H.R. 11804 would detract from, rather than enhance, safety, and would only cost the railroads hard-to-come-by capital.

In my statement are statistical tabulations showing the long-term downward trend of deaths and injuries of employees on Southern Railway System lines. There is also a graph showing the decline in the dollar amount of property damage, factored for inflation, in accidents on system lines as reported to the Federal Railroad Administration. This is to help put in perspective the matter of rail safety.

One hears a number of allegations about the unsafe conditions on the railroads, and an alleged decline in rail safety. We do not believe

that there really has been such a decline. Certainly, I have not noticed it on Southern, although the number of reported incidents has increased in the last few years.

The statistics showing those increases in the reported number of accidents tend to be misleading. Inflation has made more accidents reportable. And the accidents that have occurred have tended to be less severe, on average, as shown in exhibit A-1 to my statement. Where it really counts, in the numbers of employee deaths and injuries, safety on Southern has improved.

In my statement, I particularly addressed sections 3, 4, and 6 of H.R. 11804. Section 3, increasing safety law penalties, is unnecessary and likely to have little effect on safety. Section 4 would regulate employee sleeping quarters, perhaps a matter for collective bargaining, but not for statutory enactment, or even FRA standards, in my view. The cost to Southern would be about \$1,112,000 annually, and the industry over \$33 million a year, plus large initial costs. See page six of my statement.

Section 6 also introduces detailed statutory prescriptions into areas which should be left to management, and at most to FRA regulation. The "blue flag" rule proposed, dealing with protection of employees working on equipment, has provisions which would cost Southern alone some \$19,500,000 a year, and its provisions are either unnecessary or would be counterproductive as to safety. See pages 19-21 of my statement.

The "flagging" rule proposed in section 6 would also adversely affect safety, and effectively freeze rail technology at a lower level, restrict railroad service possibilities, and by statute require cabooses and present crew consists. See pages 9-13 of my statement.

The "train conspicuity" rule proposed in section 6—illuminated markers on the ends of all trains—would hurt rather than help safety, for practical purposes, would require cabooses on all freight train movements, and would be enormously expensive. Southern's initial cost would be about \$2,770,000 with \$277,000 in yearly maintenance.

In my statement-in-chief, I did not refer to a couple of safety-connected areas in which Southern has been most active. One of these areas is employee training. Southern has spent about \$2 million on its new training center in McDonough, Ga., near Atlanta, at which it trains people for jobs on the system in the various crafts. These crafts include locomotive engineer, electrician, carmen, machinists, and other shop crafts. Technical training for management trainees is also carried on at McDonough. An important part of the formal instruction given at the training center concerns safety, with substantial input from Southern's safety department.

Southern also, of course, has rules classes for its operating employees yearly, and it requires that train and engine service employees, to remain qualified, must demonstrate a knowledge of the operating rules. New switchmen/trainmen are given formal instruction on the division on which hired, with a strong emphasis on safety. One of the instructors is always the division superintendent of safety.

Southern has a safety department, headed by an assistant vice president, which analyzes safety problems, makes recommendations, and participates in employee training, among other things. Southern has formed safety committees around the system which consist of scheduled employees who meet monthly or sometimes quarterly over dinner with officers of the company, to offer suggestions and consider what should be done to increase safety on our railroad. Management finds these committee meetings of great value. Once a year, there is usually an evening dinner meeting to which the committee members are invited to bring their wives. The committees are composed of representatives of the various crafts, selected by the employees who are members of those crafts.

I would add that union officers on occasion bring safety problems to the attention of management. Cooperation between management and the union representatives on our property is exemplified by the joint safety "Proclamation," dated October 14, 1971, signed by 55 top management and union officers, recognizing the paramount importance of safety.

I thank you for your attention, Mr. Chairman.

[Mr. Hall's prepared statement and attachments follow:]

STATEMENT OF HAROLD H. HALL, VICE PRESIDENT—TRANSPORTATION, SOUTHERN RAILWAY CO.

My name is Harold H. Hall, and since September, 1970, I have been employed as Vice President-Transportation of Southern Railway Company and its affiliated rail carriers, known collectively as Southern Railway System, and which I shall hereafter refer to as "Southern", with my office at 920 15th Street, N.W., Washington, D.C. Before that, I had been General Manager-Western Lines of Southern since April 1, 1968, and before that General Manager-Eastern Lines. My railroad experience goes back to January 1, 1943, when I entered the service of Southern as a telegrapher at Asheville, North Carolina. I subsequently held positions as trainmaster and superintendent at various locations on Southern. I am a member of the American Association of Railroad Superintendents, and have served on a number of Association of American Railroads (AAR) industry committees and on the boards of terminal companies of which Southern is a part owner or tenant line. I am also a member of the Railroad Operating Rules Advisory Committee (RORAC), a labor-management group formed under the auspices of the Federal Railroad Administration (FRA).

As Vice President-Transportation of Southern, I am responsible for railroad operations over the entire System of some 11,000 miles of main-line railroad tracks, located in 13 states and the District of Columbia, for the most part south of the Potomac and Ohio Rivers and east of the Mississippi.

My appearance before your Subcommittee is on behalf of Southern and the Association of American Railroads which represents the industry generally, in opposition to H.R. 11804. I will address myself chiefly to Sections 4 and 6 of the bill, after directing some attention to Section 3. First, however, I would like to put in context the state of safety on Southern, and counter some misconceptions about rail safety that may be current. Our policy is safety. At the very beginning of our Rule Book it is postulated that "Safety is of the first importance in the discharge of duty". The statistics below clearly show that our concern with safety has been effective.

Table 1, below, demonstrates the general downward trend in casualties to employees (killed and injured) since 1965. Exhibit A-1 is a graph showing a similar, though less marked, trend downward since 1969 in the dollar value of reportable accidents on Southern, adjusted for inflation. I acknowledge that the raw figures for reportable train accidents, derailments, etc. have not shared

these trends of late; and my figures do not include grade-crossing accident figures. But the point is that by and large the railroad is becoming a safer place to work, in terms of a trend downward in injuries and deaths of railroad employees. The reported increases in numbers of train accidents are the results of inflation and changed reporting requirements, in large part. There may be more reported accidents, but they tend to be less severe.

TABLE 1.—CASUALTIES TO EMPLOYEES OF SOUTHERN RAILWAY SYSTEM LINES WHILE ON DUTY, 1965-74, AS REPORTED TO OOT

Year	Casualties per million Man-hours		
	Killed	Injured	Total
1965.....	0.14	13.49	13.63
1966.....	.20	13.62	13.82
1967.....	.15	13.44	13.59
1968.....	.16	12.79	12.95
1969.....	.37	10.76	11.13
1970.....	.10	8.80	8.90
1971.....	.13	7.74	7.90
1972.....	.10	6.61	6.71
1973.....	.17	5.97	6.14
1974.....	.07	8.28	8.35
1975.....	.05	(1)	(1)

¹ In 1975, the FRA's reporting requirements were changed, so as to substantially increase the number of reportable incidents. Therefore, the statistics are not comparable with those for prior years. In the injured category, the index number reported rose to 35.68 in 1975. In the killed category, however, the general downward trend continued, with a 1975 index number of 0.05, the lowest of any year investigated (and we looked at the records from 1919 on).

SECTION 3

Section 3 of the bill would increase penalties under the Safety Appliance Acts, the Locomotive Inspection Act, Safety Ash Pan Act, Signal Inspection Act and the Federal Railroad Safety Act of 1970 by varying but substantial amounts to a level of not less than \$500 nor more than \$5,000 per violation. With the exception of the Federal Railroad Safety Act, the penalties in these laws are now set at a flat figure. The effect of the enactment of Section 3 as far as Southern is concerned would be to increase the amount of penalties paid by the railroads, with little or no positive effect on compliance with safety standards. It is Southern's policy to comply with the safety laws and regulations; and it is in our best interest to conduct safe operations. I might add that Southern's record of compliance with the various safety standards and laws is good. Our record is not perfect, but we feel we are doing our best. The proposed increase in penalty will not enable us to make our best better; we will just have to use money to pay penalties that we now use to repair and improve track and equipment.

There are inevitably a certain number of violations, especially of the Safety Appliance Acts (bent handholds, for example), which can be found on any railroad's property, if a hard enough search is made. While a train is in transit, the brake pistons on an individual car can become out of specification as a result of an emergency brake application. Imposition of high minimum fines for such technical, involuntary violations would accomplish nothing except to divert more resources of the railroads from maintenance and safety activities to the payment of fines or for the defense of lawsuits.

SECTION 4

Section 4 would add a new paragraph (3) to Section 2 of the Hours of Service Act, 45 U.S.C. 62(a), which would make it a violation of the Act to provide employees with sleeping quarters which do not give "an opportunity for uninterrupted rest in quarters having controlled temperatures" and which are "not located away from a yard where switching or humping is performed". A similar proposal is the subject of a Federal Railroad Administration proceeding in response to a petition of the Congress of Railway Unions, Docket 74-3, Notice 1, in which AAR filed comments on April 28, 1975. The petition sought a rule that all

employees' sleeping quarters be located more than one mile from railroad property in which switching or humping operations are being conducted. The comments of the Association of American Railroads with respect to that proposal, and the AAR's answers to the questions posed by FRA, are in my opinion applicable to Section 4 of H.R. 11804. I attach as Exhibit A to my statement a copy of the AAR comments.

At page 8 of the AAR comments, it was estimated that there would be a one-time cost of nearly \$20 million to the industry for the move away from existing dormitory facilities, with an additional annual expenditure of over \$33 million. This was based on a survey of a little over two-thirds of the Class I railroads. As those figures are nearly a year old now, they are conservative to the extent that inflation has occurred since. Southern's additional costs annually as a result of Section 4 would be about \$1,112,000, based on an increase of \$3,047 daily in our present cost for lodging and transportation of employees. In addition to this annual recurring expense, our existing investment of \$1,757,600 in dormitories would be a dead loss. We would incur substantial and additional cost, we believe, in establishing alternative facilities. In some places, we might have to build new facilities, where suitable commercial facilities are not available. Because of time limitations, we have not been able to determine precisely the extent to which new facilities might be necessary in order to meet the criteria set forth in the bill, and our figures do not include the costs to Southern of changes in fittings and location of trailers and camp cars used by our maintenance-of-way forces, which are also covered by Section 4.

Another question raised by Section 4 is, how would it be possible for the railroads to assure the opportunity for uninterrupted rest without noise in any quarters, whether they are commercial hotels far from a railroad yard, or railroad-owned dormitories that are away from other railroad facilities? This whole subject might more appropriately be a matter for collective bargaining rather than the subject of FRA rulemaking, much less legislation. On our property, we have been negotiating on this subject with the unions for some time, with the unions asking that the employees be lodged downtown, more convenient to entertainment and restaurants, rather than at or near a railroad yard. As I understand it, the basis for this new requirement would be safety. In this connection, I call the attention to the Committee to an event on August 29, 1974, when a blast ripped through half-a-block of downtown East 9th Street in Chattanooga, Tennessee, in an area in which hotels are located, killing one man and injuring a number of others. I do not know if the cause of the explosion was ever determined, but my point is that locating employees' sleeping quarters away from railroad property cannot insure safety. I am unaware of any accident in one of Southern's yards that has resulted in death or injury to any employee while he was using our dormitory facilities, or in any damage to a dormitory.

Finally, I call attention to the material on pages 4 through 6 of the AAR comments, comparing the noise levels recorded in commercial hotels and railroad dormitories. The railroad dormitories and the commercial establishments were roughly equivalent in noise levels. I might add that the survey in question was made by Southern's personnel, on our property, and at commercial motels in our service area.

SECTION 6

Section 6 of the bill would add four new subsections, (g) through (j), to Section 202 of the Federal Railroad Safety Act of 1970, 45 U.S.C. 431. My statement is concerned with (g) through (i).

The first of these, (g), would make a part of the Safety Act a version of railroad Operating Rules 99, the flagging rule, which would require rear-end flagging in automatic block signal (ABS) and centralized traffic control (CTC) territory. The operating rules of most railroads, including Southern, do not require flagging in ABS and CTC territory. The reason is that there is no safety need for such a requirement, and indeed safety would be hindered more than helped by it. Where a line is signaled, the primary and exclusive reliance by the train crew must be on the aspects of the wayside signals, and not on whether there is some flagging or torpedoes under the wheels. This absolute reliance on signal aspects must not be diluted by other, far less effective warnings. Further, where responsibility for preventing rear-end collisions is divided, as between the en-

gineer of the following train and the flagman of the preceding train, each responsible person is all too prone to rely on the other to obey the rules. Divided responsibility often means no one takes responsibility. This was our experience on Southern, before we changed our Rule 99 about 12 years ago, to place all of the responsibility on the engineer of the following train in signal territory.

It is our experience that the relatively few rear-end collisions that have occurred on Southern in signal territory have been due to failure on the part of the train crews to pay attention to signal aspects and comply with the pertinent operating rules. This was recognized by the FRA's RORAC which by unanimous vote on July 22, 1975, recommended a version of Rule 99, to be added to the AAR Standard Code, that contains an exception to the flagging requirement in signal territory. This recommended Rule 99 is attached hereto as Exhibit B. It is the considered consensus of the Committee of experts as to what is needed and appropriate. We at Southern consider this to be a good Rule 99, one which would fill all safety needs. The FRA may ultimately promulgate the recommended Rules 99 in a rulemaking proceeding which began with an FRA advanced notice of proposed rulemaking dated August 9, 1973, 38 F.R. 21503, concerning the flagging rule, among others.

The vice in the Rule 99 proposed in (g) is that it would freeze into statutory law the requirement that there be a caboose on the end of every freight train and that flagging be done even where there is no need for it. One reason Southern operates cabooses on its freight trains is that there is a requirement in our labor agreements that we do so. Proposed (g) would effectively prevent us from negotiating changes in the agreements to permit operation of trains without cabooses, and without personnel in the rear. As an example, in the future Southern might find it desirable to operate short, fast freight trains without a caboose, offering an expedited service, and with fewer crew members. Except for flagging, there is little for an employee at the back of a train to do; work in connection with switching cars in and out of a train is usually done from the head end.

While it is difficult to quantify the present cost to the railroads of proposed (g), it is likely that the long term cost would be substantial, in terms of the effects of the freeze on technology and railroad operating techniques and services that (g) would cause. Proposed (g) would also cancel out some of the efficiencies gained from the installation of automatic block signals and centralized traffic control devices, and other innovations.

In my opinion, (g) would adversely affect safety. On Southern, as on other major railroads of which I have knowledge, train crews must rely on the aspects of wayside signals, and not on "crutches" such as flagging. To have flagging in signal territory is to dilute signal reliance. If a train crew expects to see a flagman, or hear torpedoes, as well as see an adverse signal aspect, in the event there is another train occupying the track ahead, they will be more inclined to ignore restrictive signal aspects in situations where they do not see flagging also. Should the crew in the train on the track ahead not perform the requisite flagging (as has happened), then a tragedy could result, even though the wayside signals gave full warning of the hazard ahead. And, of course, sometimes restrictive signal aspects are triggered by breaks in the tracks, or obstructions on the line. In such instances, there would of course be no flagging and a crew leaning on the "crutch" of flagging could be lulled into complacency when in fact there was a dangerous condition ahead.

The only way that the full potential for safe operations in signal territory can be achieved is by mandating absolute obedience by crews to the signal aspects and related rules, without the dilution of flagging. Railroad signals are "fail-safe". A false proceed on a signal is a very rare phenomenon. If a signal is out of order, it will display its most restrictive aspect; and a "dark" signal, one which is not lit because of a failure in power, vandalism, or some other extraordinary condition, must be treated by a train crew as displaying its most restrictive aspect.

So, not only is the version of Rule 99 that (g) would make a part of the statute unnecessary for safety, it would have an adverse effect on railroad safety. And, it would tend to inhibit technological innovation in railroad operations, and to negate in part the benefits of past technological improvements in signaling and in railroad operating practices.

Section 6 also would add a new subsection (h) to Section 202 of the 1970 Railroad Safety Act, to incorporate into the statute a "blue-flag" rule, prescribing protection to be provided "for all employees working on, under, or about an engine, car, or train". As I will show below, there is no need to enact a "blue-flag" rule into law, because the desirable, practical parts of proposed (h) are already reflected in the operating rules and practices of Southern and, I believe, other railroads. Second, a blue-flag rule has been under consideration by RORAC, and the FRA has had the matter under active consideration. Please refer to the advanced notice of proposed rulemaking published on January 15, 1974, at 30 F.R. 1862, and notice of proposed rulemaking titled "Blue Flag Protection of Employees", dated July 21, 1975, appearing at 40 F.R. 30495, Docket No. RSOR-3, Notices 1 and 2. Copies of the AAR Comments on these notices are attached as Exhibits C (dated March 15, 1974) and D (dated September 5, 1975).

Southern's Operating Rules Nos. 10 and 26 already embrace the subject matter of subparagraphs (1), (2), and (3) of (h). Even so, we oppose placing them into a statute, where these practices would be frozen. Southern's Rule 10 (in pertinent part) and Rule 26 read:

"10. Color Signals

Color

.....

Blue

Indications

1. Stop. Repairing cars. Rule 26.

"26. A blue signal, displayed at one or both ends of an engine, car or train, indicates that workmen are under it. Equipment thus protected must not be coupled to or moved. Each class of workmen will display the blue signals and workmen of the same class are alone authorized to remove them. Other equipment must not be placed on the same track so as to obstruct view of the blue signals, without first notifying the workmen.

When emergency repair work is to be done under cars in a train and a blue signal is not available, the engineer and trainmen must be notified and protection must be given by the train and engine employees to those engaged in making repairs."

In (h) (1) it is stated "each class of workmen shall display the blue signals and the same workmen are alone authorized to remove such signals". Were this language to be taken literally (as safety statutes tend to be), the same individual would have to remove the blue signals as placed them. If work proceeded over more than one shift, either the blue signals would have to be removed and replaced as each shift changed, or the first workman to place them would have to be recalled to duty to remove them. Southern's Operating Rule 26 now makes clear that the individual who places blue-flag protection need not be the person to remove it.

We also object to the requirement in (h) (2) that the blue signal shall consist of a blue light by night and a blue flag or marker by day. Sometimes it is desirable to use a blue light rather than a flag or marker during the day. If there is to be legislation on the subject (and there should not be), it should set a performance standard (e.g., "visible blue warning signal") rather than prescribe hardware to be used. We also object to the reference to employees working "on, under, or about an engine, car, or train". Quite frequently employees may be working "about" a train, as, for example, walking beside a train while inspecting it, where there would be no need for blue flag protection because movement of the train being inspected could not injure the employee.

With respect to the subject matter covered by the prescriptions in (g) (4) and (5), Southern's existing practices are as follows: In a hump classification yard workmen do not perform work until the track in which they will be working is secured by the person in charge of the switching operation. This is done by asking the yardmaster to "block out" the track involved. The yardmaster will instruct the hump conductor to block out the track, and the hump conductor will in turn instruct the car retarder operator to block out the track. The car retarder operator will line the switch lever so that no cars can enter the particular track, and will place a pin in the retainer hole so that the switch level cannot be moved unless the pin is first removed. After the car retarder operator advises the hump

conductor that the track is blocked out, the hump conductor (who works in the control tower) then places a cap over or a clip under the code button for that track. This prevents the coding of the track for car movements until the cap or clip is removed. After that has all been done the hump conductor will advise the yardmaster that the track has been blocked out, and the yardmaster will give the workmen authority to begin their work.

In the case of a flat yard, the yardmaster will instruct the switch crews that workmen will be working on named tracks so that no cars are to be switched to those tracks. After he receives a response indicating that the crews understand the instructions, the yardmaster will authorize the workmen to begin work in the track or tracks involved. In some cases, blue signals will be placed at the switch, and sometimes a padlock will be applied to the switch by a workman. Normally, work on cars or locomotives in receiving tracks is not of such a nature as to require a workman to place himself in a position which would cause him to be endangered by the movement of the cars.

In tracks where trains are being built, workmen do not work on cars or locomotives in such a way that movement of the equipment would endanger them until the person in charge of the train building operation (generally the yardmaster) has informed them that the train is ready for such work to be done and they have authority to put a blue signal on the track or tracks in question.

Southern's repair track facilities are protected by a blue flag or a blue light, locked switches, and derais. The "one-spot" repair tracks have electric switch panels from which the blue signals, locks, and derais are controlled. These "one-spot" tracks have a "rabbit" arrangement under which the cars are attached to a cable which pulls them along the track. The workmen doing the work involved have control over the operation of the "rabbit." No switching movements can be made into or out of repair tracks until the person in charge (generally the repair track foreman) operates the necessary switches to remove the blue signal, line the derail for movement, and unlock the switches. At other types of repair facilities, the repair track foreman must walk to the location of the blue flag or light, or derail and switch, and there make the necessary arrangements before switching movements can be made.

It is apparent that Southern's existing practices cover the substance of (h) (4) and (5), so there is no need for legislation to fill a safety gap. I believe Southern's practices are typical of those followed in the railroad industry. Paragraphs (4) and (5) do, however, have some provisions that depart from existing practices and could cause an increase in railroad expense with no safety benefit. They are also undesirable from the safety standpoint.

Paragraph (4) extends the hump yard notification requirement to work performed on "any other track." This would appear to be inclusive of all railroad tracks. Often a yard crew will couple air hoses in industrial areas, and on interchange tracks in service yards where blue flag equipment is not available. In such cases, all crew members know and understand what work is being performed and that the cars are not to be moved until a crew member has reported that the work has been completed. To require the provision of blue flagging equipment and its display on "any other track" would cause totally needless expense and a delay to work with no perceptible gain in safety.

Paragraph (5) states that switchmen or road crewmen may apply locks when bringing an engine to a train. This would involve an additional group of people in the protection procedure, a complication without benefit. The involvement of other classes of workmen would allow opportunity for confusion and hinder rather than help safety.

Perhaps the worst part of (h) is paragraph (6), which would require blue flagging while air tests are made on trains outside of the confines of yards. This would be a useless yet enormously expensive requirement. When a train occupies tracks outside yard limits, it has the sole right to be where it is. In signal territory, it is protected against other trains by the signals. In non-signal territory, its right to be where it is is protected by train order. And, of course, in non-signal territory under appropriate circumstances Rule 99 flagging will protect the train during switching and brake tests. (6) would pile labor-intensive, needless precaution on top of precaution.

On Southern alone, if this rule were to be in effect and if business is at the levels we expect during 1976, the cost of (h) (6) would be over \$19,500,000 during the 12 months of 1976.

Yard crews often perform industry work outside yards. We expect we will have about 265 yard crews per day engaging in such work on Southern during 1976 (250 did such work in 1975, and about 278 in 1974). Were yard crews to make air brake tests outside yards under blue-flag protection, our studies have shown that each crew would be delayed an average of 10 minutes per brake test. Each crew performs an average of 5 brake tests per shift at the cost of \$50 per yard crew hour, at existing wage rates. This delay would cost \$3,454,493 per year, based on a 6-day workweek and the expected 1976 level of business. With the average of 250 crews which operated daily during 1975, the extra cost during that year would have been \$3,258,956.

Brake tests performed on line-of-road under blue-flag protection would be even costlier. In December, 1975, Southern operated a total of 578 trains, of which 250 were locals and 328 were through trains. During a trip, a local will require on the average 12 brake tests to be made on line of road, while a through freight will require an average of 3. This means that during December Southern made a daily average of 3,984 brake tests. It would require an additional 5 minutes per test to "blue flag" each one. This would mean a daily delay of 332 hours or a daily cost of \$41,500, using the conservative figure of \$125 an hour as the cost of train delay. The total annual cost (figuring a seven-day workweek) would thus be \$15,147,500, at the 1975 level of business. At the expected 1976 level, the cost would be \$16,056,350.

Were (h) to be adopted into law, we would have to equip our engines and cabooses with blue flag equipment at an initial cost of about \$43,000.

Section 5 of the bill would add a new subsection (1) to Section 202 of the Federal Railroad Safety Act of 1970, so as to require every freight and passenger train to have on its rear car "highly visible markers which are lighted during periods of darkness or whenever weather conditions restrict clear visibility." This would create substantial operating problems for Southern and other railroads, not the least of which is determination of how the markers would be powered, especially where a freight train lacks a caboose. All passenger cars would have to have the necessary equipment on both ends, as would cabooses, or there would have to be a lot of switching around of cars to ensure that the equipped end of an equipped car is on and facing the rear of the train. This would be expensive, unnecessary and, as has been demonstrated in the comments offered by the AAR under the dates of September 28, 1973, and February 21, 1975, in the FRA notice of proposed rulemaking "Passenger Train Visibility", Docket No. PC-1, could create safety and medical problems. These comments are Exhibits E and F hereto. The AAR also submitted comments on April 15, 1975, on a UTU petition for proposed rulemaking, "Freight Train Markers", FRA Docket No. 74-5, a copy of which is attached as Exhibit G. The importance of the problem of signal dilution dealt with in Exhibit B cannot be overstressed.

I addressed the issue of the importance of reliance by the engineer on rules and signals, rather than distracting "crutches", in my earlier discussion of Rule 90. The same concerns apply to the proposal to place illuminated markers on the rear of trains, presumably as a means of reducing chances for rear-end collisions. In my opinion, the chances for accidents would be enhanced by the proposal in Section 5. It is appropriate to repeat here for emphasis some things said in behalf of the AAR at pages 3-5 of its comments on FRA Docket No. PC-1, Notice 1 (Exhibit E) :

"... [N]othing should hamper the engineman's concentration on [signal] observation. Signals must be viewed in an unconfusing and undistracting environment and rules observation must be undiminished by even a fleeting choice of whether to obey the code or a flashing light off in the distance. There are two components to this line of reasoning—one is that signals must be adhered to and the other is that nothing should dilute the message which signals are designed to convey.

"An example of the need for signal adherence is found in the experience of the Chicago South Shore and South Bend Railroad. The CSS&SB is the last of the electric interurbans still providing the service for which it was originally designed and constructed; it operates over 90 miles of line connecting South Bend, Indiana, with Chicago, Illinois. The last passenger train rear end collision on the SCC&SB happened, according to Elden E. Lidke, Superintendent, Transportation Department, on March 4, 1952. This

accident involved two passenger trains, one of which was to pass the second at a passenger station siding. At the approach to the station, a switch was normally thrown to divert the following train to an adjacent track. On the day in question, the switch attendant failed to make the throw and the engineer of the second train, relying on past experience, disregarded the block signal and crashed into the stopped train. No display of lights or panels would have prevented this accident—the engineer of the second train 'knew' that the block was red because the train ahead of him was stopped at the station and he 'knew' that the switch was 'always' thrown to divert his train.

"Signal dilution, that is, the division of responsibility between trackside and train mounted 'signals' would cause enough confusion if all the engineer had to worry about was the rear end of a passenger train ahead of him on the same track, but the real world of railroading today is not that simple. He must also be on the alert for track obstructions, misaligned switches, landslides, broken rails, derailed equipment fouling adjacent tracks, cars on a siding out-foul of the main track, shifted siding and so on.

"The diluting effect of devices introduced to 'back-up' the signal system is shown in the following example from H. H. Hall, Vice President-Transportation, Southern Railway System: 'We found such an impact [reliance on the back-up instead of the primary system] in connection with operations in automatic train stop territory, before the automatic train stop system was removed from our railroad. Engineers tended to place a psychological reliance on the automatic train stop and routine acknowledgement of it instead of keeping alert to the wayside signals. An engineer would encounter a restrictive signal aspect, simply activate the automatic train stop acknowledgement on the locomotive, and otherwise not obey the signal. Sometimes a tragic accident would result. An example is a rear-end collision on Southern at Winfield, Tennessee, on September 23, 1966.'"

A safety system which relies at all on the visibility to the engineer of the train in front of him is inherently unsafe. Railroads are often curved, and have some relatively steep grades, so that the view from the engine can be shorter than the stopping distance required for the train. (Train stopping distances are far longer than those for motor vehicles.) That is why the railroads have invested in multi-million dollar signal and communications systems, and operate trains by train order rather than line of sight in non-signal territory. All too often, by the time an engineer can see the train ahead, it is too late to stop short of a collision.

We estimate the cost to Southern of equipping passenger cars and cabooses so as to comply with the requirements of (i) would be about \$2,770,000. This is based on fitting 128 passenger cars at a cost of \$1,891 each, and 520 cabooses at a cost of \$4,863 each. (Not only would lights, wiring, brackets, etc., be required, but adequate electrical power sources would have to be installed on cabooses.) We feel that these costs are conservative, and could easily be in the neighborhood of \$10,000 (or more) for each caboose, depending on how (i) is interpreted by the FRA and what equipment would be required. We estimate the annual cost to maintain the equipment on our passenger cars and cabooses would be about \$277,000. Again, we feel this is a conservative estimate. Cabooses and all passenger cars would have to be equipped, because there would be no way of knowing which passenger car would be on the end of a train at any given time; and both ends of every passenger car and caboose would have to be equipped, to avoid having to turn them. There are some freight operations on which today we do not operate a caboose, for example, transfer train movements, certain interchange movements, and some switching movements; and in an emergency, we can operate a regular freight train without a caboose. But (i) would compel us either to put cabooses on all of these movements where there are now none, or else develop and have available expensive portable marker and battery pack equipment to be hung on the rear car of each such movement. The cost of such equipment would be great, though we have not calculated it because of time constraints governing the preparation of this statement.

Like the proposed Rule 99 in subsection (g), the requirement in (i) would lock the railroads into the use of cabooses on freight trains, as a practical matter. It would add the force of law to the present labor contract provisions that prevent the operation of short fast trains with reduced crew consists and without cabooses. This does neither the shipping public, the public in general, nor the railroad industry any good, nor does it serve the real, long-term interests of railroad employees.

CONCLUSION

The increased costs that would be imposed on Southern Railway System lines and on the railroads in general by the provisions in the proposed legislation addressed here are substantial. The cost of these new statutory rules would be a drain from the railroads' retained income, and would have to be replaced from other sources. A primary source for many railroads would probably have to be the financial aid recently authorized by Congress in the Railroad Revitalization and Regulatory Reform Act of 1976.

These provisions in H.R. 11804 would freeze rail technology at its present level in a number of important areas, and significantly inhibit the railroads from reducing costs and offering more-efficient, lower-cost service to their customers. In other areas, present-day rail efficiency would be reduced. In a time of energy shortage and inflation, I suggest that it would be improvident for Congress to impose such restrictions on the railroads. The chief effect of this bill would be to cause Southern and other railroads to hire more people. The only likely effect on safety would be adverse.

I appreciate the opportunity to be heard, and hope that the provisions of H.R. 11840 discussed above will be rejected.

TRAIN ACCIDENT PROPERTY DAMAGE
AS INITIALLY REPORTED TO DOT
SOUTHERN RAILWAY SYSTEM LINES
DOLLARS PER BILLION GROSS TON MILES
FACTORED FOR INFLATION
1969 - 1975

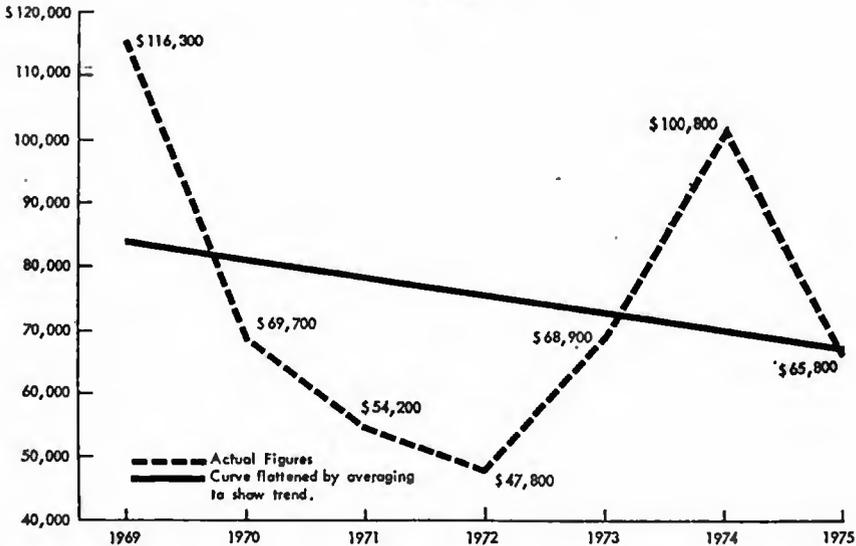


EXHIBIT A1

H. H. Hall
 EXHIBIT A

Before the
 Department of Transportation

Federal Railroad Administration

Sleeping Quarters)	Docket 74-3
)	Notice 1
for Railroad Employees)	
)	

Comments of
 The Association of American Railroads

In the February 13, 1975, Federal Register, it was announced that FRA was considering a petition of the Congress of Railway Unions seeking to require that all employee sleeping quarters be located more than one mile from railroad property on which switching or humping operations were being conducted. FRA wisely, in view of the facts and in view of its recent regulatory actions (detailed in the Register notice), decided that geographical proximity was not, of itself, a fruitful area for rulemaking activity.

However, the Federal Railroad Administration did indicate that it believed that the sleeping quarter noise standards of the

Department of Housing and Urban Development were reasonable and that "the noise level in [railroad employees'] sleeping quarters should not exceed 45 dB(A) for more than 30 minutes during any eight (8) hour period."

Railroads are very concerned about the safety of their employees for personal, personnel and financial reasons which are so obvious that they need not be elaborated. As a general proposition, however, they believe that the matter of employee sleeping quarters, their adequacy and their locations are best left to the arena of labor/management negotiations, where the parties directly affected can have the greatest influence upon working (and resting) conditions.

1) Should FRA prescribe noise level standards for sleeping quarters that railroads provide or make available to their employees? While, under the Federal Railroad Safety Act of 1970, FRA certainly appears to have the authority to prescribe standards in this area, the railroads can find no need for this authority to be exercised. Not only has there been no showing in the petition of CRU that a noise-caused safety hazard exists generally or that excessive noise levels in sleeping quarters have prevented employees from enjoying an adequate rest period but if FRA were to act in this area, where would it stop? What of the employee's at-home rest? Would FRA reasonably hope to regulate the off-duty hours of railroad employees to ensure that family members did not watch television with the volume turned too high while the employees were attempting sleep? Could there be any thought that the noise producing activities of neighbors of employees -- for instance lawn mowing -- might be limited? And, most importantly, how could FRA

regulate the employee's off duty and off property hours to ensure that they do, in fact, use the time provided for rest to actually obtain sufficient rest for the safe performance of their duties?

Absent a showing of need for regulation, AAR requests that the Federal Railroad Administration affirmatively find that no standards are necessary.

2) Should these noise level standards apply only to sleeping quarters in railroad owned or operated lodging or should they also apply to hotels, motels and rooming houses? Logically, if standards are needed, it is because employees are unable to acquire adequate rest due to noise exposures and not due to the ownership of the facility in which they sleep. FRA's lack of jurisdiction over commercial facilities would produce great inconsistencies if company-owned premises were subject to rulemaking.

3) What should be the maximum allowable noise level in these sleeping quarters? The maximum noise able to be tolerated without interrupting sleep varies from individual to individual. Psychological conditioning also plays an extremely important, and not yet fully understood, role. For example, consider the classic case of the man from Manhattan, unable to sleep on a farm because of the sound of insect "night-music," while his rural cousin is kept awake by the cacophony of city traffic. The literature of sleep is replete with examples of the mother who is easily awakened by the merest whimper from her new baby while able to sleep through the jangle of her husband's alarm clock. The author grew up alongside a midwestern railroad mainline and later lived within a quarter-mile of another, able to sleep soundly

each night as freight trains rumbled by. Without repeating the full quotations from treatises on noise cited in the individual comments of the Norfolk and Western, the conclusion drawn by the University of London's Professor William Burns does bear a second reading:

In the face of these varied and complicated relations, many of them of a highly individual and personal nature, it is not surprising that it is virtually impossible to lay down rigid rules of a practicable nature for preventing disturbance of sleep by noise. (Full citation, pp. 6 & 7, comments of the Norfolk and Western Railway Company in this docket.)

If FRA does determine, and can prove, that maximum noise levels must be prescribed, they should be significantly higher than 45 dB(A). Normal conversation is in the 60-70 dB(A) range and television and radio volumes are typically adjusted to produce somewhat higher sound meter readings than that.

A rather extensive noise inventory was made on the property of one of AAR's members, with decibel meter readings taken in dormitory rooms, in the sleeping quarters of commercial facilities, on board a passenger train and on board an over-the-road highway bus. The general conclusion appearing from the readings taken in railroad-owned and commercial sleeping facilities is that, after taking base-line readings with the heating and airconditioning systems turned off, the meter jumped no higher for passing railroad activity than it did for turning on the heating/cooling systems. For instance, at one company-owned facility, the base reading of 47 dB(A) increased to 54 dB(A) when the air conditioner

was turned on. Street traffic 30 feet away and locomotive diesel horns 235 feet away both showed 52-58/59 on the meter. Another location yielded a "quietest" reading of 42 dB(A), an ambient level of 53-55 dB(A) with the air conditioner on and just 47 dB(A) with three locomotives idling about 300 feet away.

A dormitory located 100-150 feet from the track and 500 feet from the nearest public highway produced meter readings of 50 dB(A) with the heat on, and 50 dB(A) with the heat off but with either a train or an automobile passing by.

Five commercial motels gave an average reading of 52 dB(A) with the air conditioners running and the noise of this machine masked traffic sounds. By way of comparison, readings in the sleeping compartments of a moving passenger train were generally above 60 dB(A), peaking to the mid-70's over switches and cross-overs and a new inter-city bus yielded 71-72 dB(A) while traveling at 55 miles per hour. In a railroad work trailer equipped with sleeping quarters, normal noise levels were over 45 dB(A) and they peaked at 78 dB(A) when a diesel horn sounded 75 feet away on the main line -- that same train produced an "ambient background" reading of 55-57 dB(A).

This survey shows, for sure, that it is theoretically possible to get sound meter readings as low as 45 dB(A) in railroad sleeping quarters, but not unless the "normal" noise associated with heating and air conditioning is turned off. In addition, it shows that "normal" noise levels are significantly higher than 45 dB(A) and

that railroad operations contribute little, if any, more noise to the inside of a dormitory than do the furnace and air conditioner fans and related equipment. In the absence of either specific, documented complaints about noisy sleeping quarters or proof that noise levels equivalent to normal conversation prevent adequate rest and therefore cause unsafe conditions, 45 dB(A) cannot be supported as a reasonable maximum allowable noise level for railroad sleeping quarters.

4) Should these noise level standards apply to sleeping quarters used by employees subject to the Hours of Service Act? Should it also apply to sleeping quarters used by other railroad employees?

If noise level standards are adopted, they should apply only to the sleeping quarters used by employees subject to the Hours of Service Act, and not to those used by other railroad employees. However, AAR's members again urge FRA to determine that no sleeping quarter noise standards are necessary.

5) What means are available to reduce noise levels in sleeping quarters? What are their relative costs and effectivenesses? Standard architectural and engineering design practices show that wall thickness, insulation, the softening of sound reflective surfaces with carpets and drapes and using air-entrapping windows and doors (so-called "storm windows") will all, singly or in combination, reduce the transmission of sound through to the inside of a building. The exact mix of these and other practices will depend upon local conditions, upon the kind of noise to be abated, upon the geographical proximity of the structure to hills, valleys, ditches, etc., to such an extent that generalized

calculations of cost and effectiveness are all but impossible. Other than the general observation that it costs more to add sound proofing to an old building than to design it into a new one, little can be said absent a specific factual situation.

6) Should sleeping quarters for railroad employees be prohibited within one mile of locations where switching or humping operations are performed? What impact would this prohibition have on existing sleeping quarters? Would the safety benefit of this prohibition justify the monetary cost of compliance to railroads which would ultimately be borne by the public? Unless the FRA is prepared to attempt to prohibit railroad employees (or, indeed, the general public) from living within one mile of switching and humping activities, no such prohibition applied only to employee sleeping quarters is reasonable.

An impact survey was made of a sample of Class I railroads across the country -- the sample railroads account for 67.5 percent of all Class I railroad employment. These railroads maintain or use 289 facilities within one mile of switching/humping activities and these facilities are used by 11,863 employees in an average 24-hour period. If they had to be lodged more than a mile from the proscribed operations, the total added annual cost for such expenditures as transportation, and more costly facilities would amount to 22.5 million dollars in addition to a one-time cost for the move of 13.4 million dollars. Because the surveyed railroads represent about two-thirds of Class I

employment, it is reasonable to extrapolate a total industry added annual cost of more than 33 million dollars and almost 20 million in additional one-time expenditures. With no provable safety benefit, there is no justification for imposing such a cost on the railroads and, ultimately, on the public.

Conclusion

FRA should respond to the petition under consideration by finding that no noise standards are necessary, that those proposed are entirely too restrictive and that there is no safety and cost benefit to be gained by either the imposition of noise standards or the requirement that sleeping quarters be located more than one mile from switching and humping operations.

Respectfully submitted,

Thomas A. Phemister
Assistant General Solicitor

April 28, 1975

Association of American Railroads
1920 L Street, N. W.
Washington, D. C. 20036

Rule 99 Revised*FINAL*H. H. Hall
EXHIBIT B
DRAFT

JUL 22 1975

AAR Standard Code Format

- (A) When a train is moving on the main track at less than one-half the maximum authorized speed (including slow order limits) in that territory flag protection against following trains on the same track must be provided by a crew member by dropping off single lighted fuses at intervals that do not exceed the burning time of the fusee.
- (B) When a train is moving on the main track at more than one-half the maximum authorized speed (including slow order limits) in that territory under circumstances in which it may be overtaken, crew members responsible for providing protection will also take into consideration the grade, curvature of track, weather conditions, sight distance and relative speed of his train to following trains and will be governed accordingly in the use of fusees.
- (C) When a train stops on main track, flag protection against following trains on the same track must be provided as follows: a crew member with flagman's signals ^{1/} must immediately go back at least the distance prescribed by timetable or other instructions for the territory and place two torpedoes on the rail 100 feet apart and one lighted fusee. He may then return one-half of the distance to his train, where he must remain until he has stopped the

approaching train or is recalled. When recalled, he must leave one lighted fusee and, while returning to his train, he must also place single lighted fusees at intervals that do not exceed the burning time of the fusee. When the train departs, a crew member must leave one lighted fusee and until the train resumes speed not less than one-half the maximum authorized speed (including slow order limits) in that territory, he must drop off single lighted fusees at intervals that do not exceed the burning time of the fusee.

- (D) When required by the railroad's operating rules a forward crew member with flagman's signals must protect the front of his train against opposing movements by immediately going forward at least the distance prescribed by timetable or other instructions for the territory, placing two torpedoes on the rail 100 feet apart, and remaining at that location until recalled. For reference purposes please see the following operating rules _____.
- (E) Whenever a crew member is providing flag protection, he must not permit other duties to interfere with the protection of his train.

EXCEPTION: Flag protection against following trains on the same track is not required when the rear of the train is protected by at least two block signals or an

absolute block, 2/ or is within interlocking limits;
or a train order or special instruction specifies
that flag protection is not required.

1/ Flagman's signals:

Day signals - A red flag, and not less than _____
torpedoes and _____ fuses.

Night signals - A _____ light and not less than _____
torpedoes and _____ fuses.

2/ An absolute block is a block in which no train is permitted
to enter while it is occupied by another train.

as research, operations, safety, statistics, law and federal legislation and regulation. insofar as those matters require joint handling in the interest of providing safe and efficient railroad transportation to the public. The AAR is the joint representative and agent of its members in connection with federal legislative and regulatory and policy matters of common concern to the industry as a whole. This proceeding, involving an item from AAR's Standard Code of Operating Rules in particular, and nationwide railroad employee safety practices in general, has significance for the entire railroad industry.

The Blue Flag Rule: What it is and
what it isn't

Rule 26 as originally adopted April 14, 1887, provided that "a blue flag by day and a blue light by night, placed on the end of a car, denote that car inspectors are at work under or about the car or train" This statement of what the blue signal means has remained basically unchanged since that time. When displayed, the blue flag* tells railroaders, and in particular operating crews, that a fellow worker is in a position such that he is likely to be injured if the marked equipment is moved. As a rule for operating

* For convenience, these comments will refer to the required signal as a flag without forgetting that Standard Code Rule 3 specifies a flag by day and a light by night or that Rule 9 calls for night signals to be displayed during the day if "day signals cannot be plainly seen."

crews, Rule 26 is one of the clearest and most faithfully observed standards of conduct in the book because its meaning is so very clear - equipment must not be permitted to come into contact with or to obstruct the view of cars protected by the blue flag - and the consequences of its violation are so well understood - death or serious injury may result.

What Rule 26 does not do is to specify, in so many words, when workmen should display the blue flag. There are at least two reasons for this: one, Rule 26 is an operating rule directing movement of, and not work on, trains and, two, the time for placing blue flag protection is obvious from a reading of the text: since equipment protected by the blue flag "must not be coupled to or moved," the flag should be displayed whenever coupling or movement would place a workman in jeopardy. Because most carriers interpret the phrase "under or about" to mean "under, on, in or between," activities performed "alongside" the equipment (for example, seal checking) which do not place employees in jeopardy are permitted without flagging.

An important area of strength for the rule stems from adherence to the principle that only that class of workmen who erect the blue flag are permitted to take it down. Not only does this practice protect the last man to complete his part of the job, but, by so protecting him, it encourages him to "hang out the flag" when he goes back along the train to work. This last point cannot be

overemphasized. The available data shows that failure to display the blue flag is much more a factor in accidents than failure to obey the flag that is displayed. And that is the final point on what the blue flag rule is not - it is not a guarantee of anything. In the last analysis, the protection available under Rule 26, like all safety and all operating rules, depends upon compliance by the workers who should display the flag and by those who should heed the display.

The "Minimum Standards" Issue: Guidelines or Uniformity?

As was argued in this Association's comments in Docket No. RSOR-2, consultation with railroad personnel in positions of responsibility for both rules drafting and rules enforcement leads inevitably to the conclusion that "absolute uniformity of application" is impossible. Operating conditions vary from one railroad to another as do the historic precedents from which rules are formed. These differences have resulted in variations of Rule 26 which may make its wording non-uniform across the country but which nevertheless have led to the adoption on each property of a blue flag rule which provides protection to railroad employees while they are inspecting, repairing or servicing railroad equipment. The AAR urges that this, after all, is the only relevant test of "worth" for an operating rule: Does

it work, i.e., does it result in safe operating practices? No one could look at the accident data relating to blue flagging and seriously argue that it does not work.

The AAR Standard Code of Operating Rules was designed, and continues, to be a composite of operating guidelines upon which a working set of operating rules may be based. The dynamic development of the Standard Code since its original endorsement in July, 1889; the paralleling development of the individual rule books of AAR's more than 150 member railroads and the industry safety record throughout all of the intervening years proves beyond a shadow of a doubt that uniformity of language is far less important than specific rules tailored to specific conditions.

Rule 26: The Specifics

Railroad operating rules are taught to the affected employees of each carrier in a manner best adapted to that particular carrier's circumstances. Absent a showing that there is a particular problem on a particular property, attempts to "strengthen" or "clarify" a rule may prove detrimental to safety. Consistency of teaching and application on each railroad are far more important than "clarification" between railroads.

The measures required to protect employees working on equipment in a hump yard vary and depend on such factors as the means - physical and electronic - available to take a track out of service, the quantity of equipment servicing work done on hump yard

tracks and the degree of "remoteness" between the hump tower and the affected track. The genius of the blue flag rule is that it allows workmen to directly enhance their safety by displaying the signal when they start, and by removing it when they finish, their equipment servicing duties. When this "direct" control becomes more remote, as for instance when hump yard switches are electronically locked out on a tower control panel some distance away, more formality may have to be built in the system of protection. The degree of this formality and whether or not it demands "written records of the protective measures taken" is best worked out by individual carriers and, perhaps, for individual facilities. It may well be, for example, that physical protection - e.g., wooden blocks inserted to immobilize the movable rails of a switch - may be used to supplement control panel protection so effectively that radio transmission between the tower and the ground will provide the necessary degree of safety. As now written, Rule 26 allows the flexibility essential to meet whatever unique situations may arise on an individual railroad.

Blue flag safety does not, in the larger sense, have to do with whether or not a hump yard is involved, nor does it have to do with whether or not "initial terminal and other train air brake tests" are being performed; it has to do with whether or not workmen are going to be under, on, in or between cars or locomotives and whether or not they would be placed in a position of jeopardy

if the cars or locomotives were coupled to or moved. The air brake test situation provides the final illustrative example: if those performing such a test go under, on, in or between the cars, then they can protect themselves by displaying the blue flag. If, before they start down the train to make the inspection, the workmen have reason to believe that they may need blue flag protection, then prudence and common sense would suggest that they hang the flag "early" rather than re-walk part of the consist. The blue flag rule allows railroad employees to control their own protection and, as long as that concept remains paramount, Rule 26 will continue to be observed and respected.

Conclusion

The members of the Association of American Railroads welcome this opportunity to comment on Standard Code Rule 26. As with other such operating rules, they urge the Federal Railroad Administration not to attempt to adopt uniform standard Federal operating requirements but to leave the specific implementation of minimum guidelines to the individual carriers and their employees. In this way, the peculiar circumstances of individual operating conditions and requirements can be met in the dynamic real-world context in which

they occur rather than in the static atmosphere of words printed
on paper pages.

Respectfully submitted,

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Association of American Railroads

American Railroads Building
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March 15, 1974

H. H. HALL
EXHIBIT D

Before the
Department of Transportation

Federal Railroad Administration

Notice of Proposed Rulemaking:)	
)	
Protection of Railroad Employees)	Docket No. RSOR-3
While Inspecting, Repairing or)	Notice 2
·Servicing Railroad Equipment)	
)	

Comments of
The Association of American Railroads

The interest of the members of the Association of American Railroads on this topic is amply of record. Blue flag rules have a long history in railroading and that history includes an excellent safety record.

Since its incorporation into the rules in 1887, the blue flag, when displayed at the end of a car (or of a cut of cars) means, in the original language, "... that car inspectors are at work under or about the car or train" The words "under or about" the car are almost universally taken to mean "under, on, in or between".

What is of real importance, and what makes the blue flag rule such a good one, is that all railroad men understand that its display means a fellow worker is in a position to be injured if the marked equipment is moved. "About" thus does not mean "alongside" (as in seal checking or ACI label washing) but it does mean something close to "fouling" as in brake shoe replacement.

The blue flag is not magic, and its universal and consistent application whenever workers go under cars would certainly cause operational delays and would just as certainly not always enhance employee safety. In the case of certain repair facilities, for instance, cars are moved only by mechanical pullers under the direct control of those repairing the cars and, thus, blue flags are not necessary. FRA recognizes another example in the proposed §221.25 and §221.27(a) provisions for "locking out" remotely controlled switches without actually placing blue flags. Other examples of the difficulties inherent in attempting to promulgate a universal rule applicable to an infinite variety of situations will appear in the following comments on individual sections of the proposal.

Definitions -- §221.5(a) seems to imply that flagging would be required for initial terminal brake tests. As a cautionary comment it should be noted the AAR's members intend to flag or not depending upon the position of the workers in relation to the cars and not upon the particular tasks being performed. In §221.5(b), the definition of "Rolling equipment" should be amended to exclude track

motor cars and maintenance of way equipment.

The §221.5(d) intended meaning of "blue signal" should be changed to allow a flag or a light by day and a light by night, thus, "Blue signal means a blue flag or light during the day and a blue light by night." This change would not only be consistent with the Standard Code, it would give carriers the option of installing remotely controlled blue signals at certain locations (such as in proximity to remotely controlled switches) as the needs of efficiency require.

Workmen on a track other than a hump-yard track -- At the outset, it must be recognized that "a track other than a hump-yard track" in §221.23(a) cannot be taken to include a track on which post-derailment cleanup operations are taking place. Other forms of protection are more appropriate for such situations than blue flagging and, if FRA chooses not to amend the words of the proposal, it should so interpret them to exclude a crew picking up rolling equipment after a wreck.

Additionally, FRA should consider allowing work without "actual" flagging where the commensurate degree of protection is afforded through a process of taking the track out of service, as is done when track maintenance operations are performed. With direct communications between the working crews and a single individual who has authority over all track entrances and exits, "constructive" flag protection can be established without the use of a blue device.

Obviously, such protection can only be considered effective in particular instances, but where established, the practice of removing a track from service can provide fully sufficient protection, and may, by eliminating those instances where the blue flag is inadvertently left in place after the work is completed, actually be safer.

Subpart (b) of §221.23 should be amended to accommodate those railroads where the blue flag is traditionally placed on the track ahead of the locomotive (and in plain view) rather than hung from the control compartment window. This subpart should also be changed to make it clearly inapplicable where a locomotive, or a consist of locomotives, is receiving sand, fuel or other servicing attention or where locomotives are being coupled to form a power consist (with workers connecting the various control cables between units) and where there is, in each instance, the same type of clear understanding between the engineer and the servicing employee as there is between the engineer and the train crew out on the line of road.

The provisions of §221.25(a)(1) and (2) are considered by some railroads to be redundant. Either the switches should be lined against movement to the affected track, or the blue flag should be displayed, but not, they believe, both. To require both is, in some ways, to relegate the blue flag to a "back-up" job and, thus, to diminish its impact.

Remotely-controlled switches -- Section 221.27 is obviously written to apply to remotely-controlled switches in yards and terminal areas, where the turn-outs are usually visible from the controlling

tower. Where a carrier has installed remotely-controlled switches in other areas, however, the requirements of this section become less practical and there should be a provision for alternate methods of protection such as mechanically locking the switch at the field location against movement into the track requiring protection. An alternative of this nature will be of more practical benefit (and thus more likely to be used and thus safer) than requiring that a communications link be established between a geographically remote switch location and the "console operator" of that switch and particularly so when the protection is only required for a short duration.

The written record requirements proposed in §221.27(c) are unduly burdensome and unnecessary to accomplish the desired ends. While it is a widely held belief (albeit probably impossible to prove) that the production of a written record has a positive safety benefit in terms of memory retention and operational clarity, the same cannot be said for the retention of that record beyond the period when the protection is required. FRA's rules should be flexible enough to allow for other means of notification which do not require the physical writing of a notice and AAR suggests that any written record which must be produced be only retained, assuming a safe operation, until the completion of the operator's tour of duty or the cessation of the need for protection, whichever occurs later. Obviously, if an accident involving the protected track occurs, the

record should be retained until the completion of the investigation or as otherwise directed by the head of the local FRA regional office. As an option, the railroad industry would not object to a short-term record retention requirement at those locations where FRA may desire to conduct safety checks and investigations -- such "spot" retentions would not create the storage bothers of an industrywide filing of records, the vast majority of which will never be seen by other than the employee making them.

Conclusion

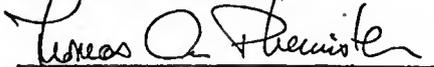
In all due candor, AAR's member railroads are less than enthusiastic about the rules proposed in this docket. All of them have in force on their properties either Standard Code Rule 26 or another wording of the provisions of Rule 26. All of them believe that Rule 26 has stood the test of time.

The central feature about Rule 26, and it is a feature FRA has failed to capture, is that the blue flag rule depends for its observation on the very people it is designed to protect. If it is true that "existing rules are not observed and enforced" the fault logically lies with the workers who should have displayed the flag and who should have respected its placement. If those going in harm's way around railroad cars won't hang the flag, well, even the might and majesty of the Code of Federal Regulations won't protect fools from their own folly.

FRA has taken a rule whose basis is the provision of protection for those most in need of it and turned it into another means of fining a corporation and draining the budgets of those departments in which the money could actually be spent to buy additional safety. (One \$250 fine could have bought 10 new crossties.) If that is a move towards safety it is safety as seen through Alice's looking glass.

American railroad blue flagging has not yet reached perfection -- far from it on the part of both labor and management -- but there is the nagging feeling about rules such as those here proposed that an educational effort might have borne more fruit and that the best that can be said is, "Oh, well, this won't mess up operations too much."

Respectfully submitted



Thomas A. Phemister
Thomas A. Phemister
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September 5, 1975

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H. H. HALL
EXHIBIT E

Before the
Department of Transportation

Federal Railroad Administration

Notice of Proposed Rulemaking:)	
)	Docket No. PC-1
Passenger Train Visibility)	Notice 1

Comments of
THE ASSOCIATION OF AMERICAN RAILROADS

General Statement

Following the tragic commuter train accident in Chicago on October 30, 1972,* the Federal Railroad Administration (FRA) has

* By way of perspective, without in any way attempting to diminish the effect on the families and friends of those lost, the death toll in this accident was much lower than that in the DC-9 crash in Boston which killed, among others, Interstate Commerce Commissioner Chester Wiggin.

proposed a rule designed to "brighten-up" the rear ends of passenger trains. The proposal would require a combination of three Day-glo orange panels AND four "retroreflectors" AND a pair of one-flash-per-second, 4000 candela white strobe lights. No mention is made of Standard Code Rule 19, originally adopted in 1899, which currently requires marker units to be "displayed on rear of every train," hence, the new attachments and devices would be in addition to what are now carried as markers.

Position of the AAR

The Association of American Railroads (AAR) is opposed to all of the suggested requirements in this docket. The PC-1 proposal would be a detriment to safe train operation, would impose a cost burden calculated to be as high as \$3,146 per car (well above the Transportation Systems Center estimate of \$400) and would not have prevented the very accident which gave rise to this rulemaking.

The AAR is a voluntary, unincorporated, nonprofit organization composed of member railroad companies operating in the United States, Canada, and Mexico. These railroad companies operate about 97 percent of the total mileage and generate approximately 97 percent of the total operating revenues of all railroads in the United States. The activities of the AAR cover a wide range, having to do with such matters as research, operations, car service, safety, statistics, law, and federal legislation and regulation, insofar as those matters require joint handling in the interest of safe, adequate and efficient

railroad service to the public.

The AAR is the joint representative and agent of these railroads in connection with federal regulatory matters of common concern to the industry as a whole. It has an interest in significant interpretations of federal legislation that will apply generally to all of its members. The issues raised in the present case are of vital importance to the entire railroad industry.

Explanation

The opposition of the AAR can be explained, and understood, on two distinct levels: first, the idea of establishing a "back-up or secondary aid" to "existing signal systems and operating rules" is counter-productive and, second, the particular hardware chosen to implement the Administration's theory is unsafe, overly expensive and unnecessarily duplicative.

Point One: The Theory

Because even FRA admits that reliance, primary and first order reliance, must continue to be placed on rules and signals, it follows that nothing should hamper the engineman's concentration on their observation. Signals must be viewed in an unconfusing and undistracting environment and rules observation must be undiminished by even a fleeting choice of whether to obey the code or a flashing light off in the distance. There are two components to this line of reasoning - one is that signals must be adhered to and the other is that nothing should dilute the message which signals are designed to convey.

An example of the need for signal adherence is found in the experience of the Chicago South Shore and South Bend Railroad. The CSS&SB is the last of the electric interurbans still providing the service for which it was originally designed and constructed; it operates over 90 miles of line connecting South Bend, Indiana, with Chicago, Illinois. The last passenger train rear end collision on the CSS&SB happened, according to Elden E. Lidke, Superintendent, Transportation Department, on March 4, 1952. This accident involved two passenger trains, one of which was to pass the second at a passenger station siding. At the approach to the station, a switch was normally thrown to divert the following train to an adjacent track. On the day in question, the switch attendant failed to make the throw and the engineer of the second train, relying on past experience, disregarded the block signal and crashed into the stopped train. No display of lights or panels would have prevented this accident - the engineer of the second train "knew" that the block was red because the train ahead of him was stopped at the station and he "knew" that the switch was "always" thrown to divert his train.

Signal dilution, that is, the division of responsibility between trackside and train mounted "signals" would cause enough confusion if all the engineer had to worry about was the rear end of a passenger train ahead of him on the same track, but the real world of railroading today is not that simple. He must also be on the alert for track obstructions, misaligned switches, landslides, broken rails, derailed equipment fouling adjacent tracks, cars on a siding out-foul of the main track, shifted lading and so on.

The diluting effect of devices introduced to "back-up" the signal system is shown in the following example from H. H. Hall, Vice-President-Transportation, Southern Railway System: "We found such an impact [reliance on the back-up instead of the primary system] in connection with operations in automatic train stop territory, before the automatic train stop system was removed from our railroad. Engineers tended to place a psychological reliance on the automatic train stop and routine acknowledgement of it instead of keeping alert to the wayside signals. An engineer would encounter a restrictive signal aspect, simply activate the automatic train stop acknowledger on the locomotive, and otherwise not obey the signal. Sometimes a tragic accident would result. An example is a rear-end collision on Southern at Winfield, Tennessee, on September 23, 1966."

The back-up system of devices proposed in this proceeding is worse than reliance on a thrown switch, as in the CSS&SB example, or routine activation of a train stop scknowledger; as happened on Southern, because those two instances represent essentially passive hazards - because reliance was divided between safety system A and safety system B, system A was ignored when it should have been heeded. In contrast, the system now proposed represents an active hazard. Because its net effect is so eye-grabbing, the PC-1 system can actually prevent reliance on the primary system. Where trains are running on short headway, the effect of the strobe lights can be to drown out the wayside signals: this is the result of a test conducted by Southern Pacific Lines and is evident when viewing the TSC film

"Enhancement of Train Conspicuity - Observations of a Three-Element Approach, February 23, 1973." Further testimony will be offered at the oral hearing and the point will be more fully explained below, but the results of the SP test program show that the proposed system, especially as it would require flashing lights, presents a hazard to both following trains and to motorists on parallel highways.

From a discussion of the theory behind the proposal, these comments will now turn to an exploration of the hardware itself.

Point Two: The Hardware

Following feasibility studies by several of the members of the AAR, the consensus was reached that the special equipment required by this proposal could not safely be made portable: the lower panels are too large to handle and the top band and lights are so far above the track - even on single level passenger equipment - that a ladder would be required to effect installation. None of the members who examined the proposal in detail were willing to assume the risk of placing men on ladders in stations or passenger equipment yards to handle the upper devices. This, in addition to the fact that not all passenger equipment is the same, means that a permanent, individualized installation would be required on each car to be equipped.

With permanent installation mandated, another set of problems appears. Especially in Amtrak and commuter service, but almost universally, passenger equipment does not stay in fixed trains. On any given day, a particular car may be the last one on the train - and it may be coupled either end hindmost. If interchangeability is to

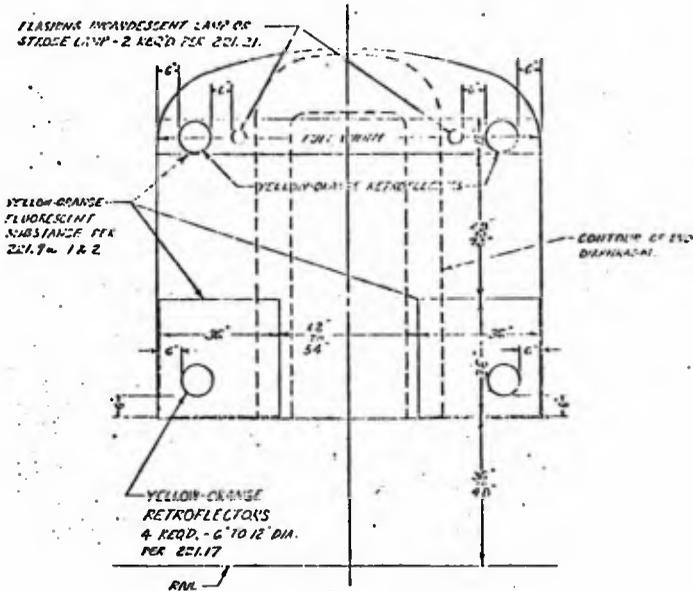
be preserved, and it is as vital to passenger operations as it is to freight, both ends of all cars must thus be outfitted with panels and retroreflectors and lights. This means greatly increased installation and maintenance costs and, especially with the lighting equipment, greatly increased exposure to theft and vandalism. (Like it or not, the strobe flasher light has become a "fixture" of today's rock-band equipment.)

On the subject of costs, the TSC estimate of \$400 for parts and labor is entirely inadequate. The calculations of AAR's member roads average more than \$2,000 per car and one railroad which actually installed the equipment on a test basis figures the expenditure at between \$2,505 and \$3,146 per car, depending on car type. Whether or not these costs can be absorbed by Amtrak, by the mass transit carriers and by the carriers still operating independent passenger services without a rate increase remains to be seen. Also unknown at this time is the effect any such rate increase would have on passenger volumes and the resulting environmental impact if rail passengers were economically forced into alternate means of travel. What is demonstrable is the certainty that PC-1, if adopted in its present form, would impose on the rail industry a cost that cannot be justified in terms of increased safety.

FRA has made no provision in the proposal rules for the operation of mixed trains with the freight equipment on the rear. In such operations, no caboose is carried and thus there is no electrical connection to power flashing lamps. While the Federal

Register preamble mentions the possibility of battery operated lights, the §221.23(b) requirement that they flash in unison effectively eliminates storage batteries as a power source.

The Panels The sketch below, showing installation of the proposed rear protection equipment on a "typical" car, demonstrates that the lower orange panels cannot be 36" wide without fouling the



diaphragm striker plates and that, similarly, the upper band cannot extend the full width of the car while remaining free of the diaphragm assembly. Because of the rubbing action between coupled cars, any attempt to paint the striker plate to achieve the full

required width is doomed to frustration, failure and an inordinately high cost for maintenance.

Because, as discussed above, the orange panels will have to be permanently mounted, they will be subject to deterioration from rocks and dirt picked up during normal operations and to fading from the strong cleaners required in car washing racks. The specifications for reflectance will mean that passenger operators must purchase expensive testing equipment and that the panels will require repainting far more frequently than the car's maintenance schedule would otherwise dictate. As if this were not trouble enough, winter operations, with the resultant rear end build-up of ice and snow, may well mean that a train will leave its origination in full compliance and end its run in technical violation of the rules. At this time, it is not possible to calculate the increase in costs to be incurred due to decreased car availability caused by added requirements for inspection and maintenance.

Many of AAR's member roads use business cars for track inspection. When these cars have open railings around the rear platform, it is possible to sit inside the car and still view the track almost directly behind the train. The PC-1 panels would eliminate this usage, again, at an incalculable cost.

The Retroreflectors These items are apparently specified as either night-time equivalents for the orange panels or as a back-up system for the flashing lights (which are themselves a back-up system for rules and signals). If, as tests show, the flashing lights

"drown out" wayside signals, then certainly they will obliterate whatever effect the retroreflectors would otherwise have. And, as with the panels, the retroflective attachments will result in increased maintenance and inspection costs. When compared to the day and night results achievable from bright Scotchlite (or equivalent) material, the combined panel/retroflective system is seen as needless duplication.

Reflective substances work by bouncing back light from a remote source - in railroading, from the locomotive headlight. Naturally, the brighter the light, the greater the illuminating "bounce back." Rule 17 in both the Standard and the Uniform Codes requires dimming of the locomotive headlight when meeting or passing trains and, as a result, the source of reflective illuminating power is required to be reduced at the very point when, in the theory expounded by this rulemaking, it is needed most.

The Lamps The flashing lights have proven themselves, in operational tests, to be a definite hazard. They are so bright that they mask trackside signal indications: in a Southern Pacific test run, the lights resulted in missed signal calling by two of the four men in a locomotive following a PC-1 equipped commute car. The insistent flashing of the lights has been described by test observers as "hypnotic" and caused these observers to "have spots before their eyes" for several minutes after the exercise was completed. As oral testimony will relate, the bright flashing is disturbing to motorists and could cause either failure to heed a road sign or failure to

see another car or an obstruction on the highway. Because truck drivers sit farther from the road than car drivers, and are consequently more in line with the §221.21 lamps, it is believed that they would be even more adversely affected.

As the distance from the flashing lights increases, they tend to blend visually into one ball of light and appear, at a distance of a mile or more, to be the oscillating headlight of an oncoming locomotive. This points up one of the major deficiencies of the lights. Throughout the history of modern transportation, white lights have been displayed to the front and colored - usually red - to the rear. The shift proposed by this rule would alter patterns of thought and action the results of which could only be determined by further testing. In the absence of any proof of need for the systems as accident preventers, AAR submits that the risks involved in such testing make continuance unwarranted. The bad effects of the brightly flashing white lights were so strongly felt during the Southern Pacific tests that switch crews in the vicinity of the test train ceased operations until the train had left the area.

Summary and Conclusion

The Federal Railroad Administration states that its duty is "to seek more effective means of preventing the loss of life and property damage which results from rear-end train collisions." More effective than what? Than operating rules observance and adherence

to signal restrictions? The history of railroading shows that there is no more effective safety "system" than the engineer who obeys the rules and the signals and the history of railroad accidents shows that these safety "systems" are far more than merely good, they are excellent. America's railroads have developed the equipment, both on-track and track-side, and trained the personnel to achieve a safety record of which they are justifiably proud. The introduction of the proposed set of panels and retroreflectors and lights will not help to better that record - there is, in fact, every indication that it will detract from it.

These comments began, as did this rules proposal, with that terrible October morning in Chicago. Making mandatory the triple aspect warning which is now proposed will have no greater effect in preventing that accident than it will in preventing one tomorrow.

The members of the Association of American Railroads urge that this proceeding be discontinued.

Respectfully submitted,

Thomas A. Phemister
Assistant General Attorney
Association of American Railroads

American Railroads Building
1920 L Street, N.W.
Washington, D.C. 20036

September 28, 1973

ASSOCIATION OF

AMERICAN RAILROADS

LAW DEPARTMENT

AMERICAN RAILROADS BUILDING · WASHINGTON, D. C. 20036 · 202/293-4089

 202-372.
 H. H. HALL ✓
 EXHIBIT F

 THOMAS A. PHEMISTER
 Assistant General Counsel

February 21, 1975

 Mr. Donald W. Bennett
 Chief Counsel
 Federal Railroad Administration
 400 Seventh Street, S. W.
 Washington, D. C. 20590

 Re: PC-1
 Passenger Train Viability
 Medical Aspects of Flashing
Lights

Dear Mr. Bennett:

At the oral hearing in this docket some time ago, AAR undertook to seek out and provide scientific information from a medical viewpoint on the effects of flashing lights mounted on the rear of passenger trains. The results of that search are now ready for submission.

Because this information is contained in a number of articles from medical and technical publications, I have taken the liberty of submitting only one copy of each such article for the record. However, in transmitting this information to AAR, Max D. Rogers, M. D., Chief Surgeon, Southern Railway System, commented as follows:

As I have stated to you before, I feel that the presence of strobes on the rear end of a train will certainly cause certain disturbing visual effects. Of great importance is the rapidity of the strobe as has been stated in Bartley's article, "Rapidly intermittent illumination may be seen as continuous," implying that if the strobe were rapid enough, it no longer would be a strobe but would be a continuous light. The presence of a high-power continuous light would certainly obscure wayside markers or bridge signals, to my way of thinking.

In addition to this, if the strobe were not rapid enough to appear as a continuous light source, we then have to deal with the problem of retinal afterimage. This is pointed out in Bartley and Wilkinson's article and also in the article by Bartley and Miller. This is set forth on page 1 where it says "Subjectively, the effect of a high-luminance flash is to produce an afterimage the size and shape of the flash field, which is perceived as a bright area if the observer looks at a normally illuminated or dark surface. In regard to this, let us suppose that an observer, such as an Engineer, does not have perfect color vision. If he were then to be exposed to a high-luminance strobe light, which, of course, would probably be white, his afterimage on even the second or third flash might well not appear as a white light, but could be seen either as a red or a green, depending upon whether he was a protan or a deutan color deficient. It is my feeling that he could be color deficient safe, but if exposed to a high-intensive strobe, he could see either compliments of red or green when exposed to the white light.

I have also submitted a photocopy of one of the pages from the article by Frye and Alpern where they have shown that the effect of flashes of light on night visual acuity impairs the ability of the retina to respond to subsequent flashes of light.

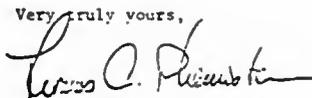
In Gerathewohl and Taylor's report studying the effect of intermittent light on vision, they stated on page 6 that intermittent flashes of light definitely lower the visual acuity. This is also born out in a separate article by Gerathewohl on the conspicuity of flashing light signals where he shows that there is a definite relationship between the rate of a flashing light and visual acuity.

I believe it is proper to summarize the findings of Dr. Rogers and the authors he cites by saying that they support the argument that flashing lights are detrimental to safety. No device should be attached to the rear of a train which would lead to retinal fatigue, vision impairing after-images and potential color confusion.

We have all learned since infancy that red means stop or danger and thus the proposal in Docket PC-1, by substituting a white light for warning, also creates a psychological danger to safe rail-roading.

Your attention to this evidence is appreciated.

Very truly yours,



H. H. HALL
EXHIBIT G

Before the
Department of Transportation

Federal Railroad Administration

Petition for rulemaking:)
)
 Freight Train Markers)
)
)

Docket No. 74-5

Comments of
The Association of American Railroads

These comments are filed in response to an advance notice of proposed rulemaking, published February 28, 1975, by FRA in response to a petition on the same subject filed by the United Transportation Union. UTU requested rulemaking to "require highly visible markers to be placed on the rear end of freight trains" and that, to achieve nighttime visibility, the markers would have to be lighted during hours of darkness.

The Association of American Railroads is a voluntary, unincorporated, non-profit association whose member railroads operate almost all of the nation's rail track mileage and earn more than 95 percent of the total railroad operating revenues. For its members,

AAR acts as agent in the handling of matters of common concern to the industry as a whole in their continuing efforts to provide better railroad transportation service to the public. This proceeding, dealing with the marking of the rear ends of freight trains, is such a matter.

Markers: Safety device or "signature"?

The Standard Code of Operating Rules of the AAR (and, in similar fashion, other standard railroad rule books) defines a train as, "An engine or more than one engine coupled, with or without cars, displaying markers. Standard Code Rule 19 then specifies what "signals" are to be "displayed to the rear of every train, as markers, to indicate the rear of the train. . . ."

Since the 19th Century, then, "markers" have been intended for the sole purpose of denoting the end of the train. Railroad employees are trained to observe each passing train for defects and, if a train goes by without its markers, it can be assumed that the train is not complete, that is, that one or more cars have been left behind and that, consequently, the track over which the observed train has just passed is still occupied.

Markers are thus the "signature" at the end of the train; they are not intended to prevent rear end collisions. The railroad industry has developed an extensive system of signals, automatic blocks, timetable schedules and train order procedures to run trains smoothly and efficiently and to keep them from running into each other.

AAR's comments in Docket PC-1, Passenger Train Visibility, dealt with a similar point; there it was argued:

Signals must be viewed in an unconfusing and undistracting environment and rules observation must be undiminished by even a fleeting choice of whether to obey the code or a flashing light off in the distance. There are two components to this line of reasoning - one is that signals must be adhered to and the other is that nothing should dilute the message which signals are designed to convey.

. . . .

Signal dilution, that is, the division of responsibility between trackside and train mounted "signals" would cause enough confusion if all the engineer had to worry about was the rear end of a passenger train ahead of him on the same track, but the real world of railroading today is not that simple. He must also be on the alert for track obstructions, misaligned switches, landslides, broken rails, derailed equipment fouling adjacent tracks, cars on a siding out-foul of the main track, shifted lading and so on.

These excerpts are part of comments filed September 28, 1973 and, together with medical evidence submitted in the passenger train visibility proceeding on February 21, 1975; the whole of AAR's presentation in Docket PC-1 is hereby incorporated by reference.

Rear-end markers do, of course, carry some safety advantages in addition to their already noted role as the train's "signature". On some railroads, changing the color of the rear marker will tell an oncoming engineer whether or not the train ahead occupies the main line or a siding. On others, when the use of reflectorized discs or plaques is common, the engineer of a following train knows he is

very close if his headlight illuminates the reflective surface and this may be quite beneficial in manual block territory. But these benefits are, and must remain, in the nature of bonuses. AAR Standard Code Rule 19 never intended markers to perform a function other than indicating the rear of a train. From the standpoint of rail safety, the prevention of rear-end collisions must not depend upon being able to see the rear end of the preceding train because, if that were to become the standard, all safety would vanish as soon as the train rounded a curve and was lost from sight.

Responses to FRA's Specific Requests for Advice

A significant sample of AAR's membership responded to the request to answer each of the Administration's four questions and what follows is a distillation of those responses:

(1) For purposes of this notice, the term "train" means "one or more freight locomotives units coupled, with or without freight cars" and the term "freight cars" includes cabooses. Should the regulation apply to trains only or should it also apply to cabooses which are not part of a train but are occupied by one or more railroad employees?

The general tone of the response to this item was dismay over the attempt to re-define "train." Since before the start of this century, a "train" has had "markers" and "markers" have only been placed on "trains." FRA's re-definition of terms could play hob with switching agreements and with the costs of performing switching services. The very act of making and breaking trains would, in FRA's proposed terms, create numerous mini-trains. Would markers be required on every cut of cars under tow by an engine? Even hump yard trimming movements?

AAR's member railroads do not believe that such an absurdity was intended by FRA and they firmly believe that it would not increase rail safety. Rule 19, quoted earlier, limits markers to trains as defined in the code books and the retention of that definition is fully supported.

The caboose question is somewhat more difficult. If it is not part of a train, then Rule 19 markers could not be placed on it. But several railroads responded that standing cabooses are either unoccupied or, if being worked on, they are protected by blue flags or switch locks. These two alternatives certainly fulfill the intentions implicit in FRA's proposed goals and the history of experience proves that they are worthy and valuable safety practices stemming from present rule book requirements. No situations have been presented which would compel a change in present practice, but it is within the discretion of FRA to refer the problem to the Railroad Operating Rules Advisory Committee.

(2) What marking devices are now in use on railroads? What other devices such as strobe lights are available? What are their relative costs, effectivenesses and serviceability? Which device or combination of marking devices should be required generally?

The last part of this multiple inquiry is the easiest to answer: Rule 19, or its amended version adopted by a particular carrier, sets forth the devices which are now generally required and which should continue to be required.

The specific devices now in use range from reflective discs or plaques to battery or generator/battery powered electric lights. Costs range from less than \$20 per car set for reflectors to in excess of \$10,000 per car for supplying and installing generator/battery electric systems on cabooses built without that equipment. Some railroads expressed the fear that additional lighting requirements would over-drain caboose battery systems and those who had experimented with rotating beacons and strobe lights found them to be expensive to install and very expensive to maintain.

All railroads commenting on the point mentioned that electric lighting systems on cabooses were not fail-safe and one carrier specifically argued that markers -- to serve their original function -- did not have to be particularly bright at all. One major western carrier stated that, in reviewing its 1974 accidents, "it was found that there were no rear end collisions which occurred where the presence or absence of a marker would in any way contribute to or prevent the accidents. The reasons for the accidents were either a failure of the engineer and other crew members present on engine of following train to observe the aspect of block signals and to operate their train in compliance with applicable signal rules, or a failure of the engineer or other employee controlling movement to move with caution."

(3) What, if any, marking devices should be required where rear end protection is provided by an automatic block signal, cab signal, train stop, or speed control system?

Most of the railroads responding said virtually the same thing: Markers are not intended to provide rear end protection and we use the same devices in signal territory as in non-signal territory.

(4) What, if any, markers should be required when the last car in a train is not a caboose?

Railroad operating rule books require markers on the last car of a train regardless of the type of car. Obviously, unless the last piece of equipment is an engine or a car with generating capacity, electric lights are not feasible. Battery pack lights, somewhat on the order of the large yellow lights seen on street barricades, have been the subject of experimentation, but the problems of reliability, vandalism and maintaining a supply of battery power cells have led most railroads to conclude that reflectors or red flags are a better solution when electric power is not available.

Conclusion and Recommendations

Petitioners have misconstrued the purpose of markers; they have never been intended to protect the rear of a train but only to indicate it. There is no doubt that markers are not in themselves unsafe as are strobe lights (see AAR and BLE presentations in Docket PC-1), but if they are allowed to become substitutes for present train protection rules and systems, they will bring about a decrease

in safety.

In the absence of any proof that markers have ever prevented an accident, AAR recommends that the Federal Railroad Administration not alter the flexibility allowed the railroads under the various versions of Standard Code Rule 19.

Respectfully submitted,



Thomas A. Phemister
Assistant General Counsel

April 15, 1975

Association of American Railroads
1920 L Street, N.W.
Washington, D.C. 20036

Mr. ROONEY. Thank you very much, Mr. Hall.

I had the pleasure of touring the Southern facilities, and I certainly agree with you, of all the railroads I have seen in the eastern part of the United States, the Southern certainly has to rank one of the finest in the country.

Mr. HALL. Thank you.

Mr. ROONEY. I commend your management and your very fine Southern Railway Co.

Naturally, you oppose increasing the penalties, especially, as you pointed out, the minimal penalties for technical violations.

You also point out that you have a good compliance record. I was wondering whether or not you would support an increase in the maximum penalty as a useful tool for the FRA to crack down on railroads with a very poor compliance record.

Mr. HALL. I wouldn't necessarily support a maximum penalty increase. I think the FRA has the tools at hand now to crack down on the most serious violations and on those particular railroads where some of the more serious violations are concerned, both those involving personal injuries and accidents.

Mr. ROONEY. I notice in your statement you also oppose section 4 of H.R. 11804, requiring the location of crew quarters away from the switchyards or humpyards. Yesterday the National Transportation Safety Board supported that provision and cited a Decatur, Ill., incident in which seven employees were killed, fleeing a bunkhouse in the yard where hazardous materials in tank cars exploded while being switched.

Don't you think that with all of the hazardous materials being hauled these days, it might be better to keep sleeping quarters for crews out of areas like that?

Mr. HALL. I think you would have to consider Decatur a very isolated case, although it was very serious, I agree. There is no guarantee that moving crew sleeping quarters to a location isolated from the yard location would insure their safety.

We had a dormitory in Chattanooga, Tenn., that was in bad condition. We are in the process of constructing another one there now. As a temporary measure we moved those crews downtown to one of the better hotels, and an explosion occurred in the same block the hotel was in. So crew members could have been more injured downtown than out at the dormitory, as an example.

I think in my experience, at least on the Southern, I have never heard of an employee being injured in a dormitory. Decatur and maybe one other incident are the only ones that I have heard of throughout the country. When you look at Emergency Order No. 5 issued by the FRA as to how compressed gas and other class A explosives will be handled, I think that in itself pretty well eliminates the hazard insofar as dormitories are concerned.

Mr. ROONEY. Mr. Hall, you made a very impressive statement on the flagging rule. Tell me how this rule operates today on the Southern system.

Mr. HALL. The main difference between the rule as it exists today on the Southern and most other railroads is that we do not require flagging in automatic block signal territory, or centralized train

control territory. The proposed bill, H.R. 11804, would require flagging every where, even where signals provide protection.

Mr. ROONEY. Have you any areas of track where the rule applies, or do you have all automatic block?

Mr. HALL. No. We have many areas of track where the rule applies, and we do require full flagging under those conditions, but we do not require flagging in automatic block signal territory or in centralized traffic control.

Mr. ROONEY. How about the human element for the flag rules?

Mr. HALL. We have tried it both ways, Mr. Chairman. We had flagging in automatic block a good many years ago. To be perfectly frank about it, it is almost impossible to enforce the rule. You have a flagman who is responsible for flagging, but at the same time you have an engineer who is responsible for complying with signal indication. After an accident occurs, invariably the engineer says, "The flagman wasn't back far enough," and the flagman says, "If the engineer hadn't been running so fast, if he had been complying with the signal indication, I would have been back far enough." You can see it is impractical in that type of dual responsibility.

It became clearly obvious that the engineer had to comply with signal indication and if he did that, then he could control his train in such a manner that he would not strike the caboose if a train stopped ahead of him without flagging. When we put the responsibility solely on the engineer, it made it easier to enforce and it made for a much better operation.

I call your attention to the fact that a rear end collision is not the only thing that a signal protects. You can have a broken rail, you can have a washout, you can have a bridge that is gone that will give the engineer a restrictive indication and enable him to stop before he reaches that. In all those cases he is depending on a flagman up there, and in most cases, being human, he is just not as cautious as he normally would be.

Mr. ROONEY. I don't know whether or not you heard or read the statement of the National Transportation Safety Board Chairman, Mr. Todd, yesterday when he appeared before the committee.

Section 4 of H.R. 11804 would require sleeping quarters for train crews for uninterrupted sleep away from switching yards. According to Chairman Todd, this provision of H.R. 11804 has a safety effect as well as a comfortable effect, and the Board favors this provision.

Mr. HALL. The only thing I can comment is that we have made a good many studies of the noise levels in our present dormitories, most of which are located reasonably close to switching operations, and compared those with noise levels in hotels. We have made noise level tests with camp cars, maintenance-of-way equipment and trailers parked alongside the track. Our testing did not indicate an appreciable difference in a hotel downtown on a busy street corner as opposed to a dormitory in our yard.

Mr. ROONEY. Thank you very much, Mr. Hall, for testifying before the committee today.

You, also, will be subjected to more questions coming from my colleagues.

Mr. HALL. Thank you.

Mr. ROONEY. Our last witness today will be Mr. W. L. Thornton, president of the Florida East Coast Railway Co.

You may proceed, Mr. Thornton.

STATEMENT OF W. L. THORNTON, PRESIDENT, FLORIDA EAST COAST RAILWAY CO.

Mr. THORNTON. Thank you, Mr. Chairman.

My name is W. L. Thornton, I am president of the Florida East Coast Railway Co., with offices at One Malaga Street, St. Augustine, Fla. The FEC Railway is a class I rail carrier and although solely located within the State of Florida, it is an important part of the Nation's railroad system. We are vitally concerned with both the safe operation of the Nation's railroads and an efficient, economical and competitive rail system.

H.R. 11804 proposes various amendments to the Federal Railroad Safety Act of 1970 covering many facets of the existing law. I would, however, like to limit my remarks to those areas of the bill in which specific operating rules are proposed to be legislated.

Mr. Chairman, let me inject right here, I heard the statements of Mr. Lyon, Dr. Harris, and Mr. Hall concerning other aspects of this proposed legislation, and I would certainly concur in those areas, but I have elected to deal with just this one particular area because I feel it is so really damaging to safety that I would like to emphasize this one particular area of the proposed legislation.

In 1970 the Federal Railroad Safety Act authorized the Secretary of Transportation to prescribe appropriate Federal regulations for all areas of railroad safety and to conduct research, development, testing, evaluation, and training toward that end. The Secretary has been performing this task along with the Federal Railroad Administration, (FRA), and its Advisory Committee, which is composed for representatives of the FRA, the labor unions, railroad management, and the public. We believe that this is how safety regulations should be formulated.

Our concern is that Congress now proposes to preempt these procedures with respect to certain areas. We believe it is inappropriate for Congress to consider legislating specific operating rules. Every railroad has a set of operating rules that govern the operation of trains on their railroad. Generally these rules are patterned after the AAR Standard Code, but they are often altered to meet local conditions.

The operating rules are interrelated and one specific rule cannot be changed without possibly affecting other rules in the operating rule book. Consequently, whenever a rule change is to be considered, its effect upon all other rules must be considered in order to provide for a safe operation. It was for this purpose that section 431 of the Safety Act authorizes the Secretary of Transportation to promulgate rules and regulations for railroad safety and requires that these rules and regulations should not be promulgated until hearings were conducted to determine their full effect and to give opportunity for all affecting parties to be heard concerning the proposed rules and regulations.

It is through public hearings regarding proposed changes that all expert and technical recommendations may be considered before changes are made in operating rules. Consequently, the procedures established by the existing law should be followed rather than attempting to legislate individual rules changes, which we believe is impractical.

On the Florida East Coast Railway we have, through the use of electronic equipment such as centralized traffic control and automatic block systems, provided for the safest and most efficient operation of our trains. The results of this type operation have meant an outstanding safety performance on the Florida East Coast Railway. We have been recorded among the best in safety records in the industry over the past years, both in derailments involving physical damage to equipment and lading, and in personal injuries to our employees. We are extremely proud of the fact that we have come in either first or second in the annual E. H. Harriman Safety Award 7 out of the last 8 years.

Moreover, this technological progress has permitted us to operate our trains more safely and efficiently to the benefit of our employees and the public. For example, most of our trains are operated with two-man crews and are inspected en route by electronic surveillance equipment at approximately 20-mile intervals. This equipment consists of hotbox detectors, dragging equipment detectors, loose wheel detectors and shifted load detectors. The surveillance of the train by this equipment far surpasses the inspection of the train by manual means since the electronic equipment can detect problems not discernible by visual observation.

This automatic protection eliminates the need for a man at the rear of the train to look the train over for visual defects while en route and also obviates need for a caboose car. Elimination of the caboose and flagman at the rear of the train also eliminates the hazard of injury to a flagman from slack action or other causes. In lieu of a caboose car at the rear of the through freight trains, FEC has devised an electronic device which is inserted in the knuckle of the rear car and is coupled to the air line which, when the train is en route and the air pressure is normal, transmits a continuous radio signal to each hotbox location passed, which in turn activates a transmitter at the hotbox detector location transmitting a taped message to the engineer of the passing train which tells him that his train is intact and his air pressure is normal. In the absence of receipt of such transmitted message, the train is brought to a stop and an inspection made.

Mr. ROONEY. Are you sure this train has an engineer, Mr. Thornton?

Mr. THORNTON. Yes, sir, it has an engineer and conductor, but they are both on the head end.

Mr. ROONEY. You may proceed.

Mr. THORNTON. Because the FEC has been able to take advantage of technological innovations that permit a more efficient and safer operation, we are opposed to legislated rule changes that do not take into consideration the technological capabilities which are available today. For this reason we oppose section 6 of the bill which would require, among other things, the physical flagging of a train under any circumstances in which it might be overtaken by a following train with no

exclusions even in those territories which might provide protection to a train by means of automatic block signals, manual block systems, or centralized traffic control systems.

This proposed subsection deals specifically with Operating Rule 99 in the AAR Standard Code, and consequently, rule 99 of virtually every railroad in the Nation. FEC's rule 99 is the standard rule covering flagging protection, but contains the following exception:

Within signaled territory, protection against following trains or engines on the same track is not required except when running against the current of traffic. Within nonsignaled territory and when running against current of traffic within signaled territory, protection may be afforded under procedures established pursuant to rule 241 or by train order and in the absence thereof flag protection must be provided.

To require the added manual flagging of trains would accomplish nothing from the standpoint of added safety, but would drastically increase operating costs—up to 50 percent increase in crew cost—of the FEC since, as I indicated, the current complement of employees on through freight trains, and most local freight trains, operated on this property is two men, namely an engineer and a conductor. With the signal protection provided in the CTC and automatic block signal territories and the protection afforded in manual block territories, coupled with the electronic device previously described, a flagman at the rear of the train would provide no added protection nor could he in any way be justified on the theory that such a flagman would provide any safer form of operation. It would, however, increase costs to our customers.

To disregard the protection afforded train movements by such technological forms of protection by requiring other less safe forms is arbitrary and unreasonable and can only result in needless cost to the railroad industry. To continue to ignore modern labor saving innovations which can be instituted by the Nation's railroads in order to reduce costs and still provide operations as safe or safer than those contemplated by section 6 is to ignore the needs of the transportation system of this Nation and place an undue burden upon the public which must in the end pay for such labor costs in the form of higher transportation rates.

Recognition of the fact that Congress should not legislate specific rules such as subsection (g) dealing with flagging protection in territory protected by block signals is evidenced by the fact that Asaph H. Hall, chairman, Railroad Operating Rules Advisory Committee, on August 6, 1975, following several months of study of rule 99 by that committee, in which representatives of labor, management, the public, and the FRA participated, submitted a recommendation to the FRA as to modification of rule 99 providing the following provision:

"Flag protection against the following trains on the same track is not required when the rear of the train is protected by at least two block signals or an absolute block,¹ or is within interlocking limits; or a train order or special instruction specifies that flag protection is not required."

We are opposed to legislated rule changes that do not take into consideration the technological capabilities which are available to the

¹ An absolute block is a block in which no train is permitted to enter while it is occupied by another train.

industry today. Rather, Congress should be encouraging innovation in the rail industry that would not only improve safety, but would likewise increase productivity and minimize the cost to the public for transportation.

I urge this committee to eliminate from the proposed legislation any provisions wherein specific rule changes are legislated. Not to do so would create safety problems, increase the cost of operation, and eliminate any incentive for innovation and technological advances.

Thank you for permitting me to testify. I will be happy to respond to any questions.

Mr. ROONEY. Thank you, Mr. Thornton.

I certainly have heard a lot about the Florida East Coast Railway Co. and the very efficient operation you have. With all that sophisticated and expensive equipment I was wondering when you paid your last dividend?

Mr. THORNTON. We have been putting most of our money back into the property, Mr. Chairman. I am afraid we have one of these unbroken dividend records of not having paid a dividend. We have put our money back into the property. This has all accrued to the advantage of the equity of the stockholders, and also has improved the safety of our employees and the public that crosses over our road.

When we talk about cost, Mr. Hall brought out in his statement the enormous cost of some of these rules that might be legislated in. That money can be far better spent in improving the quality of the railroads. I am talking about track, where so many accidents occur, and about crossing protection.

On the FEC, for example, by being able to generate cash from our operations we have been able to protect 82 percent of our mail line crossings with some kind of automatic protection. This is accruing to the benefit of virtually millions of people that cross over our railroad every year. It is so important I think in the whole industry to be able to generate funds from operations so we can build into the physical property the safety of equipment, facilities, and track.

Mr. ROONEY. What unions are represented by your employees?

Mr. THORNTON. We have essentially all the national unions. I think the only one we do not have at the moment is the BLE, the Brotherhood of Locomotive Engineers. All the other crafts standard to the railroad industry represent our employees.

Mr. ROONEY. Are you familiar with the pending legislation proposing to transfer railway safety functions from DOT to the Department of Labor?

Mr. THORNTON. Very generally, Mr. Chairman.

Mr. ROONEY. What is your position on this?

Mr. THORNTON. I would be opposed to it. I feel that the best job can be done when you have either DOT or the FRA, who have expertise in the area of transportation, to have one body responsible for that rather than having a divided responsibility for this area.

It would be my personal recommendation that it be retained by the FRA and that they have jurisdiction over this.

Mr. ROONEY. Do you favor a 2-year funding proposal?

Mr. THORNTON. Mr. Chairman, I am really not qualified to say whether that is good or bad. I really haven't an opinion on whether that would be good or bad.

Mr. ROONEY. Mr. Hefner.

Mr. HEFNER. Thank you, Mr. Chairman.

I am sorry I am late. I have just one question.

How many of your employees are dues-paying members of the unions? Have you any idea?

Mr. THORNTON. No, sir. I don't know which ones belong to the union and which ones do not belong to the union. As I indicated earlier, the standard railroad unions represent our employees.

Mr. HEFNER. How many employees do you have?

Mr. THORNTON. Approximately 950.

Mr. HEFNER. You don't have any idea how many are union members?

Mr. THORNTON. No, sir; I don't. We really don't ask them whether they belong or don't belong.

Mr. ROONEY. I thought you told me in answer to my previous question that your company was represented by several unions.

Mr. THORNTON. Yes, sir. Perhaps I didn't make myself clear. For example, the UTU represents the trainmen and conductors. The clerks organization represents our clerks and operators. The machinists, electricians, and so forth, all of the standard operating railroad unions represent our class and craft in that particular area.

Mr. ROONEY. You have 950 employees?

Mr. THORNTON. Yes.

Mr. ROONEY. They are all not members of the railroad unions?

Mr. THORNTON. I don't know how many might be or might not be.

Mr. ROONEY. Are there any presently on strike?

Mr. THORNTON. Yes.

Mr. ROONEY. How many?

Mr. THORNTON. All of the trainmen.

Mr. ROONEY. How long have they been on strike?

Mr. THORNTON. They were off and on on strike for some time. The last time they went on strike was in 1967, and they are still on strike. Nine years.

Mr. ROONEY. That is a long drought.

Mr. HEFNER. Is that 950 employees that you have now in your work force now?

Mr. THORNTON. Yes. This is our total employment on the railroad.

Mr. HEFNER. You negotiated a contract but have no idea how many are union members?

Mr. THORNTON. No, sir. Under normal circumstances, Mr. Hefner, the other railroads have what you would call a union shop agreement in which they must belong to the union. In normal circumstances all employees are members of the union. On the FEC we don't have a union shop, so it is up to the individual's election to join or not to join. It is strictly up to the individual.

Mr. HEFNER. Thank you, Mr. Chairman.

I have no further questions.

Mr. ROONEY. Thank you, Mr. Thornton. I appreciate very much your being here today.

This will conclude our hearings until tomorrow at 2 o'clock in room 2218.

[Whereupon, at 3:37 p.m., the hearing was adjourned until 2 p.m., Thursday, February 26, 1976.]

FEDERAL RAILROAD SAFETY AUTHORIZATION ACT OF 1976

THURSDAY, FEBRUARY 26, 1976

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to notice, in room 2216, Rayburn House Office Building, Hon. Fred B. Rooney, chairman, presiding.

Mr. ROONEY. The subcommittee will come to order.

Today we will conclude 3 days of hearings on railroad safety.

Our first witness today will be Mr. Paul Reistrup, president of Amtrak.

You may proceed, Mr. Reistrup.

STATEMENT OF PAUL H. REISTRUP, PRESIDENT, NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)

Mr. REISTRUP. Mr. Chairman, members of the committee, we want to thank you for inviting Amtrak to testify again on railroad safety, a primary concern of nationwide, intercity rail passenger service, which is Amtrak's mission to provide. No consideration can come before safety in operating our railroad. In our rules of operation, safety first is a literal commandment.

I can safely report that in 1975, a passenger was still far safer on our trains than on the highways. No Amtrak passenger has died in an accident as a result of injuries sustained on our trains since March 1973. We hope and pray that we can continue this record.

We have updated our listing of Amtrak accidents since May 1, 1971, when Amtrak began operations, and have attached this list to my statement. We have also attached a summary of accidents by probable cause and a summary of damage costs by probable cause of accident.

Two key trends in safety are clearly shown by Amtrak's operating history: Track conditions on our Nation's rail system continue to deteriorate, and the interface between our rail system and our highway system is becoming a problem second only to track quality. I shall discuss each.

TRACK CONDITIONS

Bad track and deteriorating roadbeds are still Amtrak's No. 1 safety and efficiency problem. The number of all train accidents increased from 1974 to 1975 by about one-half percent, according to the Federal Railroad Administration's estimate. The FRA also confirms that track-related accidents still account for the greatest number and have been rising at a faster rate than the other categories. It is quite clear that the railroads continue to be deeply affected by their economic situation. It is also quite clear that our fate—in terms of track safety and efficiency—is tied to the railroads, because their track is our track.

Amtrak will not operate unsafe trains and will not operate over unsafe tracks. When track quality slowly deteriorates, trains can operate safely but must slow down. In a couple of situations we actually ceased operating over lines of railroad because the track deteriorated to the point that we could no longer operate.

Last year, slow orders—speed restrictions—imposed on railroads' track over which our trains are operated constituted 41.3 percent of all delays to Amtrak's trains. Delays caused by failures in the signal systems—an integral part of safe, efficient track operations—caused an additional 7.4 percent of all delays.

Since 1971, nearly 50 percent of all damages sustained by Amtrak trains in accidents were the result of bad track, and 45 percent of all track-related damages occurred in 1975. In dollars and cents, this means Amtrak sustained about \$2.2 million in track-caused equipment damages last year, and has sustained \$4.8 million in damages since 1971.

The impact of deteriorated track conditions goes to the very heart of our operations. Trains operating slower than highway speeds lose their marketability. Trains subject to schedule delay due to track problems also lose their marketability.

Slow but safe and reliability on-time trains are the base line for Amtrak's operation. Safe, reliable, on-time, but fast and comfortable trains, however, are the key to our market success. We must move our passengers comfortably at express train speeds over safe track and deliver them safely to their destination at the scheduled time. We would violate the letter and the spirit of the Rail Passenger Service Act if we were to settle for any lower standard.

There are three important methods now available to promote this standard: the first is our contract with the operating railroads, the second is the Interstate Commerce Commission's passenger track standards, and the last is the recently enacted Railroad Revitalization and Regulatory Reform Act of 1976.

The first method Amtrak has to promote safe track is our basic agreement with the railroads. Wherever Amtrak operates, our contract requires the railroad to maintain the tracks at the level of utility existing when we started operations on the line. Level of utility has been defined by the National Arbitration Panel and sustained in the U.S. district court to mean that the schedule must be met with a reasonable degree of regularity and a reasonable degree of passenger comfort. If a railroad fails to meet this standard of track and opera-

tional quality, Amtrak can insist on specific performance of our contract and the railroad must perform the rehabilitation work. As a schedule is improved by speeding up the train, the new schedule is also protected. In a sense, the creation of Amtrak has, in principle, frozen the track quality of much of the national railroad mainline system and prevented deterioration where the railroad is financially able to repair its tracks. The Penn Central situation falls into a unique category. The PC solution is more readily found in the new Northeast railroad legislation.

The second method for promoting improved safe track for Amtrak will be found with the ICC. In 1973, the Congress charged the Commission with developing minimum standards for adequacy of intercity rail passenger service. While rules covering most aspects of our operations have been in effect for quite some time, the ICC has not yet promulgated their regulations regarding minimum track standards for intercity passenger trains. We are hopeful that positive, forward-looking regulations will soon be issued.

The third and most hopeful method for upgrading rail quality for Amtrak routes is the immediate and successful implementation of the provisions of the Railroad Revitalization Act. The Congress has provided methods for increased railroad financial viability; for loans, loan guarantees, and grants to improve track quality; for the rehabilitation and improvement of the ConRail system; and for the long-awaited implementation of the Northeast corridor project. As a career railroad man, I applaud your tremendous efforts in developing and enacting this law. As president of Amtrak, I express my deepest wishes to get these programs moving as soon as possible. If the Nation's rail system can be improved, so can Amtrak's operations.

To try to show how important this is to us, about 40 percent of Amtrak's operation as it relates to passenger activity is on the Penn Central, which is in its final days as a railroad operator.

Amtrak—and the public—has made a substantial investment in new passenger locomotives and cars. Our new Amfleet fleet is growing; the bilevel cars have been ordered and will be out early next year; the Turboliners are operating or being built, and we plan to order more cars to expand our capacity and replace cars that have lived out their useful lifetime. This equipment can be safely operated at speeds up to 120 miles per hour with a very high comfort factor if track conditions permit. If we allow the national rail system to continue to deteriorate by not immediately beginning implementation of the Revitalization Act, then our investment in rail passenger cars will be rattled away on bad tracks.

The railroads must begin to adequately maintain their tracks at the proper level for our trains and theirs, both for safety's and efficiency's sake. The FRA must be allowed to step up their track monitoring efforts. We wholly support their wish to annually monitor the rail system and their wish to closely monitor tracks used by Amtrak trains. We have been cooperating in this effort. Bad track has cost the taxpayer and the traveling public far too much already. One death or injury from a derailment is far too high a price to pay.

We estimate that about \$100,000 per travel hour annually of one of our trains is the additional cost of operating slower than we should operate or prudently operate. For each hour or delay eliminated from the schedules, we could save that amount of money on most of our trains.

Mr. SKUBITZ. \$100,000 per hour?

Mr. REISTRUP. Per train-hour; yes, sir.

Mr. SKUBITZ. In other words, if you increased your speed, you would save some money; is that correct?

Mr. REISTRUP. Yes.

GRADE CROSSINGS

The second key trend in Amtrak's safety picture from 1975 is that highways crossing railroad tracks at grade are becoming increasingly deadly. I have offered to the rail industry to be the cutting edge for protecting grade crossings. The Federal, State, and local moneys can be found, the railroads can help, Amtrak can help. I have hired a director, grade crossings projects, who is here with us today, to act as a catalyst in bringing all necessary parties together in a partnership approach toward any grade crossing improvement program or project. We have got to work with modern, effective grade crossing systems to keep the people off the railroad tracks and protect them. Amtrak will do as much as we can to further this aim.

We have had recently two instances in which our trains were derailed by a truck hitting the side of the passenger train. In the case of the Turbotrain, it was the second car; and in the case of the Sunset Limited in Texas, it hit the baggage car behind the two locomotive units with such force that the train was derailed, and there were passenger injuries.

We have to improve tracks and crossings to keep our passengers safe and the highway public safe. We have to start now. Our new equipment is here now and more is coming. With the combination of good track, safe and comfortable operations and good equipment and scheduling, Amtrak's test can begin properly.

We must work to improve the safety enforcement on the present system and we must begin the track upgrading and improvements. Research on track-train dynamics and on track structures must continue if we are to improve on the present system and develop cheaper and better ways to build safe, fast, comfortable, durable track. Constant monitoring of the system as it changes is essential. We therefore support H.R. 11804, introduced by Chairman Staggers, which continues authorizations for the present Federal Rail Safety Act as amended.

As we set out to work rebuilding the rail system under the legislation now in place, we need to continually monitor our progress and prevent any backsliding. And this committee may be assured that we will do just that.

Mr. Chairman, this concludes my prepared statement. I will be pleased to answer any questions you may have.

[The charts referred to follow:]

CHART 1

AMTRAK PASSENGER TRAIN ACCIDENTS

Number and railroad	Date	Place	Type accident	Damages	Killed	Injured	Cause
1 C(NTSB)	June 10, 1971	Salem, Ill.	Derailment	\$619,000	11	163	Displacement of rail by false flange of locomotive wheel.
2 PC	Sept. 21, 1971	Newcomerstown, Ohio	Collision	1,500	0	2	Shifted lading on freight train moving on adjacent track striking locomotive of Amtrak.
3 SCL	Dec. 23, 1971	Cross Bayou, Fla.	Derailment	808,305	0	22	Malicious opening of switch and failure of engineman to maintain a proper lookout ahead.
4 BN	Jan. 28, 1972	Cut Bank, Mont.	do	225,845	0	27	Train striking frozen snowdrift.
5 BN	Feb. 23, 1972	South Seattle, Wash.	do	35,565	0	56	Trackman opening cross-over switch in front of an approaching train.
6 IC	May 30, 1972	Chicago, Ill.	do	116,000	0	36	Dressing equipment (steam connector).
7 BN	Dec. 4, 1972	Inland, Nebr.	do	237,617	0	73	Broken rail.
8 BN	Sept. 20, 1972	Arlington, Ill.	Rail/highway collision	8,043	2	1	Failure of truck driver to stop short of crossing.
9 BN	Dec. 9, 1972	Webske, Minn.	Derailment	13,600	0	0	Broken rail.
10 ICG	do	Hayes, Ill.	do	(¹)	0	32	Unknown objects struck rail shattering same.
11 SCL	Dec. 13, 1972	Grandy, Va.	do	33,131	0	14	Excessive pressure on high rail of 4° curve. Inadequate track maintenance.
12 ICG	Dec. 30, 1972	Champaign, Ill.	do	18,900	0	16	Broken steam conduit.
13 CY	Jan. 5, 1973	Brain Tree, Va.	do	184,000	0	4	Malicious tampering of switch.
14 PC	Mar. 14, 1973	Cheverly, Md.	Rear end collision	146,200	0	13	Failure of the crew members to operate the work train in accordance with restricted signal indications.
15 ATSF	Mar. 16, 1973	Newton, Kans.	Derailment	(²)	0	0	Broken angle bars.
16 PC	Mar. 18, 1973	East Palestine, Ohio	do	383,500	1	49	Failure of the crew members to inspect the track after the preceding train has separated and "run-in" which resulted in track out of alignment.
17 ICG	July 12, 1973	Chebenese, Ill.	do	112,000	0	72	Inadequately maintained spring frog.
18 ICG	Aug. 21, 1973	Leverett Junction, Ill.	do	44,500	0	3	Thin flange on locomotive wheel.
19 UP	Sept. 20, 1973	Gilcrest, Colo.	Rail/highway collision	41,900	0	0	Crossing.
20 BN	Oct. 4, 1973	Eerlyville, Ill.	Derailment	33,523	0	25	Inadequate track maintenance.
21 ICG	Oct. 19, 1973	Odeli, Ill.	Rail/highway collision	3,000	2	0	Crossing.
22 SP	Nov. 17, 1973	Memphis, Tenn.	Derailment	0	1	0	Low track joint.
23 ICG	Dec. 28, 1973	Anderson, Calif.	do	220,615	0	22	Broken rail.
24 ATSF	Jan. 1, 1974	Deerfield, Kans.	do	8,925	0	0	Broken wheel.
25 PC	Jan. 2, 1974	New York, N.Y.	Side collision	2,575	0	5	Failure of the engineer of the light locomotive unit to stop at a stop signal.
26 SP	Jan. 4, 1974	Newark, Calif.	Rail/highway collision	55,200	0	3	Crossing.
27 ICG	Jan. 11, 1974	Lenox, Ill.	Derailment	31,350	0	3	Snow and ice accumulation on track structure.
28 PC	Jan. 13, 1974	West Mansfield, Mass.	do	(³)	0	0	Broken wheel.
29 ATSF	Jan. 1, 1974	Ardmore, Okla.	Derailment	(⁴)	0	25	Wide gage of track.
30 BN	Feb. 12, 1974	Stretton, Nebr.	do	67,000	0	19	Broken wheel.

See footnotes at end of article.

CHART 1—Continued
AMTRAK PASSENGER TRAIN ACCIDENTS—Continued

Number and railroad	Date	Place	Type accident	Damages	Killed	Injured	Cause
31 SP	Mar. 6, 1974	Shedd, Oreg.	Rail highway collision.	92,700	1	6	Crossing.
32 SP	Mar. 11, 1974	Dayton, Tex.	Derailment	18,000 (*)	0	3	Rock and roll.
33 ICG	Mar. 14, 1974	South Bloomington, Ill.	do	18,000	0	0	Locomotive wheels out of gage.
34 PC	Mar. 26, 1974	Van Wert, Ohio	do	34,000	0	0	Broken rail.
35 PC	Apr. 30, 1974	Wimamarc, Ind.	do	34,000	0	0	Welded rail joint.
36 PC	May 10, 1974	Seymour, Ind.	do	232,500	0	25	Steam connector lodged in heel block.
37 PC	June 17, 1974	Greenwood, Ind.	do	148,500	0	3	Broken rail.
38 SFE	July 5, 1974	Melvyn, Kans.	do	817,000	0	38	Do.
39 LBN	July 16, 1974	Fallsville, Ala.	do	1,300	0	0	Bucklad track.
40 SCL	Aug. 12, 1974	Wake Forest, N.C.	do	305,000	0	15	Broken rail.
41 UP	Aug. 15, 1974	Ogden, Utah	do	40,000	0	2	Switch failure.
42 SP	Aug. 27, 1974	Oregon City, Oreg.	do	9,200	0	0	Generator pulled loose.
43 ICG	Sept. 16, 1974	Galesia, Ill.	Collision	100,000	0	0	Passed stop signal.
44 SP	Sept. 21, 1974	Redding, Calif.	Derailment	150,000	0	15	Vandalism.
45 SCL	Oct. 12, 1974	Thomasville, Ga.	Rear-end collision.	60,000	0	0	Rear-end collision.
46 MLW	Nov. 26, 1974	St. Paul, Minn.	Derailment	18,000	0	8	Switch failure.
47 SCL	Nov. 29, 1974	Jacksonville, Fla.	Side swipe	17,000	0	1	Passed stop signal.
48 PC	Dec. 5, 1974	Baltimore, Md.	Derailment	50,000	0	0	Wide gage.
49 PC	Dec. 28, 1974	Thompsonstown, Pa.	do	181,500	0	40	Split rail.
50 BN	Jan. 2, 1975	Olevia, Wash.	do	234,000	0	4	Missing joint bolts.
51 BN	Jan. 4, 1975	Yardley, Wash.	Rail/highway collision.		0	0	Grade crossing.
52 BN	Jan. 20, 1975	Huntington, W. Va.	do		0	0	Do.
53 C & D	Jan. 31, 1975	Minneapolis, Minn.	Derailment	160,000	0	3	Defective track.
54 BN	Feb. 1, 1975	Sappington, Mont.	Rail/highway collision.		0	0	Grade crossing.
55 BN	Feb. 3, 1975	Barr, Colo.	do		0	0	Do.
56 BN	Feb. 6, 1975	do	do		0	0	Do.
57 PC	Feb. 8, 1975	Crugers, N.Y.	Derailment	73,000	1	0	Do.
58 MP	Feb. 16, 1975	Milford, Tex.	do	3,700	0	2	Track displaced.
59 BN	Feb. 17, 1975	Edmonds, Wash.	Rail/highway collision.		0	0	Trailing truck dropped inside gage.
60 BN	Feb. 19, 1975	Edmonds, Wash.	do		0	0	Grade crossing.
61 BFP	Feb. 21, 1975	Faitharstons, Va.	Derailment	424,390	0	3	Do.
62 BN	Mar. 8, 1975	Russell, Iowa	Rail/highway collision.		0	0	Defective locomotive wheel caused track to displace.
63 ATSF	Mar. 16, 1975	Main, Ariz.	Side collision		0	0	Grade crossing.
64 BN	Mar. 17, 1975	Warwick, R.I.	Derailment	1,470	0	0	Freight load hit train.
65 BN	Mar. 28, 1975	Sartell, Mont.	Rail/highway collision.		0	0	Vandalism.
66 BN	Apr. 2, 1975	Winlock, Wash.	do		0	0	Grade crossing.
67 ICG	Apr. 11, 1975	Brighton, Ill.	do		1	0	Do.
68 ICG	Apr. 11, 1975	Brighton, Ill.	do		0	0	Do.
69 BN	Apr. 26, 1975	Dakland, Calif.	Explosion	10,000	0	6	Explosion in diner.
70 BN	May 8, 1975	Morristh, Ill.	Rail/highway collision.		0	1	Grade crossing.
71 BN	May 10, 1975	Barr, Colo.	do		0	1	Do.

CHART 1—Continued
AMTRAK PASSENGER TRAIN ACCIDENTS—Continued

Number and railroad	Date	Place	Type accident	Damages	Killed	Injured	Cause
120 PC	Det 17, 1975	Wilmington, Del.	Rear collision	317,061	0	411	Amtrak train hit by Penn Central commuter train.
121 BM	Oct 20, 1975	Bellefonte, Pa.	Derailment	292,000	0	0	Washed out tracks.
122 SCL	Oct 22, 1975	Cathlamet, Ore.	Rail/highway collision		1	0	Grade crossing.
123 LN	Oct 25, 1975	Louisville, Ky.	Side collision	45,000	0	0	Freight load hit train.
124 PC	Oct 29, 1975	Baltimore, Md.	Fire in equipment	90,000	0	0	Not yet determined.
125 BN	Oct 30, 1975	Chariton, Iowa	Rail/highway collision		0	0	Grade crossing.
126 SCL	Oct 31, 1975	Sulphur Springs, Fla.	do		0	0	Do.
127 BN	Nov 5, 1975	Bardolph, Ill.	do		1	0	Do.
128 ATSF	Nov 8, 1975	Britton, Oyo	do		0	0	Do.
129 ICG	do	Batesville, Miss.	do		0	0	Do.
130 PC	Nov 9, 1975	Sharon, Conn.	Equipment fire	3,000	0	0	Short circuit.
131 ICG	Nov 19, 1975	Elwood, Ill.	Rail/highway collision	1,000,000	0	39	Truck hit side of train.
132 BN	Nov 20, 1975	Wilmar, Mont.	do		0	0	Grade crossing.
133 ICG	Nov 28, 1975	Wilona, Miss.	do		0	0	Do.
134 PC	Dec 1, 1975	Newark, N.J.	Destruction on track	2,000	0	1	Loose timbers from bridge.
135 ICG	Dec 3, 1975	Vadin, Miss.	Rail/highway collision		0	1	Grade crossing.
136 ICG	Dec 5, 1975	Manteno, Ill.	do		0	0	Do.
137 MR	Dec 7, 1975	Lacrosse, Mont.	Derailment	52,000	1	4	Track obstructed.
138 SCL	do	Clearwater, Fla.	Rail/highway collision		1	0	Grade crossing.
139 P.C.	Dec 8, 1975	Albion, Mich.	do		0	0	Do.
140 ICG	do	Venice, Ill.	do		0	1	Do.
141 SCL	Dec 9, 1975	Lakeland, Fla.	do		0	0	Do.
142 PC	Dec 12, 1975	Comstock, Mich.	do		0	0	Do.
143 MP	Dec 13, 1975	Little Rock, Ark.	Side collision	3,000	0	0	Load on train hit train.
144 PC	Dec 14, 1975	Poughkeepsie, N.Y.	Rail/highway collision		0	0	Grade crossing.
145 SCL	Dec 17, 1975	Westlake, Wyo.	do		0	0	Do.
146 PC	Dec 20, 1975	Warsaw, Ind.	do		0	0	Do.
147 PC	do	Mich. City, Ind.	do		0	0	Do.
148 SCL	Dec 23, 1975	Grady, Ala.	do		0	1	Private grade crossing.
149 SCL	Dec 24, 1975	Tomball, Ala.	do		0	4	Grade crossing.
150 PC	Dec 29, 1975	Indiana Union Terminal	Derailment	5,000	0	0	Switch not cleared before reversing.

1 No estimate.
2 Undetermined.

3 Unknown.
4 Report not complete.

CHART 2

AMTRAK ACCIDENTS: 1971-75—SUMMARY BY CAUSE

Probable cause	1971 (8 mo)	1972	1973	1974	1975
Track.....	0	2	4	10	12
Equipment.....	1	3	0	5	3
Employees (Amtrak and railroad).....	0	1	1	4	4
Vandalism.....	1	0	0	1	3
Rail/hiway ¹	0	1	2	2	75
Miscellaneous (or cause not determined).....	1	0	0	1	5

¹ Beginning in 1975, all Rail/hiway collisions must be reported to FRA regardless of damage costs. Prior to 1975, only collisions with damages exceeding \$750 were to be reported.

CHART 3

AMTRAK ACCIDENTS: 1971-75—SUMMARY OF DAMAGE COSTS BY PROBABLE CAUSE OF ACCIDENT¹

Probable cause	1971	1972	1973	1974	1975	Total (by cause)	Percent of all damages occurring 1975
Track.....		\$284,348	\$753,388	\$1,596,113	\$2,171,700	\$4,805,549	48.7
Equipment.....	\$619,000	134,900	44,500	335,125	437,390	1,570,915	15.9
Employees (Amtrak and railroad).....		35,565	146,200	179,575	340,536	701,876	7.1
Vandals.....	808,305		184,000	150,000	11,970	1,154,275	11.7
Rail highway.....		8,043	44,900	147,900	1,023,371	1,224,314	12.4
Miscellaneous (or cause not deter- mined).....	1,500	225,845		31,350	148,000	406,695	4.1
Total (by year)....	1,428,805	688,701	1,172,988	2,440,063	4,132,967	9,863,524	

¹ Does not include cost of track repair, cost of clearing wreck, costs of rerouting trains, cost of equipment replacement or damage claims by passengers and employees. Cost only includes damage sustained by Amtrak equipment at the time of the accident.

Mr. ROONEY. I am sure there will be a lot of questions, Mr. Reistrup.

I see this very fine committee is well attended this afternoon.

First of all, I would like to commend you for your very fine statement and also for the excellent job you are doing with Amtrak. I know you have problems. This is what we want to discuss today. I hope we won't get into any personalities. We just want to find out how this committee can improve Amtrak and how the committee working with you can help you improve Amtrak.

I may as well start off with this little article written by Steve Aug which appeared in the Washington Star. I suppose you read it and reread it. Tell me something about that disastrous day.

Mr. REISTRUP. Mr. Chairman, Mr. Aug suggested that is the day we would like to forget, and he is right.

We have been doing quite a bit better with our holiday operations over the country and also in the Northeast corridor. Normally, the Wednesday before Thanksgiving is now our very highest peak day travel. I think the record will show that we did a very fine job, just a handful of standees relatively during that period. We did get sand-bagged, however, on the Monday that is this unique Lincoln's Birthday-Washington's Birthday holiday. There are a couple of factors that bear on it. We didn't do as well as we should have. We have a lot of new equipment out in the corridor now, over 100 cars, including new locomotives. But they will not operate together with the old

equipment. We hope by summer to have all of the old equipment out of this operation with respect to the specific corridor trains. We lose flexibility running both the old and the new trains. If a locomotive that has electric head-end power on it fails—and we had that happen—we cannot handle the modern cars to hook with the old locomotive, which does not have the electric head-end power, or vice versa.

We do have eight special cars with head-end power to help bail us out. These are cars that have a mobile engine generator in them. But when we have got all eight working and in use, we have no more. A couple of those failed.

We found also that this really wasn't a holiday with respect to shoppers and department stores, particular in the New York area and around Boston. Although the commuter operations went to basically a holiday operation, with all of the shoppers traveling we were more in the commuter business than we normally were.

That was compounded by the fact that in Boston we were unable to use borrowed or leased commuter equipment since it is now limited to 50 miles an hour. We used to borrow these cars for the weekend, but it is no longer safe to operate.

Mr. ROONEY. I can sympathize with you, if you will yield for one moment, on that disastrous Monday, but you knew that there would be commuters. You know that Washington's Birthday is always traditionally a sale day, whether it is New York or Allentown or Bethlehem or eastern Pennsylvania.

Mr. REISTRUP. That is correct. That is why we have to do a better job. With what we had out there and the situation we were faced with, this is what happened.

I think I would say in all fairness—my staff has really been raked over the coals about this—if everything had worked right, we probably could have done 10 percent better but it still would have been pretty bad. By the time we get the corridor completely reequipped, this situation will change a lot.

An example is that the new cars have 84 seats in each one. They are really high capacity. The old cars have as few as 40 in a coach. Most of them in the corridor, I would say, handle about 60 people. So, for a given train length of cars, we just are unable to seat the number of passengers with the older equipment. The new equipment is really the key to that operation.

Mr. ROONEY. How about the fire that broke out in the snack bar?

Mr. REISTRUP. That I really don't have the details on myself. I know it happened, but I don't have the details. I can supply those for you.

Mr. ROONEY. Were there fire extinguishers available?

Mr. REISTRUP. Our cars are supposed to have them.

Mr. ROONEY. Did that car have it?

Mr. REISTRUP. I don't know. We can find that out for you. I have found that the trains that I have ridden—and I have over 30,000 miles in this past year—generally do have a fire extinguisher in place. However, they are attractive items to have on boats, and so forth, so they tend to disappear. If we try to protect them so they won't walk away, then they are not available when there is an emergency, because you can't run around finding somebody with the key who can get into this

housing to get the fire extinguisher out. But generally, Mr. Chairman, the fire extinguisher is available.

[The following information was received for the record:]

The fire on train 172 on February 15 was caused by brake sparks entering through rusted holes in the metal floor which caused the flooring under the refrigerator to catch on fire.

The fire department was called after the car attendant ineffectively tried to put it out with an extinguisher. (Attendant was unable to reach flames because of location.) Damage was contained to a small area.

Mr. ROONEY. As you know, according to the safety rules and regulations set forth by FRA, you are not allowed to ride on platforms. Is it true that passengers were riding on platforms?

Mr. REISTRUP. They were but not on all the trains. There were only really a relatively few trains that were with passengers on the platforms. One of them, I believe, was No. 173.

Mr. ROONEY. One of our spokesmen I believe said you have improved over last year because then there were 10,000 people standing and this year there were only 3,000. I hope in 1976 during our Bicentennial there won't be 300 standing around.

Mr. REISTRUP. I would hope we could get down that low. We did just about that over the Thanksgiving period. We were down below 1,000 standees.

Mr. ROONEY. We will forget about Washington's Birthday, the tree is down, and we will go on to H.R. 11804. In that respect, do the proposed changes in the flagging rule and the blue-flag rule affect your present operation by increasing your costs?

Mr. REISTRUP. I am a very strong believer in the blue-flag rule. As I understand the proposed changes, they will not adversely affect us.

Mr. ROONEY. Would it cause a delay in your schedules?

Mr. REISTRUP. No. We should be doing this anyway. In many parts of the country the railroads actually have this sort of regulation today, out West particularly.

Mr. ROONEY. Are you directly affected in your present operations by the provisions relating to location of crew quarters away from switching yards or by the change in the Hours of Service Act relating to wreck train crews?

Mr. REISTRUP. We should not be adversely affected, Mr. Chairman, on the hours of service as our crews operate and we should be getting over the road in less than the 12 hours. I have no personal knowledge of the crew quartering requirements adversely affecting us, but I would like to have the opportunity to research that and if that is the case I will submit you a statement.

Mr. ROONEY. Do you think these proposed changes would have an adverse effect on your operations once Amtrak takes over the corridor?

Mr. REISTRUP. I would doubt it, but again I would want to research it. We do have crew quarters in the Union Station at the present time, for example. I am not familiar with the location of all of them in the corridor myself.

Mr. ROONEY. I wonder whether or not you could tell me whether you have any employees subject to FRA safety rules?

Mr. REISTRUP. We do at present that operate or work in the maintenance yards, because we are performing safety maintenance. We do not have at this time any train and engine service employees at all. We

will. Today we have none at all. Neither the Hours of Service Act nor the FRA train operating rules apply to us directly at present.

Mr. ROONEY. Do you think if we were to increase penalties we would have a safer operation as far as the railroads are concerned?

Mr. REISTRUP. I feel that penalties are one way of forcing someone to do something. I think if we did not have policemen, people would not stop at red lights. I think we have to consider just whom the penalties would be placed against and how much good it would do. In the recent past many of the penalties have been incurred by railroads that were being penalized because they were bankrupt or were on the verge of bankruptcy. I don't know that it does too much good to whip somebody who already doesn't have enough money to make ends meet.

I would suggest it is better to have the penalty system reasonable as to the fines assessed but have more inspectors and actually keep after the operation. From my operating experience in the past, the best thing you can do is have a safety man or a Federal safety man walk in, whether it be your own railroad or some outsider. You even look at your own operation more closely and some things will pop out at you that you hadn't even noticed that ought to be corrected. I think having active supervision is much more important than a system of fines.

Mr. ROONEY. Are you aware of the pending legislation transferring the FRA safety rules over to the Department of Labor?

Mr. REISTRUP. I am fairly familiar with it, yes, sir.

Mr. ROONEY. What do you think of that proposal?

Mr. REISTRUP. I would rather have, as a railroader, which is really what Amtrak basically is, one regulator. Instead of having an overlap of the OSHA regulations and also the FRA regulations, it makes it much cleaner to be working really under one policeman. The two interrelate. I think a good example is in the shops. There are FRA inspectors to make sure that the locomotives comply with the safety standards and that they receive their form inspection every month, and so forth. As long as those people are there, I don't see why they can't be checking the shop for the proper safety features instead of having a whole different group come in who, to my knowledge, are completely unfamiliar with railroad operations and would not really know for a while what they were inspecting.

I would really go for one inspection source and I would opt for FRA.

Mr. ROONEY. Does Amtrak carry any hazardous materials on board?

Mr. REISTRUP. To my knowledge, we do not. Let me double check that. I don't know of any.

Mr. ROONEY. Can you refuse if you are asked?

Mr. REISTRUP. We would not if we were asked. So, yes, we could refuse. I don't know how they would get on unless someone would sneak some in a package, which I guess could be done.

Mr. ROONEY. Do you think the FRA and the National Transportation Safety Board both are doing an excellent job in trying to provide railroad safety with respect to passenger service in this country?

Mr. REISTRUP. I think that the passenger safety record largely speaks for itself in the effectiveness of the activity. FRA has demonstrated in its working with us, and actually giving us a pretty rough time on the electric locomotive approval for the Northeast corridor, that they are going to be very stringent with respect to the safety of the equipment.

I think the major shortcoming is in the area of track conditions on the deteriorating railroads. Many railroads have good track, but, of course, some of them do not.

Mr. ROONEY. Thank you, Mr. Reistrup.

Mr. Madigan, you will be rewarded for your prompt attendance here today.

I recognize Mr. Madigan.

Mr. MADIGAN. I am shocked. That still means it is only 5 minutes, doesn't it?

Mr. ROONEY. No, you can have as much time as you want.

Mr. MADIGAN. Mr. Reistrup, you may have known this before you were in Europe, but when you were there I am sure the point was made to you that the weight of freight trains in Europe is regulated much in the same manner as the weight of trucks is regulated in the United States. As I know you know, the Amtrak service in my part of Illinois has been the French Turbotrain. I believe that has been changed now. In France, following you, I visited with safety engineers there who were familiar with the Penn Central and the Illinois Central and familiar with the track conditions because they had been out with the French train being operated by Amtrak. They said to me that if the track in the United States, which they regard as the biggest safety problem, were brought up to its optimum physical condition, and if we continued to operate the jumbo cars, the hopper cars and tank cars that we operate today on freight trains, in a period of 60 to 90 days those tracks would be so badly deteriorated that they would again be unsafe for passenger service.

Would you agree with that conclusion?

Mr. REISTRUP. Mr. Madison, I would agree that there would be a rather rapid deterioration. Whether the tracks would become unsafe in 90 days—well, I think they could become uncomfortable in that period of time and, of course, in some locations if spot correction were not done they would become unsafe.

My personal feeling is—I have said this now for some years—we went too far in the U.S. railroad freight business to try to increase the load in the freight cars. It was an effort to economize. The optimum probably was somewhere in the neighborhood of 83 tons capacity which was one of the later coal car sizes prior to the 100 tonner. The problem really has been compound by the 100 tonner with four axles. In many cases with those freight trains running at high speeds the pounding on the track is really severe. Many railroaders have discovered this, in most cases too late. Our axle loading even for the locomotives in this country are 25 to 50 percent higher than those in Europe and contribute to this problem.

Mr. MADIGAN. Is it fair to say that if the Federal Government invests a lot of money in rebuilding track and the same kinds of freight trains continue to be operated on those tracks, the money is just being thrown away?

Mr. REISTRUP. It would be fair to say that if the Government investment were not protected. With the Amtrak track investments, which have been relatively minor so far, we have attempted to protect the investment.

The railroad has to agree before we begin to keep the track in the new upgraded condition. I think the best example of that was with the Penn Central, although the Penn Central is soon to disappear. North of New York to Boston we had a track improvement project of some \$15 million. It is almost finished now. Part of the agreement was that they had to keep it up to that new standard and we would police that.

In the Northeast corridor, which is going to be the big investment for the future, I think we are really going to have to move toward limiting the axle loading or having the freight user, which will be Con-Rail in this case, pay for the damage. A form of incentive contract would be the best way to get to this. The heavier the car is, the more they pay. The axle loadings are what create the problem.

Mr. MADIGAN. Mr. Boyd, who formerly was Secretary of the Department of Transportation, indicated in a letter to me that the Interstate Commerce Commission rate regulations are discriminatory in such a manner so as almost to force railroads to use jumbo cars. I don't understand that. Can you explain that to me?

Mr. REISTRUP. In the days when the jumbo cars were brought in, I think the best example was the Southern Railway's Big John grain car. In an effort to get past the Interstate Commerce Commission with a rather sizable rate reduction in order to compete, so the railroad would be hauling the grain, the big car was part of that package. It was really in many cases a way of competing with the barges, too, in that there had to be something more before the Commission than just a straight rate reduction. There had been some justification for doing it, such as improved efficiency.

In recent times this has been effective, but the damage has been done. On most railroads probably a third of their coal car fleets are 100 tons already.

Mr. MADIGAN. One other question.

The editor of the St. Louis Post Dispatch sent me a summary of speed schedules put out by the Missouri-Pacific Railroad over a period of time. The initial schedule shows passenger trains being limited to speeds of 75 miles an hour and freight trains being limited to speeds of 55 miles an hour. Over a period of 7 years those schedules changed so that at the end of the seventh year the freight train was then allowed a higher speed by 10 miles an hour than the passenger train.

Can you explain to me how that could come about?

Mr. REISTRUP. I would have to defer to the Missouri-Pacific as to why this was done. I would state that if the facts, as I understand them, are correct—in fact, I have had a locomotive crew talk to me about the fact that they could not operate as fast as a passenger train. I have been trying in this past year to work with Missouri-Pacific. I think we have solved a lot of our problems. That railroad was irritated with us about some of our accounting procedures, for instance. We had a lot of bills in dispute. I think we have made some progress.

It is my understanding—I have had none of my people tell me otherwise—that Amtrak's passenger trains are now allowed to operate at least at the freight train speeds, but it is also my understanding that we never exceed them. Normally around the country we exceed freight train speeds by a minimum of 10 miles an hour. If the track

is 50 for freight we go 60; if the track is 60 for freight we go 70, and so forth. Sometimes we have as high as a 20-miles-an-hour differential.

We have been making some improvement on our longest run over the Missouri-Pacific, which is from St. Louis to Laredo. At the present time we are making one more attempt at getting the track speeds increased. If this is not successful, next week—I have directed my operating vice president to make one more try—we will use the paragraph in the Rail Passenger Service Act that requests the Secretary of Transportation to determine how fast we can operate.

Mr. ADAMS [presiding]. The time of the gentleman has expired.
Mr. Skubitz.

Mr. SKUBITZ. Thank you, Mr. Chairman.

How fast are you permitted to operate on the Missouri-Pacific track?

Mr. REISTRUP. The fastest I know of is 60 miles an hour, although there may be some parts a little higher.

Mr. SKUBITZ. I understood you were permitted to travel at an average rate of about 40 miles an hour.

Mr. REISTRUP. The average would be about that, yes.

Mr. SKUBITZ. Are their tracks that poor?

Mr. REISTRUP. No, their tracks are very, very good. It is one of the best-maintained railroads in the country.

Mr. SKUBITZ. You are familiar with the fact that I wrote them a letter, to which I have not received an answer. I did receive some cock and bull story that as soon as they get rid of the passenger trains they will have to start re-laying their track and changing the contour on curves. I don't know why unless they didn't want to handle Amtrak. I have heard, too, that it has something to do with the safety signals, that if they permit Amtrak to go faster it will change their whole safety setup.

Have you any idea what it would cost them to change their safety system?

Mr. REISTRUP. I would not know because I don't know the signal spacing or design, but I do know that in some cases railroads have reduced the superelevation on curves, the banking, as passenger trains disappear, because the heavy freight trains with that excessive banking pound the low rail and cause the degradation of the track. This, however, still does not require a passenger train to operate at the same speed as the freight train. It always can operate around a given curve, with very rare exceptions, 10 miles an hour faster than freight.

Mr. SKUBITZ. In other words, even though they have rebanked their tracks, they are still holding you to the old speed. The story I am supposed to get in a letter they are supposed to be sending me is that because of their banking they can't permit you to go around these curves—

Mr. REISTRUP. I would say that is not the case from my experience, and I used to work on the track.

Mr. SKUBITZ. Have you any idea why they would have to change their whole signal system if they permitted you to travel at a rate of, 10 or 15 miles an hour faster?

Mr. REISTRUP. No, Mr. Skubitz, I would not, but again I would have to see what the spacing is. Generally, our passenger trains have a stopping distance of something on the order of—

Mr. SKUBITZ. What is your relationship with the Missouri-Pacific? Very good?

Mr. REISTRUP. Let us say it is a little bit better than the rock bottom that I found it at a year ago. I had hoped it would be a lot better than it is by now. I would like to add one thing to clarify this because I would like to tell the whole story.

The level of utility that the railroads have to give us—the 1971 level—is in fact being given us by the Missouri-Pacific. Their trains were operating very slow, pre-Amtrak. So we are getting that. They are living up to that. If that weren't the case we would already have taken action. One of the reasons those schedules were very slow then was that there was a lot of mail on those trains. They were basically mail trains rather than passenger trains. All of that extra time for standing in the station is in the schedules. Congressman Madigan looked at schedules in which we are comparing a mail train with a passenger train in some instances.

Mr. SKUBITZ. I would like to be kept advised on the progress you make in getting your speed increased because, if I understood you correctly, an hour's time costs you \$100,000. How many miles do you travel on the Missouri-Pacific?

Mr. REISTRUP. I would guess probably 1,500 route miles, roughly, plus or minus.

Mr. SKUBITZ. I yield to my colleague if he has any more questions.

Mr. MADIGAN. I yield back the balance of your time.

Mr. ADAMS. The time of the gentleman has expired.

Mr. Santini.

Mr. SANTINI. Thank you, Mr. Chairman.

How many accidents did you have last year, Mr. Reistrup?

Mr. REISTRUP. We have all of them here. Starting in 1975, most of them were grade-crossing accidents. We had 102 accidents in 1975.

Mr. SANTINI. For purposes of your statistical records, what is classified as an accident?

Mr. REISTRUP. An accident for us is anything that is required to be reported under the Federal Railroad Regulations. This would be anything involving a personal injury and a certain monetary limit which, as I recall it, is \$1,750. Then there is a little bit of a different approach on the part of the National Transportation Safety Board. That body investigates all accidents involving a passenger train even if the monetary limit of \$1,750 were not exceeded. That is unlikely, however.

Mr. SANTINI. What was the dollar amount of damage for 1975?

Mr. REISTRUP. The total for 1975 was \$4,132,000.

Mr. SANTINI. What was the damage total in 1974?

Mr. REISTRUP. \$2,440,000. We had quite an increase.

Mr. SANTINI. Do you know the number of accidents occurring in 1974?

Mr. REISTRUP. Yes. In 1974 there were 23. There was a change in the reporting system in that beginning in 1975 all of the rail/highway at grade collisions had to be reported to FRA regardless of cost. Prior to

that they had to exceed \$750 damage. The rail/highway-reported accidents went up 73 in that 1 year. That gives you an idea. We have had an absolute increase in the track-caused accidents by two. In equipment-caused accidents we had a decline.

Mr. SANTINI. Have you had a cost increase from approximately \$2 million to \$4 million?

Mr. REISTRUP. Yes, sir.

Mr. SANTINI. Considering the track condition problem and the grade crossing problem as the two principal causal ingredients in accidents, do you foresee that 1976 will bring us to an \$8 million threshold in damage or loss?

Mr. REISTRUP. No, sir, I do not. I certainly would hope not and I don't expect it. I would say perhaps we might end up with about \$5 million. Part of this would be due to the fact that we have more new equipment now. If we damage the new equipment we have a much higher equipment damage cost figure. For instance, the turbotrain being hit by the truck caused some \$600,000 to \$800,000 damage. With the old equipment you really don't suffer much damage in dollars.

Mr. SANTINI. Is your observation with regard to 1976, and the potential loss in terms of dollars, based solely on the addition of the new equipment?

Mr. REISTRUP. No, sir. It is based on the fact that a lot of track work is going on on the Penn Central right now and with ConRail and also the fact that we now will be comparing apples with apples 1 year to the next. In comparing 1975 to 1976 we won't have any change the reporting procedure. I don't think we will have the increase in dollar amounts.

Mr. SANTINI. The dollar amounts don't change significantly, whichever reporting procedure is applied, do they?

Mr. REISTRUP. Yes, they did, by about \$800,000.

Mr. ADAMS. The time of the gentleman has expired.

Mr. REISTRUP. I have one question.

How do you compute your damage figures? I notice on your chart 1 you have under Nebraska, BN, February 12, 1974, broken wheel, \$67,000 worth of damages. I just checked with staff and our recollection is that involved about four cars and about half a mile of track. Are those figures divided between the company and Amtrak as to the amount of damage or for \$67,000 could you repair four cars and a half mile of track?

Mr. REISTRUP. The figures are the damage which Amtrak has to pay, Mr. Adams. It depends on what kind of accident occurs. For instance, one pair of wheels going off. In this case of course there were four cars. It depends on whether it is on a grade or on curved track, just what happens as to the track damage involved. It is our estimate the total amount of damage is in the cost of the ties to be replaced. We make an estimate on the spot while the cars are still lying hither and you. We try to make our best guess. We don't really know, though, until we repair the cars exactly what the damage is.

Mr. ADAMS. Mr. Skubitz, I yield to you. You had another question.

Mr. SKUBITZ. I had only one question.

Mr. REISTRUP. I think I am correct in saying that in the Northeast corridor, not on the Metroliner but on some of your other trains, you

have reduced your rate by 25 percent, which brings the fares down below the bus rate. Is your service so poor that you have to reduce prices or is it for the purpose of competition?

Mr. REISTRUP. Mr. Skubitz, we are trying to fill up the trains on the days when we do not have heavy ridership and thereby encourage some of the people who ride with us on holidays, who can ride on the other days—for instance, retired people and people who are not working—to do so.

Mr. SKUBITZ. But should these rates be below the bus rates?

Mr. REISTRUP. I do not think so. In general I think the rate should be above the bus rate.

Mr. SKUBITZ. I would say if you are offering a better service than the buslines you ought to charge more than the buses are charging. Otherwise, it looks as if you are in the business of trying to cut rates in order to get business. I hope you will look into this practice.

Mr. REISTRUP. We are trying to price against the automobile. I think the buses are trying to do that, too. These particular rates do not apply during peak travel, and they also require a person to travel roundtrip. This is not a one-way reduction. It is really quite limited in use. We are trying to fill up the seats, as the airlines are now doing, off peak.

Mr. SKUBITZ. I have no objection to filling seats, but I don't think you ought to undercut the price of the buses in order to take away their business. If you can't do it by service, you should not do it by price.

That is all.

Mr. ADAMS. Mr. Reistrup, we appreciate your being here to testify today on behalf of Amtrak.

Mr. REISTRUP. Thank you.

Mr. ADAMS. The next witness before the committee is Mr. John German, vice president, engineering, Missouri-Pacific Railroad Co.

Mr. German, it is a pleasure to welcome you today to the committee.

STATEMENT OF JOHN G. GERMAN, VICE PRESIDENT-ENGINEERING, MISSOURI-PACIFIC SYSTEM

Mr. GERMAN. Thank you, Mr. Chairman.

I am John German, vice president-engineering, of the Missouri-Pacific System, commonly known as MoPac. We operate 12,000 route miles in the Midcentral and Southwestern United States.

I am pleased to have the opportunity to address this fine committee in regard to H.R. 11804 and H.R. 11837 in the rail safety area. Basically I have no exceptions to H.R. 11837 but I do take exception to some of the contents of H.R. 11804.

In regard to the appropriation I will say to the extent this proposed legislation contemplates an increased appropriation for research and development, that feature has my strong support. AAR-FRA cooperative efforts in this area have already been most beneficial. For example, such efforts have brought into being testing facilities for performance of such things as crash tests and tank car tests and track/train dynamics. There is soon to be constructed a facility for accelerated service testing of track and equipment at Pueblo. These are but a

few of the examples of the type of beneficial accomplishments which will be fostered by the research appropriation included within these bills.

Yesterday Dr. Harris of the AAR ably covered this ground in his testimony and I heartily endorse his thoughts.

While I support the increase in research appropriation, I see no justification for the artificial tie-in or restriction or limitation proposed in section 212(c).

With respect to the remainder of the subject matter of these bills it is my opinion that the proposed provisions in H.R. 11804 would not only do little or nothing to improve rail safety, but would actually be counterproductive. To the extent the proposals add additional unnecessary regulations and artificially restrict the railroads from efficient use of manpower, they are directly at odds with the overall purpose of holding down costs in this inflationary era.

Further, they fail to recognize what to me is a simple, inescapable truth: Safety cannot be legislated.

In regards to section 2 of H.R. 11804, concerning fines, when one considers the size of personal injury judgments and the substantial property damages which can result from any accident, it is evident that there already exists far more than enough incentives for taking all feasible steps to insure safety and to avoid such accidents. Increasing the fines serves no useful purpose as a deterrent to unsafe conditions. The prime deterrent is, always has been, and always will be, the high cost of personal injuries and the loss of business by reason of service interruptions.

Shortly after the FRA was formed an informal system was established to permit a carrier to sit down in conference with FRA to discuss claims. That system serves a dual purpose. First, it establishes a better understanding on the part of both the carrier and the FRA as to the nature of the complaint, the proper interpretation of the rules, and what can be done to remedy unsafe conditions. Second, it permits the reduction of fines where the facts developed in conference indicate a compromise is in order. Furthermore, the claims conference saves both carrier and Government vast amounts of time, effort and money in court costs. If the level of fines were to be raised it would discourage the use of the conference system. The result would be needless litigation and related expenses which under the present system are avoided.

Finally, payment of any fines seriously detracts from the limited funds now available to the carriers for the improvement and maintenance of property so necessary to safety and service. Grossly increased fines would only worsen this condition.

Ten years ago the Congress set up FRA to make and enforce rules necessary for railroad safety. However, in H.R. 11804 Congress now seeks to override that authority at a time when the FRA already has in effect rulemaking procedures in regard to section 4, crew quarters, section 5, hours of service, and section 6 relating to flagging, blue flag and rear markers. To do so at this time is premature and would serve to dilute the effectiveness of the FRA.

Furthermore, these five proposals are unworkable and extremely burdensome to MoPac.

Section 4 concerns quartering of crews. Such terms as "controlled temperature" and "away from the yard" are so vague as to be unworkable.

The quartering of the crews has long been a matter of negotiation between the carriers and the unions. As a result, many practices exist throughout our system and the entire railroad industry which are considerably at variance with what here is proposed. Historically, crew quarters and even their private homes were built at or very adjacent to the rail yards. This was not only the most handy location but it was also frequently the point where the heart of the town originated.

If all crew quarters, including dorms, camp cars, hotels, motels, and private homes within or immediately adjacent to switchyards were abandoned, what assurance lies in this proposal that alternative quarters are going to be more safe, comfortable, or restful? Also, what assurance is there that travel time to and from such quarters would be shorter or safer? Gentlemen, the answer is none.

The railroads all over the country have sizable investments in crew quarters. Furthermore, in most instances, such presently used locations are nonrailroad owned, and the proposed legislation would hence have an adverse effect on the privately owned motels, hotels, and so forth, as well as the railroads.

To propose legislation rendering them unusable would be grossly unwarranted.

As regards the hours of service covered by section 5, to the extent that additional crews would have to be provided under the proposed legislation this would entail an unnecessary added burden to already hard-pressed railroads but, worse yet, it would make the emergency equipment unavailable sometimes for an additional emergency.

Even though not required to do so under the present law, MoPac has made every effort to honor the hours of service provision for even wreck or relief trains. Generally, we are able to relieve such crews at the end of 12 hours of service. However, there may be an occasional situation because of terrain, severe storms, washouts, and so forth, where it would be extremely difficult to bring in another crew in order to relieve the crew of a wreck train at the expiration of 12 hours.

Relief crews handle special equipped and manned trains at key points. It is imperative that these trains be returned as promptly as possible to their home point for resupply, much the same as a fire-truck. These crews are well supervised by officer teams. When handling wreckers they have the opportunity to eat and even relax while the wrecker is operating or the pile driver is driving piles.

The judgment to exceed 12 or even 16 hours of service should be strictly up to the officer in charge at the scene based upon the degree of emergency, the local conditions, and the condition of his men. This is not a matter that can be legislated nor can it be adjudged from afar in a timely fashion.

Section 6 concerns flagging. The operation of trains is extremely complex and does not lend itself at all to legislative prescription.

The proposed rule requires flagging where flagging is not at all needed for safety. The proposal is cumbersome and extremely burdensome and cannot be compared to our present flagging rules under which we now operate.

To pass a law which would so rigidly restrict rail operations would hamper efficiency while not enhancing safety in any way. It would also preclude any improvement we can make in the future. In my experience I have found that train accidents are not caused by the absence of flagging rules. Such accidents are caused by a failure to comply with existing rules. Legislation will not change this.

The blue flag rule is very similar to the flagging rule, rule 99, discussed above. Such general provisions have long been an important part of the uniform code of operating rules. In my estimation, the proposed rule is in no way preferable to existing rules and instructions.

Furthermore, it is obvious that there is no justification for using a blue flag when performing an airbrake test or when a car is advanced through a repair facility by mechanical means or by the repairman themselves.

To cast this rule in the concrete of legislation is unrealistic. It would impede changes and adoption of other methods of protection which could well prove superior. In my experience when accidents have occurred in what might be viewed as a blue flag situation they have been caused by failure on the part of the crew member to observe existing blue flag rules rather than by the absence of such rules. This situation would in no way be changed by substituting legislation for the existing rules.

Proposed section 5 would require highly visible markers which are lighted during periods of darkness on the rear of all trains. I think it is premature to consider legislation of this kind, particularly when that which is proposed is so vague in nature.

We feel that our present method of marking is effective in preventing accidents involving one train's overtaking another in nonsignal territory. In signal territory the use of electric markers should not be required if the following trains control their speed in accordance with the signals and existing operating rules. The proposal under consideration is premature, potentially very expensive and without promise of any real safety benefit.

The last item of section 6 relates to the division of FRA into 10 regional offices. I strongly believe that increasing the number of such offices would not enhance safety in any respect. Rather, it would serve to add unnecessary jobs and expenses, it would compound clerical work and it would cause confusion to railroads which are exposed to more than one regional office.

To illustrate, our 12,000-mile system in 12 States is already subject to inspection by 4 regional offices—Atlanta, Fort Worth, Kansas City, and Chicago.

For uniformity of inspection practices and in order to increase the efficiency of the FRA's operation, I strongly recommend that the districts be reduced from 8 to 5 rather than increased from 8 to 10. By the same token, I do support the centralized control of regional office activities by the Administrator of Safety.

The Missouri-Pacific has made numerous advances in the area of safety and it has done so not because of rules or laws but simply because of its strong conviction that to operate safely is to operate efficiently and that safe operations are simply a matter of good business in order to minimize the extremely heavy costs which inevitably accompany accidents of any kind.

In the past 15 years we have made every effort to improve our physical plant and equipment by judicious use of capital and maintenance moneys. It is our firm belief that a physically strong railroad cannot help but be a safe railroad. Missouri-Pacific does not take a back seat to any railroad in this country as far as its physical condition is concerned.

In my testimony I have outlined steps that we have taken to improve and maintain our physical plant. In spite of the 1975 recession, less than 2½ percent of our locomotives and less than 6½ percent of our freight cars are presently stored in bad order.

It must be recognized, however, that the finest physical plant may still not be the safest plant unless there is also a safety plan which is endorsed and supported by top management, supervisory personnel, and all other employees. As I have stated, it is my firm belief that safety cannot be legislated. Instead, employees must be trained and motivated to perform in a safe manner.

We have established training schools for enginemen at North Little Rock, for brakemen and switchmen at Fort Worth. We have on-the-job training, additional outside classroom work, and correspondence courses and night school courses for other employees.

We maintain safety committees at various levels comprised of supervisors and officers and union representatives.

These safety committees and especially the union representatives are encouraged to submit suggestions to improve compliance with safety rules. Each suggestion receives committee action and, if accepted, steps are taken to implement the suggestion as promptly as possible. If the suggestion is not found acceptable, an explanation is promptly made to the one who made that recommendation. A number of very beneficial programs have resulted from the activities of these committees.

One example is the conference approach. In examining our safety problems we find that most employees have never had an accident. However, those employees who do have an accident usually have had several accidents. To this end we establish the conference between an officer and the employee to find out what is the man's problem and what can we do to help this particular type of employee.

We have found individual video tapes especially effective in our training program. These tapes are 10 to 20 minutes long. They are aimed directly at safety for not only the new employee but the other employees. Some of the examples are: a tour around the yard, how to get on and off locomotives and moving equipment, how to use hand signals, precautions in switching, how to handle safely the switches, interlockings, how the orders work, and so forth.

In addition to the above activities we insist that our operating officers conduct periodic surprise checks in the field to make sure that their crews are in compliance with rules and instructions and they are to take remedial action where deficiencies are found to exist.

In 1975 we reduced the frequency of casualties to enginemen, trainmen and yardmen by 12.1 percent. We feel this is an especially significant improvement because in this area we have had trouble controlling accidents. They had been rising—we have now turned them around.

In addition, the severity of such accidents was less in 1975 than in the preceding years.

In some areas, except for supporting any increased research appropriation which might result from this legislation, I am otherwise opposed to those sections of H.R. 11804 that I have outlined above. I regard most of its provisions to be premature or redundant since they are comparable to subject matter already before the RFA in rulemaking.

Moreover, the effect of passage of this bill would be to subject railroads to further restrictions, further red tape, and additional costs, all merely in the name of safety rather than because they have any real relationship to actual improved safety. In my opinion, such legislation should be scrupulously avoided in times of inflation when railroads are already hard pressed to continue operating as a viable private enterprise.

[Mr. German's prepared statement and attachment follows:]

STATEMENT OF JOHN G. GERMAN, VICE PRESIDENT-ENGINEERING OF THE MISSOURI PACIFIC RAILROAD CO., THE TEXAS AND PACIFIC RAILWAY CO., CHICAGO & EASTERN ILLINOIS RAILROAD CO., MISSOURI-ILLINOIS RAILROAD CO., AND ALL SUBSIDIARIES THEREOF

I am John G. German, Vice President-Engineering of the "Missouri Pacific System," which operates 12,000 route miles of railroad in midwestern and southwestern United States. Missouri Pacific is the fourth largest rail system in the country and employs over 20,000 people. The system includes the Missouri Pacific Company, The Texas and Pacific Railway Company, the Chicago & Eastern Illinois Railroad Company, and various other related lines. My address is Room 1500, 210 North 13th Street, St. Louis, Missouri 63103. I received a Bachelor of Science degree in Mechanical Engineering from the Case Institute of Technology, Cleveland, Ohio, in 1943. My railroad career covers a period of more than 32 years, including service, prior to 1961, with the Great Northern Railway, during which time I held such positions as Assistant to the Master Mechanic, Traveling Engineer, Master Mechanic, Assistant to Chief Mechanical Officer, and Superintendent of Motive Power. In 1961 I joined the Missouri Pacific Railroad as Chief Mechanical Officer, and subsequently was appointed Assistant Vice President-Engineering, in which position I was responsible for both the Mechanical Department and the Maintenance of Way, Track, Structures, Signals and Communications Departments. In my present position as Vice President-Engineering, I continue to have complete jurisdiction over these same areas.

Throughout my railroad career I have been a member of the American Society of Mechanical Engineers, and I have been active in a number of industry committees and associations having among their functions and purposes the matter of rail safety. These organizations include various technical associations, and a number of Association of American Railroads (AAR) committees. Attached is a summary showing my various associations throughout my career.

Much of my work on the various AAR committees has been primarily devoted to rail safety. I attach particular importance to my work on the Locomotive Rules Committee, which, of course, made significant contributions in Ex Parte 243 and in subsequent liaison work with the Federal Railroad Administration (FRA) on the establishment of rules and regulations for freight cars and locomotive standards. I am presently chairman of the Mechanical Division (of the AAR), which establishes standards and specifications for construction and repair of locomotives and freight cars in interchange service. I am also a member of the Research Committee, which governs the research and development activities of the AAR; and, as indicated by the attachment, I have had substantial experience in various areas relating to the general subject here under consideration.

By reason of my background, including my participation in the various organizations mentioned, as well as the responsibilities of my prior and present railroad positions, I feel that I am well qualified to discuss matters of rail safety. Because the bills here under consideration are directed to that rail safety area, I have given them careful study.

APPROPRIATION

To the extent that this proposed legislation would contemplate an increased appropriation for research and development, that feature of the bills would have my strong support. AAR-FRA cooperative efforts in this area have already been most beneficial. For example, such efforts have brought into being testing facilities for performance of such things as crash tests and tank car tests. There is soon to be constructed a facility for accelerated service testing of track and equipment (FAST) at Pueblo. These are but a few of the examples of the type of beneficial accomplishments which will be fostered by the research appropriation included within these bills.

While I would support an increase in research appropriation, I see no justification whatsoever for the artificial restriction or limitation which proposed section 212(c) would impose on research expenditures.

With respect to the remainder of the subject matter of these bills, it is my opinion that the proposed provisions would not only do little or nothing to improve rail safety, but would actually be counter-productive. To the extent the proposals add additional unnecessary regulations and artificially restrict the railroads from efficient use of manpower, they are directly at odds with the overall purpose of holding down costs in this inflationary era. Further, they fail to recognize what to me is a simple, inescapable truth,—safety cannot be legislated. Obviously, rail management already seeks to do everything reasonably possible to insure safe operations.

FINES

Setting aside for the moment all humanitarian considerations, it is simply common sense and good business to avoid accidents and injuries because such occurrences are extremely costly. When one considers the size of personal injury judgments and the substantial property damages (to equipment, roadbed, and lading, etc.) which can result from any accident, it is evident that there already exist far more than enough incentives for taking all feasible steps to insure safety and to avoid such accidents. Increasing the fines serves no useful purpose as a deterrent to unsafe conditions. The prime deterrent is, always has been, and always will be, the high cost of personal injuries and damages and the loss of business by reason of service interruptions.

Shortly after the FRA was formed an informal system was established to permit a carrier to sit down in conference with the FRA to discuss claims. That system serves a dual purpose. First, it establishes a better understanding on the part of both the carrier and the FRA as to the nature of the complaint, the proper interpretation of the rules and what can be done to remedy unsafe conditions. Secondly, it permits the reduction of fines where the facts developed in conference indicate a compromise is in order. Occasionally, some of the complaints are incomplete or erroneous as to facts, and some are really of little significance to safety. Presently available procedures permit recognition of this fact.

Furthermore, the claims conference saves both the carrier and government vast amounts of time, effort and money in court costs. If the level of fines were to be raised, it would discourage use of the conference system. This would be the case because the carriers would then have to resort to court action to keep their already growing costs of operations from getting completely out of hand. The result would be needless litigation and related expenses which, under the present system, are avoided.

Finally, payment of any fines seriously detracts from the limited funds now available to the carriers for the improvement and maintenance of property so necessary to safety and service. Grossly increased fines would only worsen this condition.

CREW QUARTERS

This brings us to proposed Section 4 which requires quartering crews at locations where they will have an opportunity for uninterrupted rest under controlled temperature conditions at locations away from the yard. Just what is contemplated by such terms as "controlled temperature" and "away from the yard" is extremely vague.

The quartering of crews has long been a matter of negotiation between the carriers and the unions. As a result of such negotiations many practices exist throughout our system and the entire railroad industry which are considerably at variance with what is here proposed. Historically, crew quarters were built

near rail yards, which were usually not only the most handy locations, but which were frequently at a point near the heart of the town, such town in most cases having itself grown up around the railroad. Subsequently, those crew quarters have often been expanded and modernized at substantial expense to the railroads. Moreover, in some instances railroads have quite recently constructed modern crew housing facilities on rail property near their yards. By way of illustration, our own railroad, the C&E1, constructed a substantial facility at Yard Center (Chicago) Illinois in the year 1968. While it is in close proximity to rail yards, it is a modern structure with individual rooms, a recreation room with color TV, kitchen facilities, and all modern conveniences. Everything considered, I believe it must be admitted that it would be difficult to find better quarters at any figure within reason anywhere within that entire area. This is typical of similar structures on our own railroad and on other rail properties. While some might perhaps prefer to be closer to the downtown or "night life" areas, I believe any open-minded analysis would conclude that, everything considered, these locations best serve the purpose, which is to provide housing and rest. Railroads all over the country have sizable investments in such crew quarters. In many instances such presently used locations are non-railroad owned, and the proposed legislation would hence, have an adverse impact on such privately owned motels, etc. To propose legislation rendering them unusable would be grossly unwarranted.

HOUS OF SERVICE

The next proposal would eliminate the present exemption of wreck or relief train crews from the Hours of Service Act provisions except under certain described conditions. Obviously, the wording of the proposed section would give rise to numerous controversies as to when an "actual emergency exists," or ceases to exist, or under what circumstances the work of a given crew may be said to be "related" to such emergency, etc. Moreover, to the extent that additional crews would have to be provided under the proposed legislation, this would entail an unnecessary added burden to already hard-pressed railroads.

In my opinion the proponents of this provision are unjustified in so much as raising this subject. Even though not required to do so under the present law, our company has made every effort to honor the Hours of Service provisions even for wreck or relief trains. Generally, we are now able to relieve such crews at the end of 12 hours of service. However, there may be an occasional situation when, because of terrain problems, severe storms, washouts, etc., it would be extremely difficult to bring in another crew in order to relieve the crew of a wreck train at the expiration of 12 hours. Sometimes work crews become engaged in plugging a washout and cannot "drop the ball" to permit substituting a new crew.

In short, while I believe it to be relatively rare, at least on our lines, for such crews to work beyond 12 hours, I would consider it most unreasonable for the railroads to be required by legislative enactment to eliminate even that rare situation, especially when to do so in a given instance may be tremendously burdensome. Needless to say, I do not consider the occasional emergency use of such a crew beyond 12 hours to have any relationship to safety.

FLAGGING

We come next to the Section 6 proposal with respect to changes in flagging rules. This is one of the aspects of this legislation which has already been considered by the FRA in a rulemaking proceeding. The operation of trains is extremely complex and does not lend itself to legislative prescription. To pass a law which would so rigidly restrict rail operations would hamper efficiency while not enhancing safety in any way. In my experience I have found that train accidents are not caused by the absence of a flagging rule. The industry has had flagging rules in its books for well over a century. Such accidents as are caused by reason of lack of flagging do not result from the absence of proper rules. They are caused by a failure to comply with existing rules. Legislation will not change this.

BLUE FLAG RULE

What has been said above also applies in general to the proposed Section 6 blue flag protection rule change. Such general provisions have long been an important part of the Uniform Code of Operating Rules. This subject has also

been involved in proposed rulemaking by the FRA within the past year. The proposal under consideration by this committee is without benefit of any of the data included in the discussions and petitions already presented to the FRA. In my estimation, the proposed rule is in no way preferable to existing rules and instructions. Furthermore, it is obvious that there is no justification for using a blue flag when performing an air brake test or when a car is advanced through a repair facility by the repairmen themselves. Again, to cast this rule in the concrete of legislation is in my opinion unrealistic. If anything, it would impede changes and adoption of other methods of protection which could well prove superior. In my experience, when accidents have occurred in what might be described as a "blue flag" situation, they have been caused by failure on the part of the crew member to observe existing blue flag rules rather than by the absence of such rules. This situation would in no way be changed by substituting legislation for the existing rules.

MARKERS

Proposed Section 5 would have the effect of requiring "highly visible markers which are lighted during periods of darkness" on the rear car of all trains. This subject has also been before the FRA in a proposed rulemaking proceeding. Until such proceeding has been completed, I think it is premature to consider legislation of this kind, particularly when that which is proposed is so vague in nature.

During my career I have observed the development of various types of markers, including red flags, painted boards, reflective materials, oil lamps, and electric lamps in various numbers and combinations. On our railroad we are presently equipping cabooses with two electrically lighted markers on each end, and in addition we are applying strips of silver reflective scotchlight material, all for the purpose of assuring that the caboose will be highly visible to any approaching train. We feel that our present method of marking is effective in preventing accidents involving one train overtaking another in non-signal territory. In signalled territory, use of electric markers should not be required if the following trains control their speed in accordance with the signals and the existing operating rules. In my opinion, the proposal under consideration is premature, potentially expensive, and without promise of any real safety benefit.

FRA REGIONS

The last aspect of the proposed legislation would divide the FRA into 10 regional offices. Presently, the FRA has 8 such offices and it is my understanding that there are plans to reduce the number to 5. I strongly believe that increasing the number of such offices would not enhance safety in any respect. Rather, it will serve to add unnecessary jobs and expenses, it would compound clerical work, and would cause confusion to railroads which are exposed to more than one regional office. To illustrate, our 12,000-mile system in 12 states is already subject to inspection by Atlanta, Fort Worth, Kansas City, and Chicago regional offices. We certainly do not need another region. For uniformity of inspection practices and in order to increase the efficiency of the FRA's operation, I strongly recommend that the districts be reduced from 8 to 5, rather than increased from 8 to 10. However, I do support the centralized control of regional office activities by the Administrator of Safety.

EXAMPLES OF MISSOURI PACIFIC SAFETY ACTIVITIES

The Missouri Pacific System has made numerous advances in the area of safety and it has done so—not because of rules or laws—but simply because of its strong conviction that to operate safely is to operate efficiently and that safe operations are simply a matter of good business in order to minimize the extremely heavy costs which inevitably accompany accidents of any kind.

In the past 15 years we have made every effort to improve our physical plant and equipment by judicious use of capital and maintenance monies. It is our firm belief that a physically strong railroad cannot help but be a safe railroad. One of our foremost accomplishments in this area has been the extensive replacement of conventional and obsolete rail with new welded rail: an average of 280 miles of continuous welded rail (CWR) has been added each year during the past 5 years. Our goal for 1976 is an additional 428 miles of such rail. We have averaged 1,167,000 cross tie renewals annually during the past 5 years, and our goal for 1976 is 1,200,000. Our system has installed 1,461,000 cubic yards of ballast

during each of the past 5 years, and our goal for 1976 is 1,542,000 cubic yards, which will result in resurfacing 3,500 miles of the 12,000-mile system in this year alone.

Missouri Pacific has rebuilt or renewed virtually all of its locomotive and car shop facilities so that they now employ the latest techniques in material handling, machinery and inspection facilities. This permits our men to do quality work in a safe manner. One evidence of the effectiveness of Missouri Pacific's program is that its bad order equipment ratio is much lower than the industry average. In addition, we insist that all shop areas be kept in a clean and orderly condition, which again contributes to avoidance of accidents.

Over the past 15 years we have had a vigorous program of replacing obsolete freight cars and locomotives with equipment which better meets today's demands and which also offers greatly increased capacities. Missouri Pacific was one of the first railroads to press for roller bearing journals on all new freight cars. We have extended the use of automatic block signals and centralized traffic control over an additional 1,400 miles of track, bringing our total of signalled track to 5,600 miles. In addition, by the end of this year we will have installed 104 wayside scanners to detect overheated journal bearings and dragging equipment so that our principal high-density freight routes will have this protection every 30 to 35 miles.

It must be recognized, however, that the finest physical plant may still not be the safest plant unless there is also a safety plan endorsed and supported by top management, supervisory personnel and all other employees. As I have stated, it is my firm belief that safety cannot be legislated. Employees must be trained and motivated to perform in a safe manner.

Missouri Pacific has established a training school for locomotive engineer trainees at North Little Rock, Arkansas. At this school trainees receive two weeks of instruction on air brakes, diesel engines, electrical control gear and operating rules, after which they return to their own seniority districts, where each is assigned to a hand-picked experienced locomotive engineer for a period of 5½ months. Under the tutoring of such locomotive engineer and through periodic road checks by the Road Foremen of Engines, they are permitted to operate road trains in order to gain the experience and judgment which is necessary to their craft. At the end of this period, they return to the North Little Rock school for another two weeks of training, at which time they are given further instruction and final examinations. Upon passing the examinations, they are returned to their districts to become full-fledged engineers. However, training and supervision does not cease at that point. A Road Foreman continues to closely monitor their progress and performance.

We also have a training school for brakemen-switchmen at Fort Worth, Texas. The instruction provided at this school involves a one-week program covering rules and safety with emphasis upon correct operating procedures. Thereafter, each trainee is returned to his seniority district for an additional three weeks of on-the-job training.

Our safety programs are not limited to operating employees. We maintain district, division, and subdivision safety committees comprised of officer and union representatives of the crafts and departments located in a given area. These committees meet at least once a month. The top district operating officers and Assistant General Superintendent of Rules and Safety attend many such meetings. The stated purpose of such programs is to reduce injuries, accidents, loss and damage, and to increase knowledge of and compliance with governing rules, as well as to bring about cooperation, communication, and understanding between labor and management. Committee members, especially the union representatives, are encouraged to solicit from their membership recommendations and suggestions to improve compliance with safety rules, to improve morale and working conditions, etc. Each recommendation or suggestion receives committee action, and, if accepted, steps are taken to implement the suggestion as promptly as possible. If a suggestion is found not acceptable, an explanation is made to the one who furnished the recommendation. A number of very beneficial programs have resulted from the activities of these committees.

Another very effective training tool which we know has contributed to improved safety is our audio-visual education program. This involves the use of portable TV equipment and more than 30 video tapes, each of which covers from 10 to 20 minutes, dealing directly with matters of rail safety. These are not commercially prepared tapes. They were produced, directed, and edited by Missouri Pacific's Operating Department. The people and scenes portrayed are our own.

We find that this is most helpful in creating interest and in getting across the safety messages, because the employees to whom these tapes are regularly shown can readily identify with the subject matter which they are viewing. In addition to the above activities, we insist that operating officers conduct surprise field checks to insure that their crews are in compliance with the rules and instructions and to take remedial action where deficiencies are found to exist.

The areas which I have briefly mentioned are merely some of the examples of on-going safety-related programs of the Missouri Pacific System.

SUMMARY

Thus, to summarize, except for supporting any increased research appropriation which might result from this legislation, I am otherwise opposed to these bills. I regard most of their provisions to be premature or redundant, since they are comparable to subject matter already before the FRA in rulemaking proceedings. Moreover, the effect of passage of these bills would be to subject railroads to further restrictions, further "red tape," and additional costs, all merely in the name of "safety" rather than because they have any real relationship to actual improved safety. In my opinion, such legislation should be scrupulously avoided in times of inflation when railroads are already hard pressed to continue operating as viable private enterprises.



Mr. ROONEY. Thank you, Mr. German.

I see by your testimony today, Mr. German, that you take the same view as other industries with respect to fines. Putting minimum fines aside for a moment, would not an increase in the maximum give FRA a better tool to encourage compliance by the railroads with poor safety records?

Mr. GERMAN. Mr. Chairman, I would have honestly to say no. My reason for it is the fact that, as Dr. Harris pointed out yesterday, a recent survey of accident statistics clearly indicates that a rigid enforcement of the existing rules would not materially decrease the accidents we are talking about. I think it obvious that the FRA and the railroads have to address themselves more to the causes of accidents than to just keep on promulgating rules and specifications, and so forth, that are not getting the job done. To that end the AAR research staff is going to address itself and we as railroaders are going to do it also.

Mr. ROONEY. The FRA has the rules and regulations and the laws, but do you think it rigidly enforces the regulations or do you think it is lax?

Mr. GERMAN. We have had experience with the ICC and, in more recent years, with the FRA. The FRA has stepped up its enforcement, supervision and field work. I think one thing that is very effective which has not been brought out to date is the fact that the FRA man doesn't just come and snoop around any more as he used to. He comes and talks to our people and rubs their noses into areas that need attention. I think this has considerable impact. I know when I served as an acting roundhouse foreman, when a Federal man came to town I sat up and took notice.

Mr. ROONEY. What did you do the balance of the year?

Mr. GERMAN. Well, I think my record speaks for itself, Mr. Chairman. I take a back seat to no one on trying to promote safety.

Mr. ROONEY. You know about the pending legislation with respect to DOT regulations being turned over to the Department of Labor. What do you think about that idea?

Mr. GERMAN. Frankly, I don't like it. I think the FRA has the expertise to handle this and I think it takes a while to generate an organization that becomes effective. I see signs that the FRA is becoming more effective. Certainly I don't know of anybody in Washington that has the expertise but them.

Mr. ROONEY. You know the accident that occurred in Decatur, Ill., where seven people were killed. What do you think about the idea of removing these employees to an area farther away from the area where the accident occurred?

Mr. GERMAN. Decatur was indeed unfortunate and tragic, but in all the history of railroading I don't know of any one single accident in relation to crew quarters that could even begin to compare to it. I state to you it is very unusual.

Furthermore, in view of the steps that have been taken by the railroads and the FRA to control switching movements and to contain hazardous materials in the cars and the work we are presently doing on tank care safety, we can't help but improve the entire situation. I hope and pray we will never have another situation like Decatur.

I might say, too, that we get into a measurement of how safe is safe. I sent several of my men to the Oklahoma safety school sponsored by DOT. Two of them in the lobby of the hotel one evening after supper were nearly shot in the process of a fray that ended in taking two lives. Where are you safe? Some of these dormitories are in highly industrialized areas. It would take you a long time to get out to where you could get decent lodging and food and come back in again.

Mr. ROONEY. Do you carry a large volume of hazardous materials?

Mr. GERMAN. Yes, relatively speaking. I believe we probably handle more hazardous materials than any other railroad in the United States. It amounts to about 9 percent of our total traffic.

Mr. ROONEY. When you have a large shipment of hazardous materials what are your procedures with respect to the local communities you travel through? Do you give them advance notice?

Mr. GERMAN. No, sir.

Mr. ROONEY. Don't you think it would be a good idea for the firefighters to be aware of the fact that hazardous materials are going to come through their downtown area?

Mr. GERMAN. Mr. Rooney, we have made contact with fire departments of all cities along our lines where we handle this type of material that are basically 5,000 population and more because they are fire departments equipped to do this.

Mr. ROONEY. Then you do it?

Mr. GERMAN. Yes. I didn't quite understand your question. Yes, we do it. We have had contact with these people and we have given them information to assist them in handling such fires or explosions or whatever may happen.

Mr. ROONEY. How do you contact the local municipalities?

Mr. GERMAN. Our police department makes the contact for us and forwards the information. Also, at the request of certain citizens, some of our people who have more expertise in this area have sat down and talked with them about these different situations.

Mr. ROONEY. Mr. Skubitz.

Mr. SKUBITZ. Thank you, Mr. Chairman.

Mr. GERMAN, as a former employee of the Missouri-Pacific I welcome you to this committee.

Mr. GERMAN. Thank you, sir.

Mr. SKUBITZ. You spoke of 9 percent hazardous materials being hauled over your line. What type of hazardous materials?

Mr. GERMAN. It is flammable compressed gases, propane and things like that.

Mr. SKUBITZ. Do you haul any nuclear material?

Mr. GERMAN. Yes, on occasion we have handled casks for the U.S. Navy of radioactive waste fuel elements. Mr. Skubitz, it is spent fuel. I am not an atomic expert. My understanding is if it ever gets out of the casks it is bad. It won't cause an explosion, but it will contaminate an area for a considerable period of time, years.

Mr. SKUBITZ. It is the type whose halflife could go for 10,000 or 20,000 years?

Mr. GERMAN. I don't think it would go that long, but I understand it would be 5 years or more, depending on its state at the time.

Mr. SKUBITZ. What sort of containers are used to haul this material?

Mr. GERMAN. They are in special casks that are made up to steel forgings and castings, lined with lead, and have outer jackets on them.

Mr. SKUBITZ. Can you tell me what route this covers? Where is it picked up and where is it delivered?

Mr. GERMAN. It mainly comes from the east coast of the United States.

Mr. SKUBITZ. Where on the east coast?

Mr. GERMAN. Norfolk area, and so forth. It goes to the Idaho burial ground.

Mr. SKUBITZ. Most of it belongs to the Navy, you say?

Mr. GERMAN. I understand so; yes, sir.

Mr. SKUBITZ. Do you know whether these containers can withstand terrific impact of a collision?

Mr. GERMAN. These are the containers that Dr. Harris was talking about yesterday, that are supposed to be able to withstand the penetrating force of a 6-inch steel core at some 35 miles an hour, which would be in effect about the same as if a rail broke and came up through the belly of the car.

Mr. SKUBITZ. I didn't know he was using them yet. I thought they were just going to test them out at the testing facility this summer.

Mr. GERMAN. Excuse me, sir. There are two kinds of cask. One is the type that the Navy now has in operation, and the other, as I understand it, is one that is proposed to handle spent fuel from power-plants, which is a larger cask but the same level of material.

Mr. SKUBITZ. In the case of an accident your railroad would be in serious difficulty because of damage actions, would it not?

Mr. GERMAN. Let me say if one of those casks was ever penetrated and the material was released, the area would be seriously contaminated for a long period of time. In fact, it would wipe out a particular line for usage for a number of years.

Mr. SKUBITZ. It could also wipe out a community nearby if it got into the air, couldn't it?

Mr. GERMAN. I understand it could be quite serious.

Mr. SKUBITZ. I want to commend you on the program that you have worked out, Mr. German, with the city fire departments along your line. One problem that comes to my mind, though, is this: In case there was an accident, how do you identify which cars have hazardous materials in them?

Mr. GERMAN. Let me explain briefly how we do handle this, if I may, Mr. Chairman. I need to refer to some notes so I give you the exact information.

The train conductor has in his possession a waybill for each car. He has a computer-generated train list that shows the car numbers and the commodities he has, and he has a work order that tells him what to do with setting out and picking up these cars on the line of road.

In addition, he has what we call the orange book, which we developed for our use on the Missouri-Pacific. This orange book details the type of hazardous materials that are most commonly carried

in railroad cars on our line. The waybill is initiated by the shipper and it identifies the commodity by transportation commodity code called the stick number. The detailed train list identifies all cars in the train and their relative location as well as those identified as dangerous.

If an accident or incident occurs, the conductor will take his documents and he tries to locate the position of the cars in the train and the car number, if at all possible. If unable, he will communicate by the quickest possible means available to the dispatcher. He will say, "I have a derailment in the 15th to 18th car ahead of the caboose." They in turn notify the local officer in the operational control center in St. Louis. The operation control officer through our computer system can request an advance consist of the train so he is looking at the same information available to the conductor. He will make an information trace on the cars that are suspected and ascertain the STCC (stick) number which is carried in a publication put out by the Bureau of Explosives. I believe the most recent one was January 1, 1975. This is shown in those papers attached. It is called Standard Transportation Commodity Code, Hazardous Materials.

He will cross reference the stick number to the stick manual to get the proper chemical shipping name of the commodity of each suspected car. Then he can refer to our orange book and also to some other larger volumes that he has on hand, Dangerous Properties of Industrial Material and the Chemical Safety Slide Rule.

These steps, three, four, five and six, take only about 4 or 5 minutes all told.

Now, they know the location of the cars and the commodities that are involved. This responsible officer will then notify the local personnel of the proper emergency response to make, to get the word to the chief dispatcher, to the local agent and other officers, to the fire departments and say this is whatever the material might happen to be. It might be group 6, liquefied petroleum gases. They could look in the orange book and find out that these highly flammable hydrocarbon gases are known as LPG and how they are transported, their toxicity, the activity of them, what to do about leaks and spills and what to do about firefighting.

"Firefighting. Use every available means to shut off the flow of the gas." If the tank is ruptured, obviously they can't do that. Then they use water spray, carbon dioxide, or dry chemical to extinguish the fire. Also they spray water on tank cars of LPG which are involved because one may torch against another. They try to cool it down to keep it from getting to the explosion point.

We have found this system to be very effective.

In addition, we notify additional parties as necessary. We call upon Chemtrek, the commodity shipper, for all the expertise that we can because, gentlemen, I say to you no one fire department can have all of this expertise. It depends upon the chemical, the location, and the exact circumstances at the time of the accident.

Mr. ROONEY. I would like to commend you, Mr. German.

Mr. SKUBITZ. I commend them, too, on the outstanding job they have done.

Let's go back to the hauling of nuclear wastes. What is the average speed that you haul cars down the track?

Mr. GERMAN. Are you speaking of just nuclear wastes?

Mr. SKUBITZ. It is part of the whole complex.

Mr. GERMAN. If we handle a car of nuclear wastes, we limit it to 35 miles an hour, sir.

Mr. SKUBITZ. Do the men on the train know this is being hauled or not?

Mr. GERMAN. Yes, sir. There is special information on the waybill. We have an officer accompany it. We take every precaution we can to give them safe handling.

Mr. SKUBITZ. Do you have any sort of assurance from the Government that in the event of an accident, your company is financially protected in any way?

Mr. GERMAN. That is out of my area of expertise. I am sorry I can't answer that.

Mr. SKUBITZ. You understand the MKT has refused to haul nuclear waste material. I think theirs is currently action before the Interstate Commerce Commission to try to force them to haul it.

Mr. GERMAN. I understand that, too, Congressman. I think they must feel definitely if they had such an accident they would be wiped out. I can't tell you if we have any more assurance that we would not be wiped out, too.

Mr. SKUBITZ. I have an idea you might be because I think we passed the Price-Anderson bill in which the Government provides up to \$500 million worth of protection in case of an accident. I think this indicates the seriousness nature of the damage that would result if a nuclear plant went under or, in case of a carload of nuclear waste getting into the air stream.

Mr. GERMAN, I am sure you know I wrote the president of your company a letter about the speed to which you have limited passenger trains that travel over your track.

Mr. GERMAN. I understand you have written that letter. I expect you will shortly receive an answer from Mr. Lloyd, who has just returned. We reduced the speed of passenger trains in the late sixties because we were having trouble maintaining our track in certain areas. We felt that for safety of operation and for comfortable riding it would make more sense to get the speed down. We narrowed it down to the same as our freight train speed. When we are talking about speed I am talking about the maximum permissible speed across a certain sector of track. I am not talking about average speed.

Mr. SKUBITZ. How fast do you operate your freight trains, the top speed and the average speed for freight trains?

Mr. GERMAN. For example, between St. Louis and Kansas City, which is the route of the National Limited, our maximum freight train speed is 60 and our maximum passenger train speed is 60.

Mr. SKUBITZ. Why can't a passenger train travel at, say, 10 to 15 miles per hour faster than a freight train? You heard Mr. Reistrup's testimony.

Mr. GERMAN. Yes; I did. This area has a large number of curves. Just a few years ago we experienced some derailments in this high-

curved track area that gave us grave cause for concern. We have done a lot of work to renew ties and ballast and re-lay this track. The heavy freight trains take their toll, as you might suspect, on track structure. Even after we got our track structure up, we found that accelerating and decelerating passenger trains, to stay within the limitation of the curves, was uncomfortable for the passengers, and the excess braking action of the passenger train in acceleration or deceleration areas was hard on the track.

Mr. SKUBITZ. I wasn't aware the Missouri-Pacific was interested in the comfort of the passengers, but I am glad to hear that. I would think that Amtrak should make the decision whether or not they can travel 15 miles an hour faster safely.

Mr. GERMAN. Frankly, Congressman, I feel that we have a very important role in the safety of that passenger train, whether operated by Amtrak or anybody else, because we are the ones they come back against when we have track-caused accidents. We are the ones who get the bad publicity when anything happens.

Mr. SKUBITZ. I was under the impression, if I understood Mr. Reistrup—he is an old railroad man himself—they could easily and safely travel 10 to 15 miles an hour faster than a freight train without doing damage to the track.

Mr. GERMAN. I am sure in certain areas where there is a lot of tangent track and they don't have the restrictions we have in this particular area you could possibly go to 10 or 15 miles faster. I say to you that in this particular area we do not feel it is proper, that the maintenance is excessive, and the chance of accident rises considerably.

Mr. SKUBITZ. My own feeling is that you have done an outstanding job and I think the Missouri-Pacific has done an outstanding job in the maintenance of its track and equipment.

Mr. GERMAN. Thank you.

Mr. SKUBITZ. I think a lot of that is due to your personal work, Mr. German.

Mr. GERMAN. I appreciate that.

Mr. SKUBITZ. In turn, I think we have a responsibility. When we are giving out money by the buckets to Amtrak we have a responsibility to see that the railroads also cooperate with Amtrak in an effort to make the trains safe and provide for travel at a reasonable speed. My own feeling is that if something isn't done, if Amtrak should ask for legislation, and if it can be passed to get DOT to require you folks to do something, I would be in favor of the legislation.

That is all, Mr. Chairman.

Mr. ROONEY. Thank you, Mr. German.

I, too, would like to commend your company and to commend you for your testimony here today.

I might say you also have excellent representation in Washington in Mrs. Judy Durant.

Mr. GERMAN. I concur in that, too.

Mr. ROONEY. Our next and last witness today will be Mr. James R. Snyder, chairman of the legislative committee, Railway Labor Executives Association, Washington, D.C.

Mr. Snyder, I would appreciate very much if you would introduce your colleagues for the benefit of the record.

STATEMENT OF JAMES R. SNYDER, NATIONAL LEGISLATIVE DIRECTOR, UNITED TRANSPORTATION UNION, AND CHAIRMAN, SAFETY COMMITTEE, RAILWAY LABOR EXECUTIVES' ASSOCIATION, ACCOMPANIED BY W. ROY WILSON, ALTERNATE NATIONAL LEGISLATIVE DIRECTOR, UTU; MARSHALL D. SAGE, LEGISLATIVE RESEARCH, UTU; AND LARRY MANN, COUNSEL, RLEA

Mr. SNYDER. Thank you, Mr. Chairman.

My name, as you stated, is J. R. Snyder. I am the national legislative director for the United Transportation Union and chairman of the safety committee of the Railway Labor Executives' Association. Appearing here with me it is my pleasure to have on my left Mr. W. Roy Wilson, the alternate legislative director to the UTU, and Mr. Marshall Sage, research director for the UTU; and on my right Mr. Larry Mann, RLEA's distinguished counsel in Washington, D.C.

We are appearing today on behalf of the RLEA and its constituent member organizations which are:

- 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 Railway Carmen of the United States and Canada.
- Brotherhood of Sleeping Car Porters.
- Hotel & Restaurant Employees and Bartenders International Union.
- International Association of Machinists & Aerospace Workers.
- International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers & Helpers.
- International Brotherhood of Electrical Workers.
- International Brotherhood of Firemen & Oilers.
- International Organization of Masters, Mates, & 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.

Together these unions represent approximately 80 percent of the railroad workers in this country. We appreciate this opportunity to testify on H.R. 11804, the Federal Railroad Safety Authorization Act of 1976.

In addition to the rail laborers group listed here, I would like to point out, not listed, that the National AFL-CIO wholeheartedly support this legislation also.

As you know, each time your committee has conducted hearings on authorizations to implement the Federal Railroad Safety Act of 1970, you found tragic railroad safety conditions existing in this country. In 1974 your committee stated:

The weight of evidence gathered in testimony before the subcommittee indicated the Federal Railroad Administration simply was not living up to either

the spirit of the Federal Railroad Safety Act of 1970, or, 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." (H. Rep. No. 93-1083, 93d Congress, 2d session, 6 (1974).)

In 1975 your committee in effect reiterated the same problem.

The Congress enacted the Federal Railroad Safety Act of 1970 in an attempt to promote safety in all areas of railroad operations. It was enacted at a time when rail accidents had doubled over the previous decade. It was hoped that the comprehensive scheme of Federal regulation coupled with Federal-State enforcement activities would halt the increase in rail accidents. Unfortunately, this has not been the case.

Each time the committee has held hearings on new authorizations to implement the Federal Railroad Safety Act of 1970 it has hoped to see a reversal of the increasing rate of rail accidents. Each time, the committee has been disappointed, and this year has been no exception.

The committee feels that these statistics are telling the story that the Federal Railroad Administration (FRA) is not doing its job adequately. The committee also feels that a major reason for this problem is that the FRA has consistently failed to avail itself of the safety inspectors and funds authorized by this committee. The result has been ever-increasing accidents and injuries on the railroads.

The committee feels it is obvious, therefore, that the major emphasis of this legislation must be to obtain better compliance with existing regulations. Since the existing regulations cover most of the accidents the answer is for FRA to hire a sufficient number of inspectors to help assure better inspection, better compliance, and ultimately improved safety on our railroads." (H. Rept. No. 94-240, 94th Cong. 1st sess. 4-5 (1975).)

I am sad to say that nothing has changed. Things just seem to be getting worse and worse.

The prepared testimony of the FRA Administration before the Appropriations Subcommittee on Transportation and Related Agencies on February 19, 1976, clearly demonstrates that FRA's major efforts and endeavors are not in safety. The Administrator stated:

I would like to take a few minutes of the committee's time to point out some of the major efforts and endeavors in which we are now and have been involved since our appearance before you last year.

Among our most significant accomplishments during the past 12 months have been the following:

- Recruitment of key managerial personnel for top FRA positions.

- Completion of Equal Employment Opportunity Awareness Training for all senior level managers with resulting positive impact on specific EEO commitments (sic).

- Redirection of FRA's R&D program to near-term payoff to be more responsive to industry problems and generate industry confidence and cooperation (e.g., FAST, AOI, Vertical Shaker).

- Issuance of revised and more flexible safety regulations for encouraging State participation in the rail safety enforcement program, and completion of first grant agreements with nine States under this program.

- Substantial improvement in net operating income of the Alaska Railroad, permitting major contribution to restoration of deteriorated facilities.

Completion of first management review of the Alaska Railroad since formation of DOT and establishment of an FRA "Board of Directors" to provide policy guidance to the General Manager.

Issuance of implementing regulations, program manual and internal procedures for Title IV Federal/State rail subsidy program under RRA.

Coordination of various staffing activities for USRA/ConRail FSP development.

Key participant in DOT's Alton Locks and Dam analysis, the first such study of effects of public investments in water and rail transportation.

The results of FRA in downplaying safety are very telling.

The number of train accidents has risen 4 straight years. There were 10,419 train accidents in 1974, an increase of about 10 percent from 1973. The FRA Administrator testified on February 19, 1976, that preliminary figures for 1975 again show an increase in train accidents. By comparison, there were 4,016 accidents in 1960.

The number of employees injured while on duty in all accidents in 1974 jumped to 15,220. Preliminary 1975 figures are shocking and show that the injuries from accidents and incidents have tripled, which is the fifth straight year of increases in injuries. In 1975, the FRA revised its reporting of accidents and injuries which is described in exhibit A attached to this statement. This accounts for some of the increase in the injuries reported. The preliminary figures show a slight reduction in the number of deaths of employees in 1975 compared with 1974. These statistics, of course, do not include the millions of dollars in property damage losses. Even though the major disasters get the headlines, the effect on the thousands of persons injured or killed in railroad accidents is no less real and devastating to them and their families.

Your committee helped enact the necessary safety laws to create safe conditions. Yes, the unacceptable safety record has not been abated. We submit the case for increase in accidents, injuries, and deaths is the lack of adequate enforcement by the FRA. The railroads know that FRA historically has not administered, and is not going to vigorously administer and enforce, the safety laws, and the result has been tragic. There is very little of a positive nature that can be said about FRA's handling of railroad safety in this country. We feel that the FRA is not capable of responding to the needs of improving safety. RLEA urges your assistance in doing something to help curb this situation.

We have explained to your committee on many occasions that poor enforcement of the laws by FRA is a major cause of the railroad safety crisis. We attribute the poor enforcement to constant reorganizations within FRA—they are the most reorganized group I have ever run into, Mr. Chairman—improper assignment of personnel, insufficient numbers of inspectors, restrictions on inspectors, and stress being placed on activities other than safety. Since we have spelled these problems out in detail previously, we respectfully refer you to that testimony for an in-depth analysis.

However, I would like to point out briefly some additional statistics and matters which may be of interest to you. As a result of a reorganization in FRA in 1974, safety appliance inspectors were transferred to other duties relating to operating practices and were prohibited from making railroad equipment inspections. Their duties were transferred to the locomotive inspectors. As a result, there are now only 78 inspectors throughout the United States responsible for inspecting all cars and locomotives for all defects. Based upon last year's figures, there were approximately 1.7 million freight cars, 34,000 locomotives, and 6,800 passenger cars for inspection by the 78 inspectors. We suggest that is an impossible task. The safety violations continue to mount each year.

During 1975, the freight cars inspected for freight car standards defects were 25.9 percent defective. The percentage with safety appliance defects was 13 percent defective, the highest percentage in more than 18 years. One of the most important facts is that the number of cars and locomotives inspected have been reduced drastically over the last few years.

FRA statistics show that in calendar year 1973, only 406,336 inspections were made; and in 1974, the lowest ever—276,794. The number of locomotives inspected during this time decreased from 73,111 in 1973 to 34,890 units in 1974, and we are advised that only 29,328 units were inspected in 1975. Of the locomotives inspected in fiscal year 1975, 17.7 percent had defects, which is the highest percentage found defective in over 30 years.

I will now direct my attention to the specific provisions of H.R. 11804. RLEA supports completely the provisions contained in the proposed legislation. The amendments to the safety laws contained in H.R. 11804 are long overdue and will go far in improving safety.

Section 2 of the bill contains virtually the same provisions as passed by Congress last year. We support the \$35 million authorization as set forth in section 2. However, if the committee feels a greater sum is necessary for improving safety enforcement, RLEA would support such an increase.

Section 3 is an important section that rail labor has sought for a number of years. This would increase the penalties under the various safety laws by increasing the minimum penalty to \$500 for each violation and the maximum to \$5,000. This may be opposed by the carriers, but as a practical matter most violations are compromised under the Federal Claims Collection Act anyway. The Hours of Service Act and the hazardous materials law are not affected by these amendments.

Section 4 requires sleeping quarters provided employees will allow the employee to receive uninterrupted rest in rooms with controlled temperatures. In addition, the said lodging shall be located away from the yards where switching or humping is performed. This need for adequate rest for crews is a critical problem. The railroads generally ignore the matter, and FRA has done nothing to correct it. An example

of FRA's lack of concern is evidenced by a letter dated May 15, 1975, from R. H. Wright, the Acting Associate Administrator for Safety, which is attached to this statement as exhibit B.

The problem of employee safety in railroad sleeping quarters was sadly highlighted on July 19, 1974, when a railroad car carrying propane exploded in Norfolk and Western Railroad's yard in Decatur, Ill. That disaster killed 7 railworkers and injured 130 others. The explosion completely demolished the bunkhouse and restaurant located in the middle of the yard where many of the employees were either sleeping or relaxing. Similar accidents have occurred at East St. Louis, Ill., and Houston, Tex.

The constant heavy noise generated by switching and humping operations makes it very difficult and sometimes impossible for employees to obtain necessary rest which is required by law. There is no question of the correlation between employee fatigue and accidents. Uninterrupted rest with noise levels low enough to allow undisturbed sleep and healthful room temperatures cannot be obtained unless the lodging facility is away from the railroad yard and attendant noises.

The railway brotherhoods filed a petition with FRA in August 1974, to require all sleeping quarters to be located at least 1 miles away from yards when switching and humping occurs. The FRA has received comments on the petition, but typically no rulemaking has resulted.

Section 5 is basically clarifying language in the hours of service law for crews working on wreck trains. It provides that such hours of work are exempt from the law only during the period of time when an emergency exists and until the track is cleared and open for traffic. However, in no event shall a crewmember work in excess of 16 consecutive hours during any 24-hour period. Several lawsuits have established that exemption for wreck crews is applicable only if an emergency actually exists and their work is related to it. This amendment goes a little further to eliminate abuses practiced by some railroads which continue to work the crews at a wreck site for many days even though the main track has been cleared.

The said railroads contend that so long as the crew is clearing up a wreck, the law is not applicable. The FRA has chosen not to contest the carriers on this issue. Certainly Congress could not have intended such an interpretation.

Section 6 provides for a uniform set of standards for flag protection against following the opposing trains. This is known generally in the railroad industry as "Rule 99." There are many variations of this rule practiced throughout the country, and on many railroads no flagging rule is in effect. Because of the critical need to do something to decrease the number of collisions which occur, the flag protection should be imposed nationwide. The reliance by railroads on block signals, train orders, bulletin instructions, radio communications, and other nonflagging protection to reduce collisions is misplaced. There

are numerous documented instances where failures in the above modes have caused collisions and could have been prevented by proper flagging.

On January 10, 1975, the CRU, now merged into Railway Labor Executives' Association, filed a petition with FRA requesting a flagging rule similar to that contained in section 6 of H.R. 11804. Some States also impose similar flagging requirements. No action has been taken by FRA on the pending petition. In view of FRA's inaction and apparent lack of concern, RLEA feels that it is appropriate for Congress to enact the standards into law.

The part of sections 6 which adds subsection (h) to section 202 of the Federal Railroad Safety Act of 1970, require blue signals, locks and derails in yards under certain conditions. Many deaths and injuries result because of failure of railroads to take adequate safety precautions to protect employees engaged in the inspection, repair, and servicing of rolling stock. On other railroads there is widespread non-compliance of the rules. Practice has shown that the way to achieve adequate protection is to require that switches be lined against movement to the track involved, and to apply locks to the devices controlling the switches. Also blue signals and derails should be placed at ends of the track by the employee working on the particular track. This section of the bill incorporates such needed requirements.

This is another rule subject to an FRA petition filed on behalf of the railroad workers. FRA has not issued a rule covering this subject matter.

Section 6 also adds a new subsection (i) to section 202 of the Safety Act which requires highly visible markers should be lighted in darkness and during inclement weather.

The problem, of course, is that in many cases, it is impossible to determine whether a train is on the track ahead, or is the rear car of a train. In addition, on long trains particularly, the crew on the head end cannot properly maintain surveillance over the train for defects unless the crew is able to determine the location of the caboose. An improperly marked train was partially responsible for the disastrous commuter train collision near Chicago on the Illinois Central Gulf Railroad on October 30, 1972. The National Transportation Safety Board investigation concluded that the lack of train car end visibility may have contributed to the crash or its severity. The collision prompted the Illinois Department of Transportation to investigate and test the various car marking alternatives. I am attaching a copy of the technical report for inclusion in the hearings record as exhibit C.

Since the extra exhibit we have here relates to markers, I think at this time an investigation made by the National Transportation Safety Board should be included in the record here as exhibit D.

Mr. ROONEY. Without objection.

[The exhibits referred to follow:]

Exhibit A

Traffic Accidents

1974 traffic accident figures have been made comparable with 1975 by eliminating accidents in the \$750-1,749 damage range.

Employee Casualties

Employee casualties now are reportable under the revised rules: To be consistent with OSHA reporting:

- (1) The death of any person from an injury within 365 days of the accident/incident.
- (2) The death of a railroad employee from occupational illness within 365 days after the occupational illness was diagnosed by a physician.
- (3) Injury to a railroad employee that requires medical treatment or results in restriction of work or motion for one or more workdays, one or more lost workdays, termination of employment, transfer to another job, or loss of consciousness; or
- (4) Occupational illness of a railroad employee, as diagnosed by a physician.

Prior to 1975, casualties were reportable if the injury was sufficient to incapacitate the employee from performing, without extra assistance, all regular duties for more than 24-hours in the aggregate during the 10 days (240 hours) immediately following the accident.

Definitions

A train accident is a collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment (standing or moving) which results in more than \$1,750 in damages to railroad on-track equipment, signals, track, track structures, and roadbed.

A train incident is an event arising from the movement of an equipment consist, which results in a reportable death, injury, or illness, but not more than \$1,750 in damages to railroad on-track equipment, signals, track, track structures, and roadbed.

A nontrain incident is any event arising from the operation of a railroad, but not from the movement of an equipment consist, which results in a reportable death, injury, or illness.



ASSOCIATE ADMINISTRATOR

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
WASHINGTON, D.C. 20590

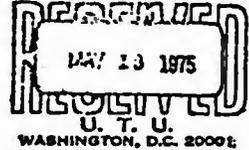
Exhibit B

MAY 15 1975

H5-SOU-371

Mr. J. R. Snyder
National Legislative Director
United Transportation Union
400 First Street N.W., Suite 704
Washington, D.C. 20001

NATIONAL LEGISLATIVE DIRECTOR



Dear Mr. Snyder:

This is in reference to your letter with an attachment, dated May 1, 1975, in regard to a dormitory provided for crewmen at Macon, Georgia by the Southern Railway. It is alleged that the dormitory is unsanitary, unsafe, and too noisy for the crewmen to obtain proper rest as required by the Hours of Service Act.

The Hours of Service Act does not provide for "rest" in the strictest sense. The Act provides for prescribed off-duty periods for railroad operating employees.

Your representative, Mr. R. M. Bullington, indicates in his letter that he has contacted the Occupational Safety and Health Administration concerning the alleged condition of the dormitory. Since the Federal Railroad Administration has no regulations to cover the situation, it appears that Mr. Bullington has pursued the correct procedure for resolution of this matter.

Sincerely yours,

R. H. Wright,
Acting Associate Administrator
for Safety

Marking and Lighting For Passenger Train Visibility

by Mark Hovind*

THE PURPOSE of this investigation was to evaluate various alternative marking designs that could enhance the visibility of the trailing ends of passenger trains. In particular, various marking patterns and lighting schemes were evaluated with the goal of finding one overall design that would be optimum from the visibility standpoint during all operating conditions, and yet be economical to implement and maintain.

This study was prompted by the Illinois Central Gulf Railroad commuter train collision on October 30, 1972. An investigation into the accident by the National Transportation Safety Board stated that: "Because the ends of the Highliner cars were painted black, they were difficult to distinguish from the station platform and other appurtenances at 27th Street under the overcast sky on the morning of the accident." Among the conclusions of the report was the statement: "The rear of train 416 was camouflaged from the view of the engineer of train 720. The back end of the Highliner blended with the background, and the marker lights were not distinctive enough to be discerned by the engineer of 720."

From these report findings it would seem reasonable to conclude that a marking pattern and additional lighting would have been valuable "back-up" systems providing a measure of safety in addition to the block signals already used by all commuter railroads.

Alternative marking designs were evaluated with respect to several different concerns:

- What color, coverage and design of markings provides optimum visibility?
- How do the alternatives compare with a "do-nothing" approach?
- What has been the operational experience of the alternatives?
- How do the alternatives compare under various operating conditions?
- What type of marker lights should be used?

In order to evaluate various designs, it was necessary to determine the stopping distance required by commuter trains at various speeds. This information was obtained from the On Site Simulation Tests, Exhibit 3Q of the Illinois Central Gulf Railroad 27th Street accident report for their new "Highliner" and old "single-deck" commuter cars, as shown in Table 1 below.

STOPPING DISTANCES REQUIRED FOR COMMUTER TRAINS AT VARIOUS SPEEDS

Commuter train type	Speed mph	Stopping distance (feet)	
		Full Service Stop	Emergency Stop
Old Type Single Deck	20	200	160
	40	600	580
	60	1640	1520
New Type Highliner	20	230	140
	40	700	500
	60	1650	1220

TABLE 1

The evaluation of alternative marking patterns and lighting schemes was performed in several parts: The first investigated the applicability of the safety markings used by highway departments. The second determined a striping width and pattern that would be easiest to see at distances up to

*Office of Research and Development, Illinois Department of Transportation, Chicago, Illinois

one mile. The third and fourth compared a striping pattern with the preliminary pattern proposed for comment by the Federal Railroad Administration (FRA). The last investigated the question of marker lights.

An Evaluation of the Applicability of Highway Safety Markings to Commuter Railroad Car Ends

Highway departments have extensively investigated marking patterns that

warn motorists of oncoming road hazard or emergency vehicles. Therefore, the first effort in this investigation was to test the applicability of these markings to typical commuter railroad operations.

Three patterns are presently used as highway warning devices. All three are striping patterns at 45° to the horizontal and offer a contrast between colors. One of the patterns adopts alternating rows of black and reflective white and is used as a road hazard warning. Another adopts alternating rows of standard yellow-orange and reflective white painted stripes and is typically used on the trailing ends of emergency and service vehicles. The third pattern consists of fluorescent yellow-orange and reflective white stripes of vinyl film.

In order to test these three types of markings a field test was conducted on commuter cars of the Burlington Northern Railroad. Three foot by three foot panels, representative of the three patterns with stripe widths from 6 to 10 inches, were made and attached to the ends of Burlington Northern double-deck commuter cars in various combinational pairs. In all, six different panels were used.

These panels were viewed from various distances and under various lighting and operating conditions. The first of several tests was conducted in semi-darkness inside Union Station, Chicago, at a distance of about 275 feet with a locomotive headlight shining on the panels. This test demonstrated that the only visible portion of the car end was the reflective white stripes on the panels. The other stripes, whether black, orange, or fluorescent yellow-orange, appeared black even at this relatively short distance.

The second test was performed outdoors in daylight with a commuter car spotted on a curve and partially obscured by a bridge. The six panels were observed from a distance of about 410 feet in various pairs in order to determine their effectiveness. During this test, it became obvious that the fluorescent yellow-orange stripes were more visible in daylight than either the standard orange or the black and white combinations. In addition, the fluorescent yellow-orange striping combinations were visible not only because of their color, but also because of the discontinuity created by the pattern against the relatively dull background.

The last test made with these panels was conducted on straight track in daylight at distances of 1,530 and 2,640 feet. The commuter car used for this test was not obscured and was pre-

sumed to represent the optimum conditions under which a train could be observed from an approaching train.

At these distances, the fluorescent yellow-orange colored panels were the only ones that could be seen, but as the distance became greater, the stripes could no longer be perceived as stripes. This last test also demonstrated that panels of this size were only effective up to a distance of about one-quarter mile. Beyond one-quarter mile, the coverage was so small that the panels were virtually unnoticeable.

From this initial set of tests, several conclusions became apparent. The first was that of the color combinations tested fluorescent yellow-orange and reflective white stripes comprised the superior combination. The second conclusion was that the amount of area covered was an important factor. Thirdly, it was noted that if stripes were to be seen as stripes at any considerable distance, they would have to be wider than the 6 or 8 inch width stripes used in the initial tests.

Striping Patterns—Width, Coverage and Design

The second part of this investigation was conducted because of the concern regarding coverage and stripe width. Several large scale mock-ups of the end of an Illinois Central Gulf "Highliner" commuter car were striped with fluorescent yellow-orange material on a white background to illustrate various patterns, spacings, and stripe widths. Eight mock-ups were made to one-sixth scale and observed at simulated distances up to one-half mile. The patterns tested are shown in Figure 1.

These patterns were compared in pairs at various distances in order to simplify the evaluation. At simulated distances of less than one-quarter mile, the narrower striping combinations appeared to be the most noticeable. However, as the distance increased to one-half mile, the narrow striping combinations tended to "blur" and lose their effect as a pattern that could be easily distinguished.

At simulated distances close to one-half mile, it was observed that coverage was an important consideration. The patterns having 12 inch fluorescent yellow-orange stripes and 9 inch spacings appeared to be the most visible, primarily because of the greater amount of coverage by the fluorescent material. However, when the lighting conditions were somewhat reduced, the patterns tended to blur, making it less distinguishable as a pattern.

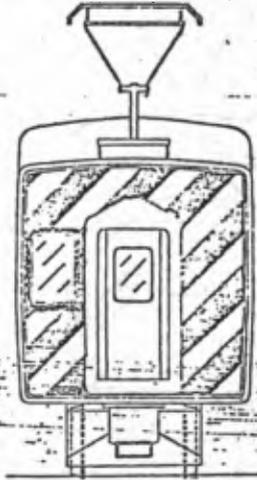
The patterns having stripe widths larger than 12 inches were observed to

MARKING AND LIGHTING

STRIPED MOCK-UPS OF ILLINOIS CENTRAL GULF "HIGHLINER" CAR ENDS



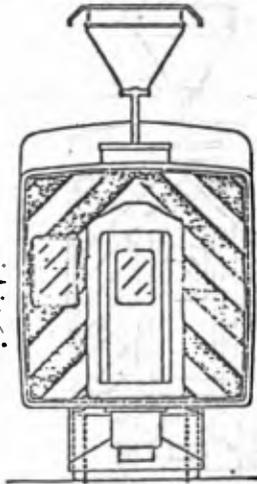
A
 6" fluorescent yellow-orange stripes
 6" reflective white stripes



B
 12" fluorescent yellow-orange stripes
 12" reflective white stripes



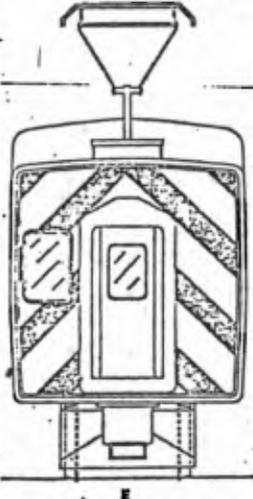
C
 12" fluorescent yellow-orange stripes
 10" reflective white stripes



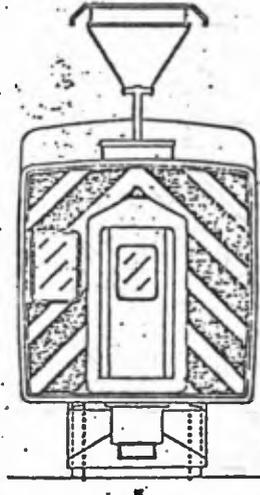
D
 12" fluorescent yellow-orange stripes
 12" reflective white stripes

FIGURE 1

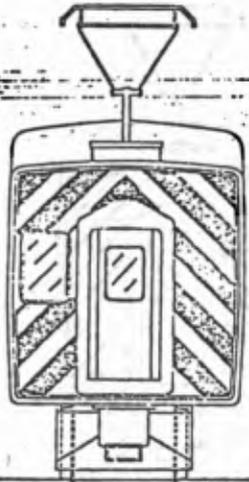
STRIPED MOCK-UPS OF
ILLINOIS CENTRAL GULF "HIGHLINER" CAR ENDS



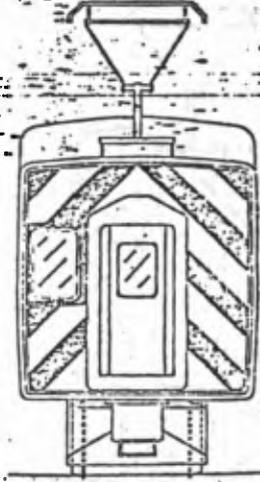
E
12" fluorescent yellow-orange stripes
18" reflective white stripes



F
12" fluorescent yellow-orange stripes
6" reflective white stripes



G
12" fluorescent yellow-orange stripes
9" reflective white stripes



H
12" fluorescent yellow-orange stripes
15" reflective white stripes

FIGURE 1 (cont'd.)

provide too little pattern on the car end at all distances. It was also observed that either the inverted "V" pattern or parallel stripes at 45° to the horizontal performed satisfactorily since both had the effect of being discontinuous with the environment.

The conclusion of this part of the investigation was that of the striping patterns tested, the combination of 12 inch fluorescent yellow-orange stripes with 9 to 12 inch reflective white stripes in a pattern either with inverted "V" stripes or parallel stripes at 45° to the horizontal would provide for the best visibility. In addition, it was clear that the striping pattern should cover as much of the car end as practicable.

Initial Daytime Comparison of Striping With Preliminary Federal Railroad Administration Car Marking Patterns

Some months after the Illinois Central Gulf Railroad's commuter train collision, the Federal Railroad Administration introduced for comment a preliminary specification regarding car end markings (Proposed Rulemaking and Notice of Hearing on Passenger Train Visibility 49 CFR Part 221). Because this preliminary FRA specification required fluorescent panels in a pattern considerably different from the striping patterns being developed in this study,

it was appropriate to compare a striped car end with one having a pattern like that proposed in the preliminary FRA specification. (The preliminary FRA specification also called for reflectors and flashing lights.) This comparison was done in the second set of field tests conducted during the daytime with Illinois Central Gulf commuter cars.

For this set of field tests, one Illinois Central Gulf "Highliner" car was marked with fluorescent yellow-orange paint so that it resembled, but did not exactly follow, the FRA preliminary specification for fluorescent panels. Another "Highliner" car was equipped with striped panels on each side of the car end door. A third car was left unmarked. This third car had the original plain flat block end. The unmarked commuter car was used to determine the visibility difference between the marked cars and one with no marking whatever. The actual patterns used for the FRA patterned and striped cars are shown in Figure 2.

For the purpose of this second set of field tests, none of the cars were equipped with marker lights except for the small, red identification lights presently used by the Illinois Central Gulf for track movements, switching operations, and designation of train end. Also, the

ILLINOIS CENTRAL GULF "HIGHLINER" CAR ENDS

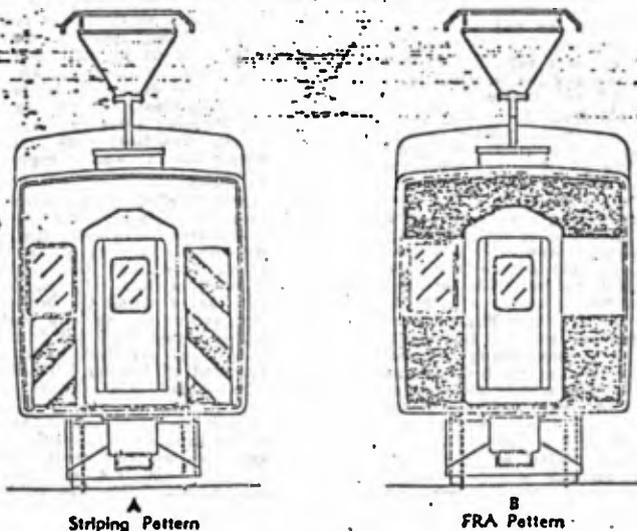


FIGURE 2

commuter car patterned after the FRA preliminary specification had approximately 33% more of the car end covered with fluorescent yellow-orange paint than proposed to be required by the FRA. The paneled commuter car had less than one-fourth of the available space covered. Because of this, a comparison including considerations of coverage could not be made. However, several conclusions were drawn regarding the relative visibility of each pattern.

The evaluation of these patterns was conducted on a sunny day through tests on tangent track. The commuter cars were observed and photographed individually from various distances up to one mile.

At 500 feet, the fluorescent yellow-orange and reflective white striping patterns appeared to show up somewhat better than the unmarked car, but the effect was not dramatic apparently because of the lack of coverage by the panels. The FRA pattern showed up clearly better than the unmarked car. Also, the identification lights were plainly visible.

At 1,000 feet, the FRA pattern showed up better than either the striping pattern or the unmarked car. This again appeared to be primarily due to the coverage of the fluorescent yellow-orange color which in the FRA patterned car covered more than twice as much of the car end as the striping combination. At this distance, the unmarked car was rapidly merging with the horizon, and the identification lights were just barely visible.

At 1,500 feet, the FRA pattern was clearly the most visible alternative, with the striping pattern showing up as small dots of color. The unmarked car at this distance had almost merged with the horizon.

At 2,000 feet, the results were virtually the same as at 1,500 feet. The FRA pattern was clearly visible and the panels could be seen. The unmarked car almost merged with the horizon.

These field tests specifically demonstrated the following. First, it was clear that coverage was an important consideration in determining daytime visibility. In this regard, the FRA pattern performed very well because of its large area of coverage with the fluorescent yellow-orange color, and because this color provided a sharp contrast with the plain flat black of the original car end. The striping pattern provided same visibility during the daytime, but suffered partly because of its lack of coverage and partly because the sharp contrast between the fluorescent yellow-orange and the black was absent. The

unmarked car merged with the horizon at slightly less than one-half mile.

In this test, the identification lights had an insignificant effect on visibility. They could not be seen until the observer was within 750 feet of the car end.

Daytime and Nighttime Comparison of Striping with Preliminary Federal Railroad Administration Car Marking Patterns

Because the marking patterns evaluated in the Illinois Central Gulf field tests did not correspond exactly to the specifications that they were intended to represent, and because they were conducted during the day only, a third set of field tests was undertaken. For this set of tests, one Burlington Northern commuter car was marked with a pattern corresponding to the FRA preliminary specification. The second Burlington Northern commuter car was marked with a full striping pattern, covering as much of the car end as possible. A third commuter car was marked with the same striping patterns as the second, except that a "high-intensity" reflective white material was used instead of the standard reflective white stripes. These three marking patterns are shown in Figure 3.

Both striped cars were provided with 60 watt red marker lights. For these tests, the three Burlington Northern commuter cars were placed side-by-side on tangent track so that they could be viewed and photographed at distances up to one mile. During the tests, photographs were taken from all three tracks. This was done in order to overcome any bias created by the track position in focusing attention on a particular point. The tests were performed both during the day and at night.

Daytime Tests

All three Burlington Northern commuter cars were photographed at intervals of 500 feet up to 4,000 feet, looking east, during the early afternoon. The effect was that the maximum amount of light was reflected off the car ends, thus creating the best conditions for seeing the various patterns. The marker lights were not turned on during the daytime tests since they were operated off the car batteries and would be needed later for the night tests.

The result of this daytime field test verified and expanded the results of the first two daytime field tests. At distances up to 2,500 feet, all three car ends were highly visible. The FRA pattern performed about as well as the others, and there was no distinguishable visibility difference between the reflective white striped and the high-

BURLINGTON NORTHERN DOUBLE DECK COMMUTER CAR ENDS

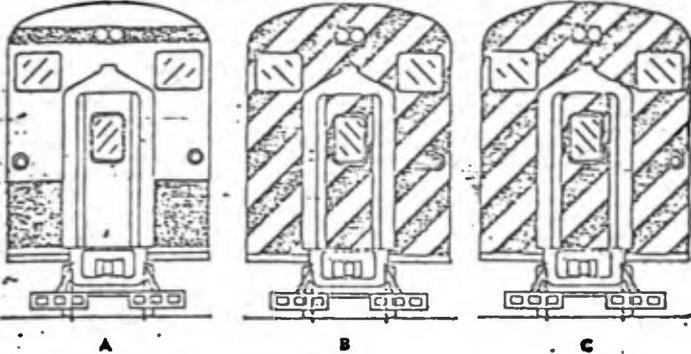


FIGURE 3

intensity reflective white striped cars. In addition, the stripes were easily seen as stripes at all distances up to about half a mile.

At distances beyond 2,500 feet, the patterns became less distinguishable, and coverage became a more important consideration. In this regard, both fully striped cars performed somewhat better than the FRA pattern, simply because the area covered by the fluorescent yellow-orange material on the fully striped car was about 15-20% greater than that of the FRA patterned car.

This conclusion of the daytime field tests was that the most important consideration for daytime visibility was the coverage of this fluorescent yellow-orange material. Also, the striping pattern was more noticeable because of the discontinuity between the pattern itself and the background environment, particularly within a range of one-half mile.

Nighttime Field Test

The nighttime portion of the third set of field tests was virtually a repeat of the tests conducted during the daytime. For the nighttime tests, the only source of light was from a switch engine headlight. For these tests, the marking patterns used were shown previously in Figure 3. Note that the two fully striped cars had 60 watt red marker lights affixed to both sides, and that the car marked according to the preliminary FRA specifications for fluorescent panels had no marker lights or other reflective devices.

For the night tests, the commuter cars were compared and photographed at distances up to more than one mile, both with the switch engine light on

and with it off. At various intervals, two evaluations were made: First, how visible and distinct were the markings; and second, how effective were the red marker lights?

The tests began at 500 feet from the car end. The FRA pattern was on the left, the standard reflective white striping pattern was in the middle, and the high-intensity reflective white striping pattern was on the right. The three cars were viewed and photographed on by from the center track, which at 500 feet caused the center car to show up the best when the headlight was turned on.

At 1,000 feet, the high-intensity reflective white stripes were much brighter than the standard reflective white stripes when the headlight was on. The car bearing the FRA pattern could not be seen very well with the exception of the reflection off the polished stainless steel door. The FRA pattern did not show up as a pattern, and the red portion provided no nighttime visibility whatever.

When the headlight was turned off at 1,000 feet, the 60 watt red marker lights were plainly visible, and could be seen both as marker lights and as reflections off the tracks. Also, they were distinctly different from nearby overhead and trackside signals because they appeared more red-orange than the deep red of the track signal lights. This distinction, however, is not necessarily important because in the case of either the marker lights or the signal lights, the red color means "stop."

At distances up to 2,000 feet with the headlight on, the primary visibility was provided by the reflective white stripes.

With the headlight on at distances of less than 1,500 feet, the 60 watt red marker lights could barely be seen because of the high reflection coming off the white stripes. As the distance approached about 2,500 to 3,000 feet, the effect of the reflective white stripes was about the same as that of the marker lights. Beyond 3,000 feet, the stripes were still plainly visible as stripes, but the effect of the marker lights was greater.

At a distance of one mile, the marker lights provided most of the visibility even though the stripes could still be seen, with this high intensity reflective white stripes appearing to be almost twice as bright as the reflective white stripes. Throughout the nighttime test, the fluorescent yellow-orange color appeared black.

From this test, several conclusions were apparent. First and foremost was the fact that the full striping pattern of 12 inch fluorescent yellow-orange and 12 inch reflective or high-intensity reflective white stripes was highly visible at all distances up to one mile, and within one-half mile was far more visible even than the marker lights. Second, the 60 watt red marker lights themselves were highly visible and distinctive at distances of up to several miles, and when combined with the striping pattern, provided excellent nighttime visibility. The third conclusion was that the fluorescent yellow-orange paint by itself provided no nighttime reflectivity whatever. If that pattern were used, full reliance would have to be placed for nighttime visibility on track signals plus any marker lights or reflectors that might be put on the ends of the cars.

Marker Lights

The fifth part of the investigation concerned marker lights specifically. This part of the study did not involve any special field tests comparing alternatives, but rather drew on the operational experience and opinions of Chicago area rail carriers. This part of the study was undertaken partly because the Chicago rail carriers had expressed concern over the preliminary FRA specification for "strobe" lights, and partly because of the favorable experience of two Chicago carriers having large red marker lights such as those tested in the Burlington Northern nighttime tests.

The expressed concern over "strobe" lights was that they could be distracting or disconcerting to operators of following trains, particularly in multiple track territory with numerous train movements. The fear was that

strobes could distract train operators from seeing the block signals. Concern was also expressed that, although strobes are highly visible, they do not allow adequate depth perception. Thus, operators of following trains would be able to see trains ahead, but would have difficulty judging closing rates on the lead trains. This phenomenon would be due primarily to the very short duration of the strobe's flash, which the eye cannot adjust to quickly enough to determine intensity or spatial separation between lights.

A second alternative would be a pair of red incandescent marker lights flashing at about one cycle per second. This option would also appear to be deficient because the varying light intensity would cause the pupils of the eyes to dilate and contract with resultant eye fatigue.

The third alternative, presently in use on the Burlington Northern commuter cars and on the newer cars of the Chicago Transit Authority, appears to have virtually all of the benefits and none of the drawbacks of the other options. This alternative is lighting from a pair of red marker lights with the filament mounted in a horizontal position. As used by the Burlington Northern and the CTA, these lights are 60 watt sealed beam units with 6 inch red lenses.

During the Burlington Northern nighttime tests, on tangent track, these lights proved to be highly visible for several miles. According to experience of the CTA, on curves the red marker lights with a horizontal filament mounting may be seen almost up to a 90° angle, and in tunnels they reflect off the tracks. In addition, such lights are distinctive, very effective in providing the element of depth perception, and do not cause eye fatigue. In all cases, just as automobile and truck tail lights, they provide excellent visibility and warning, without being distracting or disconcerting. Finally, the Burlington Northern and CTA are both highly satisfied with their lights.

For all the above reasons, it was concluded that the 60 watt red marker lights would provide desirable lighting for rail passenger car ends under normal rapid transit and commuter rail operating conditions.

Conclusion

This study investigated, evaluated, and compared various alternative marking patterns and lighting schemes. The primary conclusion of the various tests that were conducted throughout the study concerns marking patterns and their effect on both daytime and nighttime visibility.

For daytime visibility the most important consideration was coverage and contrast. Since the coverage is limited to the available area on the car end, most of the evaluations concerned contrast—both within the marking pattern itself and between the markings and the environment.

The first conclusion for daytime, then, was that a fluorescent yellow-orange diagonal striping pattern offered a greater contrast between itself and the environment than a pattern comprised of a rectangular blocks of fluorescent material. This was due primarily to the discontinuous effect of stripes and the fact that diagonal stripes are much less susceptible to blending in with the typically horizontal or vertical counterparts of the environment.

A second conclusion that became apparent early in the study was that the fluorescent yellow-orange color was highly visible in practically all daytime environments. During the nighttime, however, this color appears black under normal lighting conditions, and at distances greater than about 500 feet, cannot be seen even with a locomotive headlight aimed at the pattern.

The third conclusion was that during the daytime, the bulk of the visibility came from the fluorescent yellow-orange pattern, with red marker lights and reflective tape offering very little improvement. During the nighttime, the visibility of reflective white stripes was found to be highly desirable. This, in a diagonal 12 inch striped pattern, provided excellent visibility at all distances up to a mile or more.

Also for nighttime visibility, the 60 watt red marker lights with a diameter of 6 inches or more were found to be highly desirable both as seen in the tests and in operational experience as reported by the Chicago Transit Authority and the Burlington Northern Railroad. For distances between half a mile and a mile, the marker lights and reflective tape together provided visibility with each being of about equal brightness. At all distances, the red marker lights were shown to provide excellent visibility if there is a curve in the track and no light is shining on the reflective tape. This visibility is provided either through direct line of sight vision or through reflections on the tracks, and thus the engineer of a following train can be aware of a train ahead, regardless of whether he can actually see it.

Because of the above conclusions, the most practical and most visible way of marking the trailing ends of passenger trains under normal operating conditions appears to be:

1. That the trailing ends of passenger trains be marked for visibility with 12 inch stripes of fluorescent yellow-orange color alternating with either reflective white stripes or high-intensity reflective stripes. These stripes should cover as much of the surface of the car end as practicable and be arranged either in an inverted "V" pattern or parallel stripes at 45° to the horizontal.

2. That the trailing ends of passenger trains be provided with two 60 watt red marker lights with lenses of at least 6 inches diameter. These should be placed on either side of the lower part of the car end.

This pattern is shown in Figure 4. The Burlington Northern commuter car end shown is equipped with 12 inch fluorescent yellow-orange stripes, 12 inch reflective white stripes, and two 60 watt red marker lights.

REFERENCES

- National Transportation Safety Board. *Railroad Accident Report—Collision of the Illinois Central Gulf Railroad Commuter Trains, Chicago, Ill., October 30, 1973.* Report number NTSB-RAR-73-5, 1973.
- Cunningham, Bernard G. *Some Observations on Passenger Train Visibility,* testimony before the FRA hearing on Passenger Train Visibility, Docket No. PCI-FR Doc. 73-14273, September 28, 1973.
- U. S. Department of Transportation, Federal Highway Administration. *Manual on Uniform Traffic Control Devices, 1971.* Washington, D. C.: Government Printing Office, 1971.
- Rev. May 3, 1974, FHWA Notice N-5160.3, change from black and white to orange and white.
- American Traffic Services Association. *Barricade Visibility Evaluation Tests,* June 6, 1973, Chicago, Illinois.
- Highway Research Board, National Research Council, National Academy of Sciences, National Academy of Engineering, National Cooperative Highway Research Program Report 130. *Railway Delineation Systems; Evaluation of the Visibility of Reflective Devices,* 1972.
- Federal Railroad Administration. Docket No. PC-1; Notice 1. *Passenger Train Visibility; Proposed Rulemaking and Notice of Hearing,* July 13, 1973.

ACKNOWLEDGMENTS

These investigations, tests and evaluations benefited from the involvement of a number of organizational units within the Illinois Department of Transportation, as well as that from several commuter rail entities of the Chicago region and the Chicago Transit Authority. In addition, a number of manufacturers were called on for assistance in providing various

**BURLINGTON NORTHERN COMMUTER CAR MARKED ACCORDING
TO THE RECOMMENDATIONS OF THE ILLINOIS
DEPARTMENT OF TRANSPORTATION**

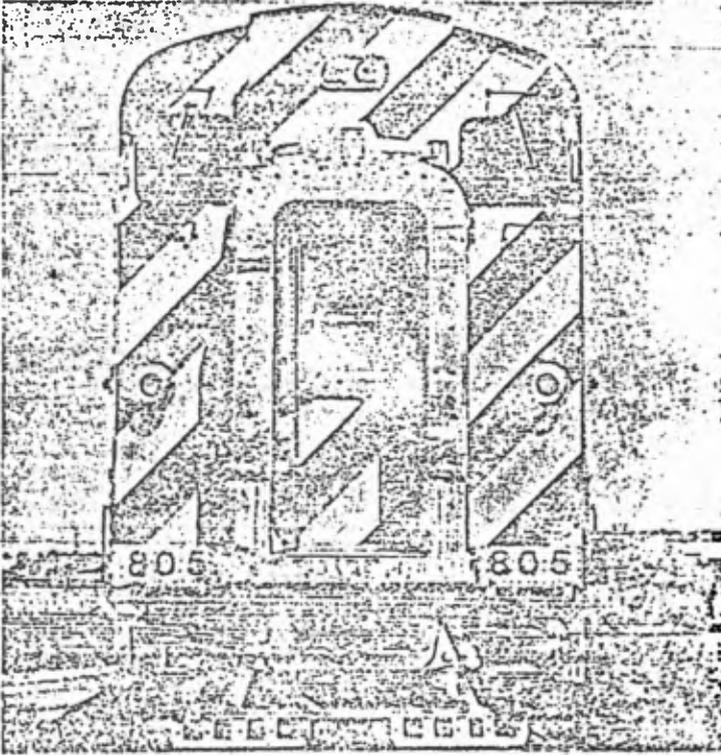


FIGURE 4

specifications and information on the different attributes of available marking and lighting materials and equipment.

From within the Department, contributing analyses and investigations have been made by the Office of Safety, the Bureau of Traffic, the Division of Public Transportation and the Office of Research and Development. From outside the Department, we are particularly indebted to the Burlington Northern Railroad and the Illinois Central Gulf Railroad for their generous cooperation in carrying out a number of on-the-car visibility tests on a total of three separate occasions and their assistance and testimony regarding the operational efficacy of various designs.

Finally, special thanks go to Bernard H. Cunningham, former Assistant Secretary of the Illi-

nois Department of Transportation for his continuing support and personal effort throughout the course of this study.

FOOTNOTES

1 Color slides and movies of the various tests are available through the Office of Research and Development, Illinois Department of Transportation.

2 See references.

3 Pattern has 18 inch fluorescent polychrome and 12 inch reflective white stripes. Panels are 2' x 4' and 2' x 3'.

4 Pattern denotes the panels, not marker lights or reflectors.

5 Tests of various car lighting alternatives are being undertaken by the Federal Railroad Administration.

EXHIBIT D

NATIONAL TRANSPORTATION SAFETY BOARD

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Office of the Chairman

AM Newspapers
Friday, July 20, 1973

The National Transportation Safety Board, reporting on the Illinois Central Gulf commuter train collision in Chicago last October 30, today recommended Federal action to improve rail commuter car crashworthiness through "substantial research and development" -- including crash testing.

The Safety Board also urged the ICG to improve its operating rules and rules enforcement, and to "systematically" review its organization for adequate safety.

Forty-five passengers died and more than 300 were injured at the South Side 27th Street station when an ICG train of four new bi-level "Highliner" cars was struck from the rear by a six-car ICG train of older commuter cars. The inbound Highliner train had overshot the station by more than 600 feet, and was backing to the station. It was nearly stopped when the following train, also inbound on the same track, failed to stop in time.

Most of the fatalities and serious injuries occurred in the Highliner train's rear car as the lead, older car telescoped it. The rear half of the 85-foot-long Highliner was demolished. The first 10 feet of the older car was destroyed.

The Safety Board determined that the probable cause was the backing of the Highliner train "without flag protection into a previously vacated signal block" of the automatic-block signal system, and the "failure of the engineer" of the following train, "while operating faster than the prescribed speed, to perceive the train ahead in time to avoid the collision."

- 2 -

Cited as contributing to the accident were (1) "ambiguous rules which caused confusion among employees regarding the necessity to flag within automatic-block signal system limits," and (2) the "reduced importance of flagging in suburban service implied by management's failure to enforce" five of its own rules. The Board also listed as contributing to the high fatality toll "the over-riding of the underframe of the Highliner car by the older car, which allowed the older car to telescope the Highliner car."

Safety Board investigation showed that the Highliner engineer was making his first run on the scheduled train involved, and that the 27th Street station by timetable was a flag stop but by general practice was a regular stop. Noting this, the Board held it "probable" that the Highliner engineer forgot his conductor's earlier instruction to stop there "until it was too late to prevent a station over-run."

The Highliner train was backed without a crewman preceding it with flagging equipment. The conductor directed the movement from the rear Highliner's mid-car vestibule. The Highliner car end was painted black and had only 1 1/2-inch-wide, low-intensity marker lights. The backing train was partially obscured from the following train by the station platform.

The Safety Board determined, however, that the engineer of the following train should have seen the backing train "a considerable distance before the braking limits" of his train was over-run. And if the following train had been operating at the 30 mph speed required by the signal system -- instead of the 50 to 55 mph estimated by the Board -- "an emergency brake application at the time the engineer stated he first saw" the Highliner train ahead would have stopped the train in time to avoid the collision. The Board concluded that the excess speed was great enough to be detectable by the engineer even though the older train had no speedometer.

The Board concluded from its investigation that although the design of the older cars was the primary factor in crash casualties, the crashworthiness of new, lightweight commuter cars can be improved. But the Board said it believes there must be "a substantial research and development program" including actual crash testing of such equipment.

Board study of applicable ICG operating rules -- as written and as interpreted by crewmembers of the accident trains --

showed that "rule training, examination, and enforcement activities of the ICG were inadequate to insure rule compliance." Also cited were "acceptance by ICG supervisors of questionable operating practices and the degradation of flagging rules," and the fact that "station over-runs and short backing movements had been accepted in the past" by ICG management.

The Board found no mechanical failures in either train, and no failure in the signal system. It did hold that although the signal system "was safe as long as the rules were obeyed, there was no margin for disrespect. There are signal systems available (e.g., cab signals, automatic train control, automatic train stop) that place less reliance on rule enforcement."

One month after the Chicago crash, the Safety Board issued four recommendations urging that ICG Highliner car ends be made more conspicuous, signal block entry restrictions be tightened, and ICG engineers be given speedometers wherever rules limited train speed. Last April 25, the Board (1) made two recommendations to the Federal Railroad Administration seeking better enforcement of its regulation of Highliner crashworthiness, and review of Highliner car-end "collision posts" -- found below-standard in the Chicago investigation -- to be sure they meet FRA crashworthiness requirements, and (2) issued four recommendations to the Urban Mass Transportation Administration intended to tighten UMTA design specifications covering the crashworthiness of commuter cars purchased with Federal aid.

In its formal Chicago crash report today, the Safety Board recommended that . . .

** The Illinois Central Gulf Railroad (1) improve operating rule compliance by developing "books of standard interpretation" of rules and regularly testing its employees' ability to interpret rules correctly in specific operating situations; and (2) "review its organization systematically" to eliminate such safety problems as location of the conductor's intercom and brake valve in the mid-car vestibule when the rear of the car would be "the logical location for supervising a reverse movement."

** FRA and UMTA (1) "justify or disprove" by study the need for a requirement that high-speed commuter service be controlled by some form of automatic system or some "special procedures that will prevent a collision of two trains;" and (2) develop "the technical approaches" -- including crash testing -- to crashworthiness in lightweight commuter cars.

- 4 -

** FRA revise its commuter car construction standards to improve their crashworthiness, and enforce such regulations before new cars enter service.

The report which the Board released today is available to the general public. Single copies may be obtained without charge by writing to the Publications Branch, National Transportation Safety Board, Washington, D. C. 20591. Multiple copies may be ordered by mail, with full payment enclosed, from the National Technical Information Service, U. S. Department of Commerce, Springfield, Virginia, 22151, at \$3 a copy on standard paper and 95 cents a copy on microfiche.

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RAILROAD ACCIDENT REPORT

**COLLISION OF
ILLINOIS CENTRAL GULF RAILROAD
COMMUTER TRAINS,
CHICAGO, ILLINOIS
OCTOBER 30, 1972**



**NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D.C. 20591
REPORT NUMBER: NTSB-RAR-73-5**

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28. Because of the improper welds, the collision posts of the Highliner car did not meet the shear requirements of the Federal regulations.

29. It is probably technically feasible to design commuter cars to withstand crashes at moderate speeds without fatal injuries to the passengers.

30. Although the Highliner cars were financed with Federal assistance, the design of the cars was not subjected to a review for compliance with Federal regulations by FRA or to a safety review by UMTA.

31. FRA had no program to insure that design of new equipment complied with Federal regulations before the equipment was put in service. Instead, the FRA relied upon voluntary compliance.

IV. PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this accident was the reverse movement of train 416 without flag protection into a previously vacated signal block and the failure of the engineer of train 720, while operating faster than the prescribed speed, to perceive the train ahead in time to avoid the collision. Ambiguous rules which caused confusion among employees regarding the necessity to flag within automatic-block signal system limits and the reduced importance of flagging in suburban service implied by the management's failure to enforce Rules 7, 35, 99, 896, and 1003 also contributed to the accident.

Contributing to the high incidence of fatality was the overriding of the underframe of the Highliner car by the older car, which allowed the older car to telescope the Highliner car.

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
 WASHINGTON, D.C.

ISSUED: November 30, 1972

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
 at its office in Washington, D. C.
 on the 20th day of November 1972.

 FORWARDED TO:)
 Mr. Alan S. Boyd, President)
 Illinois Central Gulf Railroad Co.)
 135 East Eleventh Place)
 Chicago, Illinois 60605)

SAFETY RECOMMENDATION R-72-37 thru 40

The National Transportation Safety Board's continuing investigation of the collision of two Illinois Central Gulf Railroad (ICGRR) commuter trains at the 27th Street Station in Chicago, Illinois, on October 30, 1972, has revealed several important safety problems. Although the Safety Board has not established finally the role these problems played in causing the collision and in contributing to the fatalities, the problems are involved sufficiently to warrant immediate corrective action to prevent similar accidents.

The ends of the ICGRR Highliner cars are painted a flat black color, which makes it difficult to distinguish the cars in certain lighting and background conditions. Specifically, a train similar to Train 416 of October 30, standing or backing slowly in the vicinity of the 27th Street platform, is difficult to distinguish against the dull, dark background when it is viewed from the operating compartment of an approaching train on the same track.

The rear end of a Highliner train can be rendered attention-getting and distinguishable in several ways. The existing marker lights, which are small and not easily seen in daylight, could be replaced by marker lights of a larger size and greater intensity. The end portions of cars, now painted black, could be painted with large zones of fluorescent color or with alternating light and dark striping in order to contrast with typical railroad backgrounds.

The National Transportation Safety Board therefore recommends that the Illinois Central Gulf Railroad and the Chicago South Suburban Mass Transit District:

1. Install attention-getting marker lights, which are effective in all light conditions, and provide definitive attention-getting colored markings at the ends of trains made up of Highliner cars. These actions should be considered also for other commuter passenger cars of generally dark coloration.

Until the causal factors related to signals and operating rules are determined, the Safety Board recommends that in order to guard against a repetition of the accident at Saugus, the ICGRR:

2. Revise Rule 515 in the current Illinois Central Rules and Regulations of the Operating Department to provide that train or engine which has passed beyond the limits of a block must not reenter that block without the protection of a train order.

This procedure, by removing the authority to reenter a block under a flag protection, also removes any possible uncertainties as to what flagging action would be required under Rule 99(a) in relation to Rule 515. Rule 99 of the ICGRR is the same as Rule 99 of the Association of American Railroad's Standard Code of Operating Rules. The Safety Board in its special study entitled "Signals and Operating Rules as Causal Factors in Train Accidents," adopted on December 2, 1971, pointed out some vague areas in Rule 99. The requirement for a train order will insure that any following train, if affected, will be notified. This procedure is practical on railroads, such as the ICGRR, which have radio communication.

The Safety Board also recommends that, as an interim measure, the ICGRR:

3. Establish procedures that will prohibit a train from entering a block already occupied by a passenger train except under protection of a train order.

Although it appears that the following train in this accident did not enter the block while the first train was still occupying it, the operating rules would allow such an entry at restricted speed. In this accident, the second train apparently passed an approach signal at 31st Street and was required to reduce to medium speed (30 m.p.h.) at once and to approach the next signal prepared to stop. The damage is evidence that the second train did not approach the collision point prepared to stop. Therefore, the Safety Board concludes that a second train can enter an occupied block on a restricting signal and strike an occupied train at a speed that can inflict serious and possibly

fetal, injuries to passengers and employees. This recommendation, in conjunction with the recommended change of Rule 515, will insure that two trains moving in the same direction on the same track will not occupy the same block except by a train order which will reduce to a minimum the risk of a collision between them.

This accident also involves the maximum specified speeds for trains moving under various signal indications. All knowledge of train speed during the accident, however, must be based upon estimates of persons or indirect inference, because the older, following train was not equipped with any form of speedometer. In order to follow the rule the engineer of that train had to estimate his speed which is an unreliable method of determining speed. The new Highliner trains are equipped with speed indicators, and a speed indicator was installed in an older train by the railroad for the purpose of operating tests a few days after the accident.

The Safety Board recommends that the ICGRR:

4. Provide a reasonably accurate speedometer for the use of engineers required to operate trains wherever rules require limit or control of speed.

These recommendations will be released to the public on the issue date shown above. No public dissemination of the contents of this document should be made prior to that date.

Reed, Chairman, McAdams, Burgess and Haley, Members, concurred in the above recommendation. Thayer, Member, was absent, not voting.


By: John H. Reed
Chairman

Mr. SNYDER. The last part of section 6 requires the FRA to pattern its regional offices similar to most other Federal regulatory agencies. It provides that FRA shall maintain 10 regional offices which will be under the direct control of the Associate Administrator for Safety. Within the Department of Transportation, both the Federal Aviation Administration and the Federal Highway Administration have 10 regions. We are not advocating more bureaucracy by the change. We simply want safety enforcement improved by having regional offices located where they can be most effective.

In August 1975 FRA announced that it was reducing the number of regions from eight to five, but in actuality, it provides for an increased number of offices and personnel, except in safety. For example, the FRA proposes to create five new positions for Regional Administrators and retain the existing Regional Directors as safety directors only. We are advised that this latest reorganization had already been decided upon, but FRA officials first wanted some outside research group to prepare a report advocating such a change. The report by Arthur Young & Co. does not deal at all with the day-to-day enforcement activities.

One major problem with the FRA plan is that the Office of Safety no longer has any effective authority over railroad safety. The Office of Safety has been removed from the line of authority over the regional directors. Moreover, the State safety grant program has been removed and placed in the Office of Federal Assistance.

The low safety emphasis in FRA is further demonstrated by the breakdown of personnel in the former Office of Safety. There are two offices within the safety divisions, the Office of Standards and Procedures, whose primary duties are promulgating and interpreting rules, and office of safety programs handling what is left of the day-to-day direction of field enforcement activities. The Standards and Procedures Division has at least 22 technical personnel, whereas the compliance section has only 6 technical employees. One of these latter individuals handles State participation activities and another is a training officer.

What is the effect of the reorganization on railroad safety? It means that the regional offices which formerly received complaints and directions for handling from the Office of Safety in Washington are now to be subject to directive orders from the Administrator who does not have time to know or to handle the problems of policing the railroad industry.

The direct line between the regional offices will run straight to the Administrator's office. Years of experience which the members of the Office of Safety in Washington have in relation to Federal safety regulations and handling violations of them and other enforcement work directly with the regional offices will be cut off and wasted entirely. When one reads the distribution of the functions of the regional offices, it becomes clear that the intention is to create offices which are not basically designed to enforce the existing Federal railroad safety laws and regulations issued under the Federal Railroad Safety Act of 1970, but rather to downgrade this police function of the Office of Safety and to emphasize a great many other programs—none of which will have any real safety function.

The net effect of all of these reorganizations is that FRA will have several nearly autonomous regions floating in different directions with no central uniform leadership. The duties in the regions will be primarily bogged down in reviewing meaningless carrier records and busily engaged in collecting after-the-fact statistics, but with no identifiable enforcement actions.

In conclusion, RLEA supports H.R. 11804 and urges its passage without amendment.

We wish to thank and express our gratitude to the subcommittee for this opportunity to appear before it and express our views on this very important matter.

Just a few more summary remarks, Mr. Chairman.

As I pointed out in my statement, we have a yearly increase in railroad accidents.

In 1970 the Congress in its wisdom passed what we in the railroad industry, railroad labor, though would be the answer to our safety problems, with a provision in the law that within 1 year reasonable safety standards would be adopted to cover these safety problems. Prior to this the ICC had jurisdiction over 5 percent of the safety problems in the operation of railroads. The Rail Safety Act gave almost 100 percent jurisdiction to FRA over railroad operations.

Five years later we find we have only two sets of standards adopted by the FRA. One of these is the so-called track standards, on which the organizations affected, along with my particular organization, made several recommendations during the course of these hearings, none of which was even recognized or, if so, there was no interest put in the standards.

The second set of standards is the equipment standards.

One year has gone by since the FRA testified before this committee, and no standards have been adopted, none whatsoever.

Mr. Skubitz asked a question about additional inspectors. H.R. 11804 contains primarily the same authorization which this committee handled last year and which I think the House passed approximately 379 to nothing. It would require no additional funds. To clear up the question Mr. Skubitz asked yesterday, the 500 inspectors that are earmarked in the authorization are not additional inspectors. This includes the inspectors already onboard who, as Mr. Hall testified, number approximately 315 with the clerical staff and all. We are talking in terms of the authorization of approximately 150 more inspectors along with the clerical force. Really we are not asking for additional funds.

I will admit that the operating rules designated in the bill in some cases would cost additional money to the railroads. On the other hand, in some cases it could save them money because if you have a better safety program you will have a safer operation, less damage to the railroads, fewer derailments, fewer collisions, and that trickles right on down to the consumer. There might be some slight additional cost, but the cost to the carriers is pretty tremendous now because of the high rate of accidents.

As I pointed out in my statement, the FRA is continually reorganizing. All you have to do is go back and look at the record and you will see it has been reorganizing ever since it came into existence.

We pointed out in the statement that the combined enforcement personnel for safety appliance and locomotive inspection is further deteriorating. They are both highly skilled in their arms, but the safety appliance inspector does not have the knowledge to go over and make an inspection as far as the locomotive is concerned.

In our opinion, FRA has been a complete and total failure as far as railroad safety is concerned.

We thought we had problems when the Safety Bureau was under the jurisdiction of the ICC, and we supported its transfer over to the new Department of Transportation. We then had on board approximately 253 people in the field. As Mr. Hall testified, he has 313 in the field, even though the jurisdiction went from 5 percent to almost 100 percent by the Department of Transportation.

To give you one good example, back when the ICC had this jurisdiction we received a quarterly report by railroads as to the number of accidents and the cause of the accidents, a complete breakdown. In that way we could make a study and see where our unsafe conditions were. The presidents of these organizations have requested safety quarterly reports, but to this date we do not have that quarterly report. Mr. Skubitz, you will be interested to know that when the ICC had it, they had one clerk who handled this on a mimeograph machine. It is that simple.

I would like to address myself just a little bit on the provision requiring an increase in the minimum penalty from \$250 to \$500 under this statute.

Mr. SKUBITZ. Will the gentleman yield a second?

Mr. Chairman, I was supposed to attend a meeting at 3 o'clock. I asked them to change it to 4. The meeting is in the Senate Office Building and it is already past 4. I regret very much, but I need to leave for that meeting.

Mr. SNYDER. This is misleading. Under the existing law on safety appliances, hours of service, and the other statutes on the books, these are handled by the Federal Collection Claims Act. For 1975 the average penalty was \$155. Under railroad safety the average figure is \$482 per claim even though under the existing law the maximum is \$2,500. The violations that do appear for court action under the Federal Collection Claims Act are negotiated down. I have yet to see one at the maximum of \$2,500. I think this would be a great improvement.

We will wholeheartedly support H.R. 11804 and urge its passage with one amendment. We agree with Mr. Hall, the Administrator, that this should be a 2-year authorization instead of a 1-year authorization.

Mr. Adams, I think it is the rule that you must have a 2-year authorization. Last year the authorization bill was introduced for 3 years, and the committee itself cut it down to 1 year just for the purpose of keeping an eye on the FRA, to make sure that the rail safety problem improved.

I would like to comment on Mr. Hall's statement concerning State participation. The railroad brotherhoods have been very much involved in getting a good Rail Safety Act, but it is no good if it is not implemented. It needs funds and personnel to do this. Section 206 of the act requires State participation. Not until about 2 years ago did

FRA request any funds for State participation even though the chairman from your great State of Pennsylvania, Mr. Bloom, chairman of the Public Service Commission of the State of Pennsylvania, requested in the first year's appropriation \$2.5 million for State participation. We supported this, but none was allocated. The next year we made the same request along with the State commissions, and nothing was granted.

During this time a regional director from the FRA came to my office and stated that they could not make these inspections because they were limited in travel expense, that they could make them only 5 days per month.

Going before Chairman McFall's committee the first time 3 years ago, we found that the FRA was turning back approximately \$1 million in funds. In the wisdom of that committee they earmarked these funds for travel so these inspectors could get out to the property to make these inspections.

We wholeheartedly support State participation. The reason no funds have been available is that they have not asked for funds, but we do have an appropriation now. This year, 5 years later, is the first year they have spent funds for the States to certify.

These are some of the things I thought would be wise to point out.

That is all I have.

Our group will be delighted to answer any questions you have, Mr. Chairman.

Mr. ROONEY. Thank you, Mr. Snyder, for that very fine statement.

I want to commend you, too, for your concern about safety and especially how it relates to this bill.

Mr. Adams.

Mr. ADAMS. Thank you, Mr. Chairman.

I apologize for going in and out, Mr. Snyder. I particularly came this afternoon so I could hear your testimony and that of your colleagues. I find in connection with this Budget Committee there is one emergency after another, and that is the reason I left for a few minutes.

Mr. SNYDER. We fully understand that. I am sure you have a question. Inasmuch as you were not in the room when I testified on reducing the number of regional offices down to five, you might be interested to know that this involves your part of the country. Under the reduction they are anticipating, the nearest regional office for your great State of Washington would be San Francisco. They would cut out the Portland, Oreg., office.

Mr. ADAMS. I support completely your statement that we should go to 2-year authorizations. You are absolutely correct that the committee was discussing this before, we wanted to keep the 1-year authorization to check on the FRA, but the deadlines don't give the committees the time to work if they have to do every authorization every year.

As you know, the Chairman has a very heavy workload of bills in this legislative committee, and this particular subcommittee has a number of authorizations that have to be passed every year before the Appropriations Committee can do its work. I agree with your conclusion on that.

I have one basic question which runs through all of the testimony. Not only have I read the testimony today, but my staff has gone over

the testimony of the other witnesses, and I have the basic feeling that you do not want the administration of railroad safety connected with the Federal Railroad Administration. I also see in the bills that are filed that basically the regulations are written into the bills.

Are you saying flatly that you don't feel that the safety regulations that have been passed are being properly administered both by rule-making and by day-to-day activities in the field?

Mr. SNYDER. That is absolutely what we are saying.

Mr. ADAMS. Is that what it is all about here?

Mr. SNYDER. That is exactly what it is all about.

Mr. ROONEY. Would you favor legislation taking the enforcement from the FRA and giving it to the Department of Labor?

Mr. SNYDER. Mr. Chairman, because of the failure of the FRA to comply with the Rail Safety Act of 1970 and to adopt safety rules and standards to implement rules, after deep consideration and investigation of all aspects, the Railroad Labor Executives' Association as well as the AFL-CIO—the RLEA at our meeting in April and the AFL-CIO at their national convention—both adopted a strong resolution in support of the transfer of the safety over to the Labor Department. The reason for that is very simple. We think we will get a much safer place to operate these railroads on and there will be better protection for the employees.

Actually, in the long run it will be a protection for the carriers, because if safety is improved there will be less damage and the railroads will be in better competitive position with other forms of transportation.

These are key operating rules. They are uniform. Many railroads have them in operation over the country. Some have none; some are watered down so they don't mean anything. These rules apply across the board. We have approximately 110 years of actual physical railroad experience right here at this table. With this type of experience, we feel that the transfer might not be necessary if the committee adopted this type of rules, because these are rules very critical to the life and limb of employees. Then this would be a decision that would be made by the RLEA and the AFL-CIO at the appropriate time.

I would say, Mr. Chairman, it would certainly be a step in the right direction on some very much needed rules. Your State has adopted some of these rules. This would make it uniform.

I would like to point out one other thing. The FRA has a poor record on its enforcement. I would like the record to show at this particular time that they have some fine personnel over at the FRA, well qualified people. Unfortunately, they are not in policymaking positions. Mr. Hall, the head man over there, is a very nice man. He is well qualified. But he doesn't know anything about railroads. He doesn't have any railroad experience. We do have a large number over there but, unfortunately, they are not the policymakers. This brings about a very undesirable situation.

Mr. ADAMS. Mr. Snyder, you have answered my question very well in giving me the information I wanted to have. I know you have had a great deal of experience in the operating field, as have the membership of the organizations you represent.

The reason for my question is that I am very much concerned not only with this bill but with a number of other bills that are moving

out of the Interstate Commerce Committee now, in which we are in effect writing regulations and trying to accomplish enforcement in the statute. That brings us to bills before the committee that are pages and pages long and are subject to amendment after amendment. When we are finished we don't have the product that we started with, and we are then trying to force somebody to carry out the administration of a law that they may not believe in or that they don't really follow through on.

I am turning over in my mind on this bill—as I say, we have others before the full committee, and it is not just this bill involved—whether the way to approach this is to try to write work rules into the law, in effect, which is really what we are doing, or regulations on safety.

Mr. SNYDER. Safety rules, not work rules.

Mr. ADAMS. Correct. But we are writing rules, really. The question is whether to do that or to put it some place where with more general language you get the job done. I am interested in seeing that the safety level is there.

Mr. SNYDER. We have tried that, haven't we Mr. Adams? We have tried this in the Railroad Safety Act. I personally have much more confidence in this Congress in writing safety rules than I have in the FRA. It is that simple.

Mr. ADAMS. That is exactly what I got from your testimony.

Mr. SNYDER. The blue flag rule is a good example. That has been in the mill since 1972. It is a simple rule, but it is a sacred rule in the railroad industry. A blue flag or blue light is displayed where employees are making repairs or working on the equipment. It is a simple rule.

Mr. ADAMS. I understand precisely your question. What I was trying to get at is whether we should try to write safety regulations and leave it in FRA or go with a more generalized statute and put it over someplace where the regulations will be properly written and properly enforced. I do not have a fixed opinion on that. If you wish to submit anything further in writing to me about it, anything more than you have stated, I would like to have that. We can write into a statute regulations which are favorable to you, but unfavorable ones can also be written in the amendment process, and the bigger a bill gets, very often there are more chance for slippage.

Mr. SNYDER. You are right about that.

Mr. ADAMS. You have answered my question and I appreciate it. I wanted to follow it a little more to indicate my personal concern about that, which stems from a bill we are working on in the full committee in the mornings this week. It is a very complicated Clean Air Act, and amendments are coming in. It gets to be very difficult to know which side you are on as they keep going back and forth. That concerns me. I don't want to get into that kind of situation with this bill.

Mr. Chairman, I appreciate you giving me the opportunity to have this colloquy with Mr. Snyder about it.

I thank you for yielding to me.

Mr. SNYDER. I share your concern in this area, Mr. Adams. Certainly all the statistics that have been placed before this committee in the

last 3 days have made me dizzy. We have a job to do here as far as the life and limb of the employees. We have deterioration in railroad safety.

I want to compliment this committee very highly. I want to make that very clear.

The cost factor has been brought up all during the course of these hearings. As you know, we have been wrestling with legislation to help the railroads and to rehabilitate the railroads. All of the railroad brotherhoods were shoulder to shoulder with the carriers to do this because we thought an injustice had been done in the past in competing with other forms of transportation. We spent many man-hours and a lot of money to bring it about. As a result, you have a bill, but there is not enough money. In the years to come we hope to have a better railroad act.

This is our industry and this legislation affects us as well as it does the carriers. We are well aware of this, but we want the record to show clearly that we have sacrificed safety here for the last 2 or 3 years while we were working on these large bills.

The position of the railroad labor groups, regardless of whether it is a bankrupt railroad or a mediocre railroad or a railroad making good money, they should provide a safe place of employment. It is that simple.

Mr. ADAMS. Thank you, Mr. Chairman.

Mr. ROONEY. Thank you, Mr. Snyder.

That concludes our hearings.

The record will remain open for additional questions that other members of the committee have.

Mr. SNYDER. Thank you for the opportunity to appear before the committee.

[The following statement and letter was received for the record:]

STATEMENT OF NILS A. LENNARTSON, PRESIDENT, RAILWAY PROGRESS
INSTITUTE

My name is Nils A. Lennartson. I am President of the Railway Progress Institute, the national trade association of the railway equipment and supply industry.

On behalf of RPI's member companies which design, manufacture, and supply the many and varied types of products employed by the nation's railroads, I am grateful for the opportunity to make known RPI's views on the Federal Railroad Safety Authorization Act of 1976 (H.R. 11804), which would provide federal funds for administration of the Federal Railroad Safety Act of 1970.

While RPI supports the authorization of funds for railroad safety, it opposes that part of the proposal which would establish a ceiling on the amounts which may be expended for safety research and development.

Since railroad products are designed and manufactured for the business of moving both freight and people across all types of terrain in all types of weather at fast speeds, efforts to make equipment safer are inextricably linked to research projects to improve performance. So much so, in fact, that the dual requirements of product safety and reliability have become practically synonymous.

In recent years the search for improvements has had to become continuous to keep pace with the growing demands being placed on the nation's rail transportation system. These demands are fast assuming mammoth proportions.

By 1980—only four years from now—the railroads will have increased the volume of goods they carry by one-third which means that they will be transporting no less than one trillion tons of cargo a year. Consequently, an arbitrary limitation on federal funds for safety research, such as the one proposed in H.R.

11804, would be counterproductive and come at a time when anything less than an all-out drive for improved rail equipment could have dire implications for the nation's economy.

RPI has long been well aware of the importance of such research and for several years has been participating with the Association of American Railroads and in some cases with the federal government on projects designed to perfect the safest, most-reliable equipment possible.

One such cooperative activity is the Track/Train Dynamics Project. This ten-year, \$10 million study is aimed at increasing the overall safety and mechanical efficiency of railroads from top to bottom. Its goal is to determine the precise reasons breakdowns occur. Do the faults lie in the construction materials themselves? In how they are assembled? In how the completed product is operated and maintained? Or in a combination of these factors?

To find out, research technicians are studying train performance in relation to such diverse factors as terrain, weather, mechanical wear and tear and the interaction of the cars with the track. A fuller understanding of these relationships will aid considerably in the design of new components that are capable of better withstanding all types of stress.

The first major contribution of this program is the development of a new set of guides for improved and safer train operation. More than 10,000 copies have been distributed to railroads.

While the Track/Train Dynamics Project has been supplemented by the Federal Railroad Administration with research and development funds appropriated by Congress, the majority of project funds have come from private industry.

Another joint research effort in which RPI is taking part is one to increase the safety of tank cars carrying hazardous materials. So far the project has led to the development of a special coupler for tank cars to help prevent uncoupling during an accident and puncture an adjoining tank car in the train; steel shields to cover the ends of the tank cars; and, as a further safety backup, heat-resistant coatings for tank cars are being studied in the event that a fire still manages to occur. RPI and the railroads have spent more than \$1.5 million in this program and are about to spend \$200 million more to incorporate the improvements in existing cars.

Still another project is seeking to develop stronger, safer truck bolsters and side frames to support the increasingly heavy loads that freight cars are being called on to carry.

To gain the knowledge essential for this accomplishment, a 70-ton box car and a 100-ton hopper car have been equipped with electronic measuring devices for recording the vertical, horizontal, lateral, and longitudinal forces bearing on a truck assembly. Then the cars have been incorporated into trains and routed over more than five thousand miles of track to record the varied degrees of stress incurred through all types of working conditions.

The data obtained is currently being analyzed by computers and translated into information that will help car builders and suppliers improve their products' design and construction.

Also, metallurgical studies are being conducted on damaged bolster and frame components to determine what caused them to weaken or break. The results of these particular tests should lead to the development of improved construction materials.

Still other tests are being carried out in which truck bolsters are rocked and bounced to determine at which precise point the horizontal and vertical forces inflict specific types of damage. The answers will further help in the development of more durable designs.

A similar research program is also underway to develop improved couplers for all types of train cars.

RPI's latest effort to help increase railroad safety is its participation—along with the AAR, rail labor, and a number of government agencies—in the new Railroad Safety Research Board co-chaired by Larry Cena, Vice President, Operations, Santa Fe, and Al Chesser, President, United Transportation Union. It was formed just last year to study rail safety problems and determine what improvements need to be made in current accident prevention programs. RPI's representatives on the Board are its Chairman, Floyd O. Johnson, Manager, Railroad Sales, CF&I Steel Corporation, Pueblo, Colorado, and myself.

Coming up is a joint RPI/AAR/Federal Railroad Administration project which will subject tracks and trains to tests simulating as much as ten years of use in

only one year. The tests will be conducted at a special facility to be constructed at the U.S. Department of Transportation's Test Center near Pueblo, Colorado.

Called the Interim Facility for Accelerated Service Testing (IFAST), it will be used to test track and rolling stock under heavy demand conditions. RPI and the railroad industry are providing up to \$2 million in track and other equipment and the FRA an equivalent amount. Tests are scheduled to begin this year.

Large joint industry expenditures for this program and those mentioned earlier are only a fraction of the private funds that are being spent on railroad technological research. In addition are continuing individual supply and railroad company funding for product development research which adds many dollars more to the never-ending search for the safest possible equipment.

A question about railroad safety jurisdiction being transferred to OSHA was asked of many of the witnesses who appeared before the Subcommittee. RPI is opposed to such action. The Federal Railroad Administration is building an organization with the necessary technical expertise to do an effective job of regulatory railroad safety. To shift this responsibility to another agency would, in our opinion, be a mistake.

The expenses will continue to be extensive as we in the railroad equipment supply industry attempt to perfect the products so necessary for the rail transportation system to meet the growing demands of the years ahead. The task is going to be enormous. That is why we welcome the activities of the Federal Railroad Administration in railroad safety research and hope they will not be hampered by the proposed funding limitation in H.R. 11804 that could impede realizing the very goals which the legislation is intended to achieve.

TRANSPORTATION ASSOCIATION OF AMERICA,
Washington, D.C., March 24, 1976.

HON. FRED B. ROONEY,

Chairman, Subcommittee on Transportation and Commerce, House Interstate and Foreign Commerce Committee, Washington, D.C.

DEAR CHAIRMAN ROONEY: While the Transportation Association of America does not normally express views on the merits of railroad safety legislation, it believes such action is clearly justified in the case of *H.R. 11804, the "Federal Railroad Safety Authorization Act of 1976"*, which is now awaiting markup by your Subcommittee.

TAA fully recognizes the need for safe operating conditions for railroad employees, as well as a step-up in research designed to improve safety; yet, it feels just as strongly that rules and regulations governing these conditions should be subject to realistic evaluation of the costs vs. benefits before becoming effective. TAA also believes that such rules and regulations should be developed by an impartial, expert body—in this instance, the Federal Railroad Administration—with opportunity for all affected parties to express their views.

In our opinion, H.R. 11804 violates both of these principles. The costs appear to be clearly out of line with the benefits. One provision in the bill would require railroads to build new air-conditioned dormitories completely separated from switching operations in yards. It is very difficult to see the justification of such a requirement, especially when we understand the construction costs will be around \$20 million and the annual operating costs will total about \$33 million. Other provisions in the bill will similarly add many millions of dollars a year to the carriers' costs, and we think you will agree that the railroad industry is one that needs to get the maximum productivity out of every dollar spent.

The move towards legislative rulemaking in a highly technical area—especially over carrier operations—also is unwise. One of the major purposes of creating separate administrative agencies with qualified experts to make impartial judgments on the need for rules and regulations affecting carrier operations is to minimize politically influenced decisions. H.R. 11804 is a move that is contrary to this objective, since it represents an attempt by rail labor unions to obtain through the Congress safety-related decisions that should be made by the FRA. Also, since statutory regulations tend to be fixed, the FRA has little administrative leeway to change them even if it determines that they are unneeded.

In this respect, we have noted with interest that the FRA has expressed serious concern about this legislation—because of its punitive, inflexible, and difficult-to-enforce nature. The FRA also noted the "radical departure" of the bill's ap-

proach from normal legislation, since it calls for direct regulation by the Congress of carrier operations.

TAA has long urged reform in rail work rules to permit a more efficient and economical utilization of labor—under safe operating conditions. This bill will further reduce rail labor productivity because it will require new equipment, facilities, and manpower that cannot be justified. Higher costs without an offsetting increase in productivity means greater inflationary pressures on the carriers.

For reasons such as stated above, we urge that the markup of this legislation stress the funding and research needs of railroad safety and refrain from legislative rulemaking in the operating area. We request that this letter be included in the record of these hearings.

Respectfully,

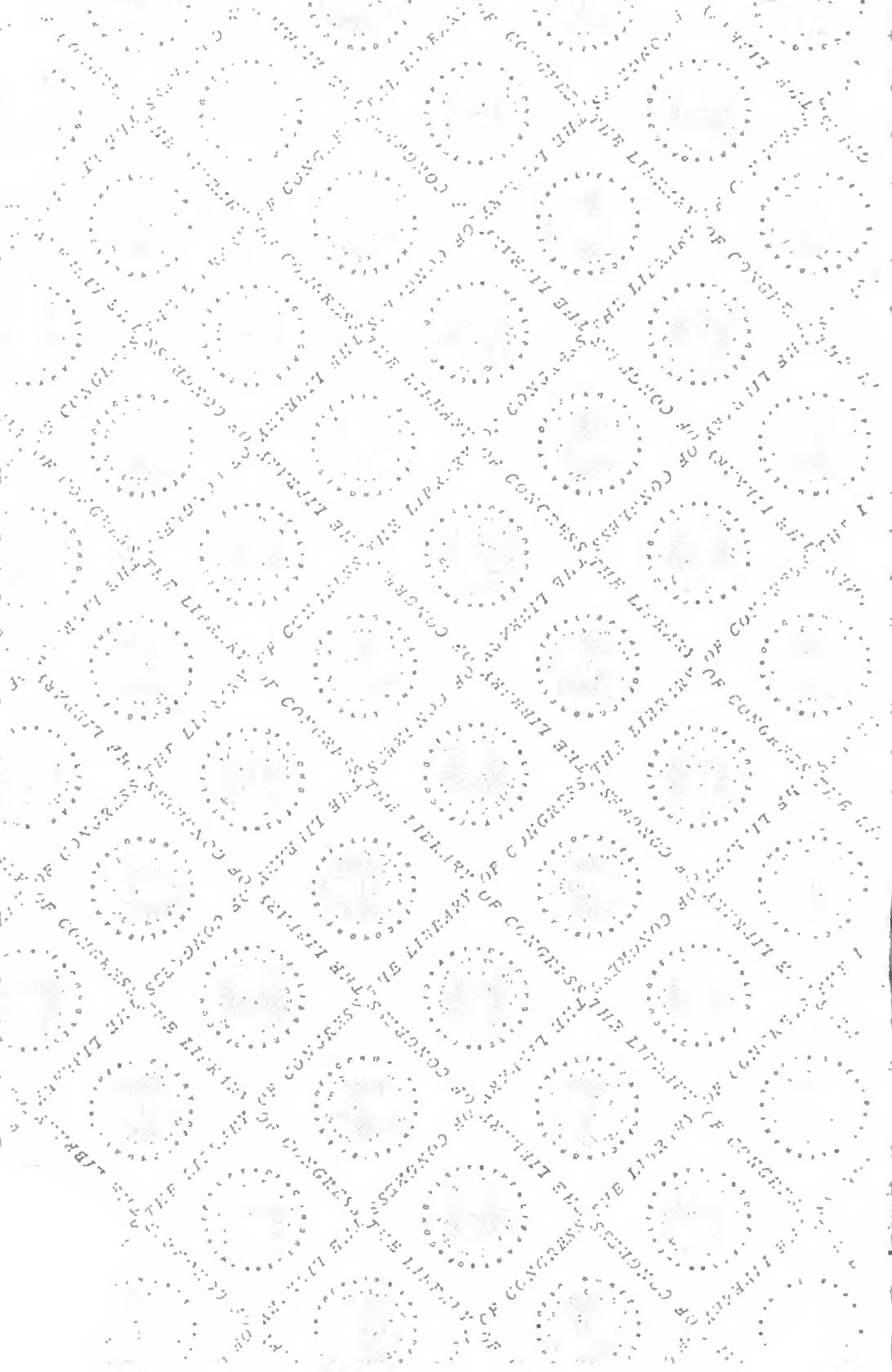
PAUL J. TIERNEY,
President.

[Whereupon, at 4 :20 p.m., the hearing was adjourned.]

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BD-305.





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