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BEFORE THE SUBCOMMITTEE ON
SURFACE TRANSPORTATION
OF THE
SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

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Good afternoon, Mr. Chairman and members of the Subcommittee. With me today representing the Federal Railroad Administration are Mr. Donald Itzkoff, the Deputy Administrator; Mr. Bruce Fine, the Acting Associate Administrator for Safety; and Mr. Mark Lindsey, the Chief Counsel.

I am very pleased to have the opportunity to testify before the Surface Transportation Subcommittee on the safety of our Nation's railroads and on the Federal railroad safety program, now entering its second century. Last fall, representatives of the Federal Railroad Administration, participating States, and the railroad industry gathered at Union Station to observe the centennial of that program, which began in 1893 when Congress passed the first Safety Appliance Act. It was during that era, in 1889, that President Benjamin Harrison addressed Congress urging passage of railroad safety legislation, saying,

> It is a reproach to our civilization that any class of American workmen should, in the pursuit of a necessary and useful vocation, be subjected to a peril of life and limb as great as that of a soldier in time of war.

Reading those words today, I feel a great sense of appreciation for the people, in and out of government, who worked so hard

over the decades to save so many lives and prevent so many injuries, and I am proud of their accomplishment. And yet, as you remember, instead of celebrating that centennial, we reflected somberly on our efforts, shaken by the knowledge of the terrible Amtrak accident at Saraland, Alabama, only the day before. These events--Saraland and the centennial--seemed a parable, a warning that, despite the many advances in the struggle to promote railroad safety, setbacks still confront us. Mr. Chairman, I went to Saraland with Secretary Peña right after the accident, and saw and felt our terrible loss there. I came away from that experience resolved that we must do more than ever to save lives and prevent injuries in this second century of the Federal railroad safety program.

In my testimony this afternoon, I will first review with you the railroad industry's recent safety record. In that context, I will next address the Administration's rail safety legislation and our efforts to enhance the agency's ongoing safety program, including our new "customer service" approach. I will detail our response to Saraland and other challenges, including issues presented by the recent Smithfield, North Carolina, incident. I will discuss our implementation of recent statutes and the work remaining under those acts and, in closing, comment on the General Accounting Office's report on Amtrak passenger car safety and on safety issues related to the next generation of high-speed-rail trains.

THE RAILROAD INDUSTRY'S SAFETY RECORD

In many respects the railroad industry experienced a mixed safety record in 1993. Overall America's railroads continue to move passengers, hazardous materials, and other freight with a high degree of safety. Although we will never be satisfied as long as accidents and injuries continue to occur, the railroad mode is, by most measures, a very safe one today; and we are working hard to make further progress, especially because we recognize the increased risk of severe accidents that could result from denser operations, increased loads, and higher speeds. To improve safety, we must continue to reduce risk across a system of almost 300,000 track miles upon which America must increasingly rely to carry freight and passengers, as part of a balanced national transportation system. The Nation's railroads employ over 200,000 persons, operate over 1.2 million cars using 20,000 locomotives, and log over 600 million train miles each year.

As you know, in 1993 we experienced two serious passenger train accidents, at Gary, Indiana, where seven people lost their lives, and at Saraland, Alabama, where 47 were killed. Both of these accidents illustrate the catastrophic consequences of human error. In Saraland, of course, that error appears to be one not attributable to a railroad or its employees. In addition, a severe freight train collision at

Longview, Washington, claimed 5 crewmembers. Much attention has focused on these tragedies, and I will detail our responsive efforts later in my testimony.

In order to provide you with a broader report on the industry's overall safety performance, I must preface my comments with two cautions. First, our safety statistics for the full year of 1993 are preliminary. That is, these data are subject to slight revisions due to late and corrected reports. Historically, such revisions have not exceeded one or two percent of the totals for most data elements, so the numbers are substantially complete. Second, the data compiled here originate with the railroads. FRA does not have the resources to verify each and every report of accident cause; however, based on our involvement in selected accident investigations and spot review of underlying records, we believe that these data, in the aggregate, fairly reflect the true pattern of accident causation.

Train accidents continue to occur in the railroad system, but with low frequency, given the scale of railroad operations. A "train accident" involves the movement of on-track equipment that results in damage to railroad equipment or property equal to an amount above the current reporting threshold, as revised periodically for inflation. (FRA is in the process of changing that threshold in a rulemaking that will employ a statutorily mandated methodology for determining the proper dollar amount.) FRA believes that the rate of train accidents is a very useful

barometer of the state of railroad safety. Certain highway-rail collisions qualify under the technical definition of "train accident." However, to avoid double counting and because they stem from different causes, we have excluded those occurrences from the "train accident" numbers that will follow.

As measured by the train accident rate, 1993 was the second safest year for the railroads, surpassed in this respect only by 1992. The 1993 train accident rate was 4.25 per million train miles, as compared with the all-time low of 3.98 in 1992. In 1993, there were 2,608 train accidents, as compared with 2,359 in 1992. These data reflect the continuing significant improvement in railroad safety since 1978, when 10,991 train accidents occurred and the train accident rate reached 14.62 accidents per million train miles, almost three and one-half times what it is now. See attached chart, "Train Accidents."

After dramatic improvements in the period 1979-1986, the train accident rate has held relatively constant. Although the frequency of train accidents remains very low, the situation has not been static. Signal accidents increased in 1993 over normal levels due to a high number of accidents in an automated hump yard. Track accidents and other accidents are up 19 percent over last year. Some of this increase in track-caused accidents may reflect the heavy rains that occurred in the Midwest during the spring and summer months, but a steep rise in the cost of replacement crossties--not offset by any

adjustment for inflation--is another possible factor. Of the 2,608 reportable train accidents in 1993--

- 37% were caused by track;
- 33% were caused by human factors;
- 14% were caused by equipment;
- 2% were caused by signals; and
- 14% were caused by miscellaneous factors such as objects on the track, vandalism, and track-equipment interaction.

See attached chart, "Train Accidents by Cause." Although human factor accidents as a whole may be less severe with respect to monetary loss because many occur at low speed, some of our most serious accidents over the past few years have been caused by human factors.

Certain trends, unfortunately, are quite evident. Every year, half or nearly half of all deaths associated with railroading occur at highway-rail grade crossings, and 1993 was no exception: 625 of the 1,278 fatalities (49 percent) occurred in these accidents and incidents. Trespasser fatalities declined slightly, but also remained relatively high at 523, or 41 percent of all fatalities. Grade crossing and trespasser fatalities still account for about 90 percent of all fatalities. See attached chart, "1993 Total Fatalities."

It is encouraging to note, however, with regard to grade crossing statistics that although fatalities at grade crossings increased between 1992 and 1993, the absolute number of grade crossing accidents and incidents reached an all-time low in 1993, or 4,888. There were 13,316 such events in 1978. See attached chart, "Highway-Rail Crossing Accidents."

The transportation of hazardous materials by rail has continued to be remarkably safe. The number of train accidents resulting in a release of hazardous materials declined from 55 in 1989 to 28 in 1993, an improvement of 49 percent in four years. There were 136 such accidents in 1978. See attached chart, "Train Accidents involving Hazmat." Since 1980, there has been only one fatality caused by the release of hazardous materials during rail transportation, and that fatality occurred in 1986.

Railroad employee safety also showed some signs of improvement in 1993 in that the rate of on-duty casualties reached an all-time low of 5.9 per 200,000 person-hours; however, employee on-duty fatalities rose to 47 (including 3 at grade crossings), as compared with 34 (including 2 at grade crossings) in 1992. This figure for 1993 represents about 4 percent of all 1,278 fatalities. See attached chart, "Employee on Duty Casualties."

Compared to 1992 data on injuries and illnesses of employees on duty, on-duty employee injuries and illnesses for 1993 declined 14 percent to 15,384. We have also evaluated

these statistics based upon a distinction between serious and non-serious injuries, with serious injuries being defined as those involving dislocation, fracture, amputation, hernia, concussion, internal injury, or loss of eye. In 1993, there were only 17 serious non-fatal injuries in train accidents (events meeting the dollar threshold for damage) and 164 in train incidents (other events involving moving, on-track equipment), or 0.1 percent and 1.1 percent, respectively of all on-duty employee injuries and illnesses. See attached chart, "Serious Injuries to Employees on Duty." By contrast, there were 1,157 serious non-fatal injuries in non-train incidents, or 7.5 percent.

It should be underscored that 26 percent of employee deaths, 87 percent of employee injuries and illnesses, and 86 percent of serious employee injuries in 1993 were in "nontrain" incidents, which, as their name implies, have nothing to do with the movement of trains. A great many of them are slips and falls, sprains, back injuries, eye injuries, and the like that, unfortunately, continue to occur in hazardous industrial settings, including railroads and other industries.

We believe FRA's safety program has played an important role in this generally good safety picture. Of course, improving railroad finances over the last decade, industry safety initiatives, and the daily efforts of railroad employees and management have had a significant effect on the situation.

We are striving constantly to improve on this record, and we must continue to find ways to reduce the frequency of train accidents, hazardous materials releases, deaths, and injuries. Toward that end, we have submitted rail safety reauthorization legislation to the Congress, and we are in the process of reinventing our safety program.

THE ADMINISTRATION'S PROPOSED LEGISLATION

Previous rail safety legislation, including the Rail Safety Improvement Act of 1988 and the Rail Safety Enforcement and Review Act (1992), mandated that FRA undertake significant rulemaking and reporting responsibilities. In addition, FRA has identified a number of other priority areas for regulatory action on its own initiative, for a total of more than 40 safety regulatory projects and reports to Congress. Recognizing the need to complete this significant agenda, we have proposed a statutory reauthorization that does not seek extensive new enforcement powers or duties.

This four-year authorizing legislation, entitled the "Federal Railroad Safety Authorization Act of 1994," includes a number of elements, however, that would significantly advance safety on our Nation's railroads.

One provision would authorize FRA, as the delegate of the Secretary of Transportation, to approve pilot projects under the Hours of Service Act, permitting the selective implementation of innovative joint proposals from rail labor

and management that vary from existing statutory requirements. The Hours of Service Act sets maximums on working hours and minimums on off-duty hours and does not permit FRA to regulate the working hours of railroad employees based on a factual record indicating what is best for safety. Consequently, we have a gap in our regulatory authority--we cannot regulate on the subject of employee fatigue. In pilot projects approved under this proposed authority, the Act's normal restrictions on maximum hours of service and minimum rest periods could be adjusted to address safety needs. While we recognize the reluctance of some in the railroad community to embrace change in this vital area, we believe that this proposal will provide the flexibility needed for progress in addressing vital concerns about operating crew fatigue and alertness in a variety of situations spanning the railroad industry.

A technical amendment in the bill would permit FRA to base a determination that an individual is unfit for safety-sensitive service upon the individual's violation of the Federal Railroad Safety Act of 1970 or one of the older railroad safety statutes, such as the Locomotive Inspection Act. Currently, FRA is authorized to disqualify an individual only for violation of a "rule, regulation, order, or standard," not for violation of a statute. In other words, while violation of a mere regulation is grounds for disqualification, violation of a direct Congressional mandate is not. This anomalous limitation is generally not a practical problem

because specific FRA regulations mirror nearly all of the substantive statutory provisions. It is mainly a problem with regard to violations of the Hours of Service Act, under which FRA has virtually no rulemaking authority.

The final amendment would change FRA's annual reporting requirement to a biennial reporting calendar. This change would make FRA's reporting load more manageable.

Passage of the Federal Railroad Safety Authorization Act of 1994 will enable FRA to fulfill its safety mission by focusing its limited resources in large part on existing regulatory mandates. This approach is consistent with the Department's efforts to make government work better and more responsively. We look to work in partnership with the members of this Committee, as we "reinvent" our entire approach to our safety and enforcement responsibilities.

REINVENTING FRA'S SAFETY PROGRAM

Including new positions to be filled this fiscal year, we employ in FRA's Office of Safety a headquarters staff of 87 and a field staff of 458, including support personnel. In addition, 135 State inspectors assist the Federal effort through the 31 State participation programs. Our Office of Chief Counsel, including the 29 members of the Safety Law Division, provides legal support for FRA's safety program. Our Office of Research and Development also contributes greatly to

the safety program and is engaged in numerous studies and projects concerning the safety aspects of track, equipment, human factors, and emerging technologies.

In 1993 FRA conducted a total of 53,129 inspections in the various disciplines: 10,283 for track; 5,889, signal; 13,473, motive power and equipment; 12,979, operating practices; and 10,505, hazardous materials. In that year FRA also investigated 150 accidents and 1,700 complaints and gave 501 Operation Lifesaver presentations to a total of over 100,000 people.

Customer Service

Soon after being confirmed as Administrator, I undertook a thorough review of our entire safety operation. Our field operation constitutes the bulk of our human resources--nearly two-thirds of the 739 employees we are authorized in fiscal year (FY) 1994 are field employees in our eight regions. Supported by a clerical and administrative staff of 57, the 401 men and women of the field staff are the inspectors and professionals who visit the railroads and make our enforcement system work, every day.

I looked at how we conducted business in Washington and elsewhere and concluded that, as an agency, we needed to change from an agency viewed as reactive to a proactive customer service center. Bruce Fine, our Acting Associate Administrator for Safety, is committed to a collaborative approach to

achieving improved levels of safety in the railroad industry. FRA must not work in a vacuum, but rather develop a new spirit of openness and cooperation with all our customers: with rail labor, rail management, suppliers, State and local governments, and users of transportation services everywhere. By sharing information and discussing options and alternatives, we can marshal the creative genius of all elements of the rail industry and increase rail transportation safety.

The main focus of our efforts will be to build on our past record of accomplishment by re-engineering our management tools and improving customer service. President Clinton, in Executive Order 12862, entitled "Setting Customer Service Standards," has directed agencies to provide

> the highest quality service possible to the American people. Public officials must embark upon a revolution within the Federal Government to change the way it does business. This will require continual reform of the executive branch's management practices and operations to provide service to the public that matches or exceeds the best service available in the private sector.

In accomplishing this directive, we have already started a dialogue with our customers. In 1993 I initiated Administrator's roundtable discussions with representatives from rail labor, management, suppliers, and other customers to discuss a single subject in depth. Most of our roundtable topics are related to safety. To date, seven roundtables have been held, three more are scheduled, and more are contemplated. The participants have been enthusiastic about the opportunity to discuss directly with the Administrator the real rail issues

they face and ideas for working with FRA more beneficially. We are not forgetting our "in-house" customers. Quarterly listening sessions for all FRA employees help everyone understand FRA's mission, policies, and program activities. It is an opportunity for a candid sharing of crucial information.

Full use of existing FRA management tools will help us formulate standards and measure results to improve customer service. The National Inspection Plan, the Quality Improvement Program, and the Regional Inspection Points Program will anchor FRA's re-engineering process. These programs focus on our agency's key asset--the time that FRA inspectors have available to conduct inspections. We have worked hard, using these tools, to ensure that our inspectors spend their available time at locations of greatest need and to conduct quality inspections, rather than producing inspection reports and paper.

The National Inspection Plan, or "NIP," model allocates annual available inspection time to a railroad, by state, based on the railroad's risk factor history. Regional managers use this and other current information (qualitative and quantitative) to formulate their inspection plan activity for the year.

The Quality Improvement Program, or "QIP," which was simplified in 1992 in response to field recommendations, comprehensively analyzes inspector activity, telling us, for example, that 38 percent of inspectors' time on average is used

exclusively for inspections, as distinguished from accident investigation, complaint work, travel, and other duties, and that, on average, Federal inspectors spend at least 15 days a month working in the field. QIP helps us plan better by using information on the amount of time needed for all inspector activities.

Another resource-allocation tool, the Regional Inspection Points Program, or "RIP," contains an extensive inventory of railroad operations (track miles, signal systems, train movements, etc.) gathered by inspectors. Collection of RIP data has been planned so as not to unduly interfere with enforcement activity.

Using these management tools, our safety program managers are better able to focus inspectors' efforts on the safety matters deserving the greatest attention. Consequently, FRA has more accurate data about railroads' level of safety and can strategically apply sanctions where necessary to deter unsafe practices.

Enforcement

FRA has an active and effective enforcement program designed to deter noncompliance. In FY 1993, FRA collected $15.6 million in civil penalties (its second highest total ever), including $2.6 million under the Hazardous Materials Transportation Act. In the area of individual liability, three civil penalty cases were closed in FY 1993, and four have been

closed so far in the present fiscal year. Four other civil penalty cases against individuals are pending. In FY 1993, we issued one disqualification order, and in FY 1994 we have issued one notice of proposed disqualification. In addition, our Office of Chief Counsel issued two warning letters to individuals, and our regional directors issued more than 40 regional-level warnings to individuals in FY 1993.

Due to limited resources and an extremely heavy workload, as recently as 1991 our civil penalty program was not as timely as it should have been. By the beginning of 1989, there was a large backlog of violation reports on which civil penalties had not been assessed and additionally the 1988 safety act had given the agency its largest regulatory workload in history. We have attacked the problem systematically and with excellent results. We have increased the number of staff attorneys in our Safety Law Division from seven to seventeen and added five more secretaries and one more supervisor. Attorney productivity has dramatically increased by re-engineering FRA's case generation system. With the resources sought in the FY 1992 budget request, we reached our goal of achieving an average transmittal time of 120 days or less. We have now exceeded this goal, and with the needed resources, we can continue to do so.

Response to Saraland Accident

FRA recognizes that intermodal intersections present safety risk for which coordinated responses may be needed. Last September near Mobile, Alabama, a tow of barges accidently struck a railroad bridge located well off its intended course, leading to 47 fatalities among the passengers and crew of Amtrak's Sunset Limited. Clearly, the tow boat should not have moved up that bayou in dense fog, and the bridge was a low-risk location for such an accident to happen; however, as safety professionals, we still look for ways to prevent a recurrence of this kind of tragic event. Just as the United States Coast Guard is working diligently to implement stronger safety measures for inland-waterway barge operations, FRA is exploring whether cost-effective answers can be found to the problem of detecting bridge damage before it causes a tragedy. FRA is also working with the Coast Guard to ensure that more timely notice is provided of bridge damage.

Response to Gary and Longview Accidents: FRA's Advanced Train Control System Efforts

FRA is placing the highest priority on promoting the early implementation of new technology to prevent collisions such as those that cost the lives of seven passengers at Gary, Indiana, and five crewmembers at Longview, Washington. The technology we choose should also be capable of preventing overspeed derailments and protecting workers performing roadway

maintenance (where they are granted exclusive use of track or slow orders are imposed on adjacent track). We refer to this package of objectives as "positive train control."

We agree with the National Transportation Safety Board that the industry needs to make investment decisions and establish a firm timetable for testing and installation of some form of positive train control system. Toward that end, I have conducted a series of three roundtable discussions with a broad range of industry parties, including labor and suppliers. We have commissioned a technical review, by the Institute on Telecommunications Sciences, of the AAR Advanced Train Control Systems (ATCS) program. That project has reviewed the feasibility of the ATCS specifications and has identified the steps the industry and we would need to take to help make ATCS a reality. We have requested funding in the FY 1995 President's Budget for development of risk analysis model to determine priorities for application of positive train control where justified.

The industry has begun to respond. On April 29, the Union Pacific (UP) and Burlington Northern (BN) railroads took the first important step toward implementation of positive train control by announcing a major test program on major lines in Washington and Oregon. UP and BN will request bids for this project by October 1. FRA has promoted the concept of a test

bed as a critical first step in achieving the safety benefits of positive train control. The UP/BN project fulfills this need.

On the same day the UP/BN venture was announced, the Association of American Railroads (AAR) Board of Directors voted their support. UP and BN will be working with the AAR to ensure compatibility (interoperability) between the UP/BN system and other systems built to ATCS specifications. I am very encouraged that the UP/BN project is well integrated into their overall business plan. In my judgment, this likely portends installation of the system on a substantial portion of those very large railroads.

FRA has also received additional information from the AAR regarding future planning for ATCS. We are currently reviewing this data and preparing our report to the Congress due July 3, 1994, under the Rail Safety Enforcement and Review Act.

Response to Smithfield Accident: Special Safety Review of Lading Securement

I would like to move on now to another FRA initiative, one related to preventing another kind of collision, namely raking collisions in which lading of a train consist on one track collides with parts or lading of a consist on an adjacent track or with a structure, such as a bridge.

In the wake of the recent Amtrak accident on May 16 at Smithfield, North Carolina, FRA has begun to conduct a special

safety review of how lading is secured on rail cars. While the National Transportation Safety Board has yet to determine the probable cause of the accident, our preliminary investigation indicates that the Amtrak train struck a trailer that had shifted on a flatcar of a CSX freight train operating on an adjacent main track. As a result, the Amtrak assistant engineer was killed, and 122 passengers and crew were injured and received medical attention. The Amtrak engineer was injured critically.

The collision at Smithfield together with the doubling of trailer/container train traffic in the last decade and the growth in passenger rail service demanded a thorough, comprehensive review of the standards and procedures used to secure freight on rail cars. FRA recognizes the importance of immediately identifying and swiftly addressing any potential safety risks that may exist for rail passengers as well as Amtrak and freight railroad employees.

By way of background on the issue of lading securement, the railroad industry uses the AAR standards for securing freight not classified as a hazardous material. Of course, the Research and Special Programs Administration's Hazardous Materials Regulations, which are enforced by FRA in the rail mode, govern securement of hazardous materials. Regarding securement of ordinary lading, FRA standards for inspection of freight cars by train crewmembers require that a crewmember (i) inspect a freight car wherever it is placed in a train and (ii)

determine prior to departure of the train whether the car has any "object extending from side." Operating rules of the railroad also uniformly require train crews to inspect trains for unsafe conditions, including shifting loads. FRA regulations require that such operating rules be filed with FRA and that railroad employees be periodically instructed and tested on operating rules. FRA regulations further require railroads to train their employees and conduct inspections to ensure compliance with their operating rules.

FRA is making this review of lading securement one of its top priorities. We are working closely with Amtrak and the freight railroads to ensure a prompt analysis of all aspects of how freight is secured. According to our accident database, during the last five years there have been 18 accidents involving shifting containers or trailers, not including the Smithfield accident. While the number of reported incidents similar to the Smithfield accident is low, we want to prevent future problems. This is at the heart of FRA's safety mission. We will have our preliminary findings and a plan of action to the Secretary before the end of July.

Highway-Rail Crossing Emphasis

We believe that the new resources granted in the President's Budget for FY 1994, as enacted by Congress, will help us provide better focus from the rail side on reduction of risk at highway-rail crossings, complementing the efforts of

the Federal Highway Administration, States, local governments, and thousands of Operation Lifesaver volunteers. All of us must be part of the solution to this intermodal transportation safety problem, and the tragic numbers clearly point to the need to continue aggressive engineering improvements (including consolidation of crossings), research, education, and law enforcement and a new emphasis on corridor-wide approaches to grade crossing issues.

Secretary Peña has directed FRA, the Federal Highway Administration (FHWA), the Federal Transit Administration, and the National Highway Traffic Safety Administration to develop a new comprehensive action plan for improvement of safety at crossings. This is the first time in history that these modes have worked so closely as a team to address these critical transportation safety problems. The action plan will build on the momentum we have already achieved.

We are already well positioned to begin a new initiative in this area. In response to the President's Budget for Fiscal Year 1994, the Congress has funded a small cadre of grade crossing safety and trespasser-prevention managers--the first FRA field resources fully dedicated to grade crossing and trespasser safety. These individuals will work with FHWA to help State and local communities design and execute corridor safety improvement programs. We will also be working to bring to a swift conclusion the Congressionally-mandated rulemaking on maintenance of grade crossing warning systems, for which the

notice of proposed rulemaking (NPRM) was issued on January 11, 1994. Further, FRA will move promptly to require auxiliary locomotive lighting that will make trains more conspicuous to motorists.

Human Factors Emphasis

As dictated by the continuing prominence of human factors in the train accident rate (33 percent of the total in 1993), FRA is placing renewed emphasis on the performance of safety-critical personnel. We do so by ensuring that human factors receive appropriate attention in our enforcement, regulatory, and research programs. For example, our safety personnel are urged to use disqualification authority and individual civil penalty liability where officers or employees of the railroad deliberately violate safety requirements.

Our program to control alcohol and drug use in railroad operations further underscores our commitment. This is an area in which we have made significant progress. In 1988, our total positive rate for alcohol and drugs in post-accident testing was 6 percent. The prior year, 1987, was punctuated by serious alcohol- and drug-involved accidents, including the Chase, Maryland, collision. All of our data indicate that the picture is improving, as testing programs and voluntary peer prevention efforts take hold.

I am happy to report that, based on data that are substantially complete, random drug testing in the railroad industry last year showed a reduction in positive test results for the fourth consecutive year. Reports indicate that of more than 42,000 random tests administered in 1993, only 0.7 percent of employees tested positive. In 1993 mandatory post-accident testing, 2 percent of employees tested positive for prohibited use of alcohol or drugs, down from 6 percent in 1988, and slightly less than the 2.1 percent recorded in 1992. In "reasonable cause" breath alcohol testing, 1.6 percent of employees tested positive, down from a high of 4.5 percent in 1988, but slightly higher than 1.16 percent in 1992. In 1993, 1.9 percent of employees tested positive for drugs in reasonable cause tests, down from a high of 3.6 percent in 1989 and down from 2.07 percent in 1992. Our preliminary information indicates that in only one of the accidents in 1993 that we investigated was the person who tested positive for drugs or alcohol involved in the cause.

FRA continues to support necessary chemical testing and voluntary efforts to address substance abuse in the railroad work place. On February 15, in response to the Omnibus Transportation Employee Testing Act of 1991 ("Hollings/Danforth Act"), FRA published additional alcohol and drug rules. These amendments require railroads to conduct random alcohol testing and mandatory "reasonable suspicion" testing for alcohol and drugs.

We also actively enforce our rule on qualification of locomotive engineers, which seeks to prevent deficiencies in operator fitness, training, and performance.

However, the current reality is that human performance continues to be a factor in train accidents and incidents, as well as in non-train fatalities and injuries. One of the chief problems appears to be fatigue related not to violations of the Hours of Service Act, but rather, perhaps, to variable work schedules and lack of time off. If Congress adopts our legislation authorizing pilot programs under the Hours of Service Act, we can begin to address these certifiably legal sources of fatigue.

Unfortunately, fatigue is not readily susceptible to an instant solution. Precipitous action could very well make the situation worse, rather than better. However, in addition to proposing this pilot-project authority, we have initiated actions that, over time, will permit us to achieve a better understanding of underlying performance problems. These actions include better definition of existing work and rest cycles and basic research concerning the extent and manner in which irregular hours and other stresses affect fatigue and locomotive operator performance.

FRA is presently sponsoring two research projects on fatigue. First, FRA's Office of Policy has a research project with the Volpe National Transportation Systems Center concerning locomotive crew-calling practices and the

relationship of calling practices to crew fatigue. Diaries on work and rest activity will be collected from approximately 400 locomotive engineers. So far at least 200 diaries have been returned from employees on three different railroads. The Volpe Center will be collecting additional diaries from engineers on two other railroads. Employees are asked to rate their degree of "sleepiness" and the quality of their sleep. Second, FRA's Office of Research and Development has a project to evaluate 56 locomotive engineers on simulated, realistic duty cycles and to determine which criteria are critical to engineer alertness. This project, which also deals with the effects of stress, is using FRA's locomotive and train-handling simulator at IIT Research Institute in Chicago. Because only one engineer can operate the simulator at a time and each test requires a week, it will take approximately two years to complete this study. The project is designed to test degradation of engineer performance under known schedule and operating conditions, including work/rest cycles, circadian displacement, sleep deprivation, temperature, humidity, vibration, noise, and related variables. The project is expected to yield results that could be used to develop regulations affecting hours of service, crew-calling and scheduling practices, alertness monitoring, locomotive cab environment, or other matters involving crew vigilance.

Coordination with the States

The State rail safety inspectors are crucial to improving rail safety. FRA's relationship with the 31 States that assist in the enforcement of the Federal railroad safety laws is very important to me. In addition to regular FRA/State meetings, at both the regional and national levels, once a year all FRA Safety headquarters officials and regional directors and State program managers meet together to discuss rail safety concerns. Once the final grade crossing rule is issued, we expect States to be actively involved in its enforcement. State inspectors are regularly invited to settlement conferences concerning civil penalty cases they have initiated. In addition, we are fully involving State inspectors in our new training program by coordinating with the States to assess their training needs and have improved our reporting to the States to keep them up to date on issues of mutual concern by increasing the frequency of our reports to them on such matters as QIP performance and rail safety accident and inspection statistics. We are also doing outreach to encourage other States to join our program.

SAFETY REGULATORY AND REPORTING PROJECTS

The core of FRA's safety program, of course, is the body of safety statutes and regulations our agency administers. As mentioned earlier in our discussion of the Administration's bill, FRA presently has pending over 40 rulemaking actions or reports to Congress. Their number allows me to provide only

highlights. FRA has completed all but two of the initiatives contained in the Rail Safety Improvement Act of 1988 (RSIA) and is hard at work to produce the rules and reports mandated in 1992 by the Rail Safety Enforcement and Review Act (RSERA) or other recent enactments. In addition, FRA has developed its own agenda of regulatory items needing attention and hopes to be able to act on that agenda as the mandatory rulemakings near completion.

FRA's Recent Regulatory Accomplishments

FRA has made important strides in the regulatory area in 1993 and the first half of this year. In that period, FRA has issued final rules on event recorders, random alcohol testing, and protection of utility employees; interim final rules on engineer qualifications and locomotive conspicuity devices; and proposed rules concerning (i) reporting of actions taken to remedy safety violations, (ii) tank car crashworthiness, (iii) tank car inspection, and (iv) hazardous materials containers on flat cars. Many other regulatory notices and reports have, of course, been researched and at least partially drafted in this period, a number of which are very close to issuance.

Remaining Statutory Mandates

The only rulemaking not completed from the RSIA is the final rule on maintenance, inspection, and testing of grade

crossing warning devices. Our final rule setting new requirements for reporting problems with grade crossing signal devices was published July 23, 1991. As you know, FRA considered this a necessary predicate to improving our data base on problems related to the safety of grade crossing devices. A proposed rule concerning timely response to grade crossing signal system malfunctions was published June 29, 1992. A second, expanded proposed rule was issued January 11, 1994, and a hearing held on March 1, 1994. The latter proposed rule covers maintenance, inspection, and testing of grade crossing signals. FRA expects to complete its draft final rule for further review within the Administration this summer. Issuance of this final rule is FRA's highest regulatory priority.

The only remaining report required by the RSIA concerns grade crossing demonstration projects. Now that Kansas State University has completed "Highway-Rail Crossing Safety Demonstrations," a look at the use of enhanced reflectorized signs at rural crossings without signals, FRA's final report will be published in the near future.

Under RSERA, FRA is working on a large number of projects that are in various stages of completion. A brief summary of each follows.

- Power Brake Rule Revision: RSERA allowed until December 31, 1993, or only 16 months, for issuance of the final rule. A voluminous draft NPRM is under review within the Administration. FRA's Advance Notice of Proposed Rulemaking (ANPRM), published on December 31, 1992, and four public workshops, held in February and

March 1993, generated 1,000 pages of oral testimony and 5,000 pages of written comments. The draft NPRM also addresses issues raised in 1990 petitions filed by the United Transportation Union and the Brotherhood of Locomotive Engineers. The numerous, highly technical issues involved in this rulemaking require careful, deliberate consideration.

- Rail Transport Of Hazardous Materials [Report To Congress]: Due in final on September 3, 1993, the draft report is being reviewed within FRA. The staff members assigned to prepare this report were also busy working successfully to meet a September 30, 1993, deadline on issuing two proposed rules dealing with tank car safety.

- Dispatchers [Report To Congress]: Due in final on March 3, 1994, a voluminous draft report is being reviewed within FRA. Additional time has been necessary in order to meet with, and receive comments from, the American Train Dispatchers.

- Radio Communications/ATCS [Report To Congress]: FRA held a public inquiry on this issue on March 29. The report, due July 3, 1994, is being prepared.

- Track Standards Revision: The final rule is due September 3, 1994. An NPRM is being drafted. This will actually be two separate rules: one on track structures, the other on the protection of track workers. The Brotherhood of Maintenance of Way Employees and Brotherhood of Railway Signalmen have asked FRA to issue emergency orders addressing the latter, and we are carefully considering their requests.

- Remedial Actions Reporting: The NPRM was issued in June 1993. The draft final rule, due to be issued in final on September 3, 1994, is being reviewed within FRA.

- Regional Attorney Pilot Project [Report to Congress]: The report is due September 3, 1994. The Kansas City phase of the project ended in December 1992; the Atlanta phase of project began in February 1993.

- Locomotive Crashworthiness and Working Conditions: A report or rule is due March 3, 1995. Research on technical issues continues. This, too, is likely to become two rules: one on crashworthiness, the other on locomotive working conditions.

- Accident Reporting Threshold Revision: An NPRM addressing this issue and others is being drafted.

In addition to RSERA, there are other statutorily mandated projects to be completed. As you know, the pending hazardous materials reauthorization may well require issuance of final rules on tank car inspection (HM-201) and tank car crashworthiness (HM-175A). That legislation may also require a study of the placement of hazardous materials cars in a train and, perhaps, the make-up of trains. Also, under a different statute, FRA must issue a final rule on locomotive conspicuity by June 30, 1995.

FRA's Own Regulatory Agenda

In addition to these mandated actions, FRA is pursuing a number of important safety subjects that were of necessity put aside in the wake of the substantial requirements of the RSIA, RSERA, and other recent statutes. These include such matters as the drafting of rules concerning high speed rail trainsets, improvements to our engineer certification rule, operating rules filing, maintenance-of-way freight cars, amendments to our bridge worker safety rule, and a variety of needed changes to our procedural rules. FRA also has pending a variety of other regulatory matters that need attention, e.g., the AAR's rulemaking petition regarding discolored wheels and petitions for reconsideration of the utility employee rulemaking. As you can see, our rulemaking agenda is already very full. We solicit the Committee's support of our efforts to complete the current agenda before significant new items are added to it.

GAO REPORT ON AMTRAK PASSENGER CAR SAFETY

In its September 1993 report, GAO asserted that Amtrak has not been effectively implementing its system to ensure that passenger cars comply with its internal maintenance standards, that Amtrak has been deferring maintenance for budgetary reasons without identifying safety-critical thresholds beyond which cars would not be allowed to operate, and that FRA has issued few regulations for passenger cars and lacks minimum safety standards for most passenger car mechanical components. Based on these findings, GAO recommended that FRA take two actions: first, that FRA conduct a study of all passenger railroads to determine whether it is necessary to issue passenger car component regulations and, second, that FRA issue any such regulations that the study shows advisable, taking into account the passenger railroads' own internal standards regarding such components.

In FRA's judgment, Amtrak and the other passenger railroads have had a strong safety record overall, especially as that record relates to accidents caused by mechanical problems on passenger cars. See attached chart, "Federal Railroad Administration Accident Statistics Regarding Passenger Equipment Safety."

FRA has begun to conduct an intensive nationwide compliance survey on the Amtrak system. In addition, FRA is working with Amtrak to ensure that Amtrak has defined minimum safety standards for safety-critical components and will verify

compliance with those standards through field inspections. Finally, FRA will in the near future propose revised requirements for inspecting safety-critical components of conventional passenger equipment with regard to power brake safety and is working to develop safety standards appropriate to the next generation of high speed rail equipment that will first begin operating in the Northeast Corridor toward the end of this decade.

HIGH SPEED RAIL

Current regulations permit train operations to 110 miles per hour under specified conditions. Amtrak operates Metroliner service to 125 miles per hour between Washington and New York under a longstanding waiver. Of course, the Northeast Corridor from Washington to New York is principally dedicated to passenger movements during peak hours, and the line is fully grade-separated. Many enhancements in the safety of operations have been made along this route, and we continue to look for additional opportunities to reduce accident risk.

The challenge now before us is to define conditions under which high speed rail can be safely provided on other corridors where passenger and freight operations share the right of way and many highway-rail crossings currently exist. FRA has approached this challenge with both short-term and longer-term strategies. The long-term strategy began with the extensive set of high speed ground transportation safety studies under

our research and development program. This strategy will, over a period of several years, yield a broad range of generic safety standards for high speed rail.

Our short-term strategy focuses on the North End of the Northeast Corridor (New York to Boston), where speeds to 150 miles per hour will be required to meet statutory trip-time goals. The North End is a very active program for which the Administration has requested substantial resources, and we are committed with Amtrak to seeing this project to a successful implementation. We are working with Amtrak and other participants to ensure that safety is its foundation. We also recognize that this planning process provides a valuable opportunity to test our general high speed rail safety objectives against very concrete challenges. Stated differently, specific focus on the North End will be necessary both to deliver safety guidance for that project in a timely manner and to provide the experience on which generic standards can later be founded.

We have interwoven our long-term and short-term strategies in the following way, summarized by the technical subject matter:

High speed trainsets. The first acquisition of trainsets for service at greater than 125 miles per hour will be Amtrak's procurement of 24 electric trainsets and 2 non-electric trainsets under the Northeast Corridor Improvement Project. FRA is working intensively with Amtrak to ensure that all

significant safety-relevant objectives are incorporated into its forthcoming procurement. This dialogue is providing important insights that will help FRA as we move toward generic high-speed-rail equipment standards.

Our generic rulemaking for high speed equipment will begin this year, and we will proceed the rulemaking at a pace consistent with (i) faithful completion of statutorily mandated rulemakings and (ii) progress in development of other high speed corridors. Meanwhile, a very important element of equipment safety--the power brake system--will be addressed through our current revision of the power brake regulations.

Track safety. Track safety at speeds above 110 miles per hour requires careful attention to vehicle/track interaction, as well as the track structure itself. Our forthcoming notice of proposed rulemaking on revision of the Track Safety Standards will address this issue.

Signals and train control. The North End presents special challenges because of Amtrak's determination that much of the infrastructure of the existing cab signal/automatic train control system should be used as a building block for a new system. The new system will meet critical performance criteria that FRA has asked Amtrak to employ in designing its system:

- Positive stop, i.e., the train control system will not allow a train to pass a key control point without authorization, even if the operator acknowledges the cab signal indication;

- Speed control, including civil engineering speed restrictions (at curves, bridges, stations) and temporary slow orders.
- Protection of maintenance-of-way forces working on track.

Because Amtrak's proposed system involves novel technology and will affect multiple operators on the NEC, FRA will soon propose an appropriate order. The scope of this proceeding will be positive train control on the Northeast Corridor under future conditions where train speeds increase.

At a later date, FRA will deal with signal and train control performance requirements on other high speed corridors. Because the technology employed on those corridors may be communications-based and software-driven, it may present unique regulatory issues regarding verification of fail-safe characteristics. That rulemaking will, of necessity, be undertaken only after technology development has reached a more advanced stage.

Highway-rail crossings. The North End of the NEC has 15 highway-rail grade crossings remaining, and we are working to make further reductions in this number. Under no circumstances will train speeds over any remaining crossings exceed 100 miles per hour, and further improvements in crossing warning systems will be undertaken as necessary. Under section 1036 of the Intermodal Surface Transportation Efficiency Act (ISTEA), FRA is funding several promising approaches to risk reduction at

grade crossings, including an installation of four-quadrant gates and a vehicle-detection system at the School Street crossing in Groton, Connecticut. FRA is also working with States and developers to examine barrier systems capable of preventing entry onto a high speed rail line.

FRA's guidelines under section 1010 of ISTEA prohibit any at-grade crossings where train speeds exceed 125 miles per hour and permit crossings above 110 miles per hour only if effective barrier and detection systems, interlocked with the signal system, are successfully demonstrated and implemented. As the range of options for warning/detection systems and barrier technology continues to grow and additional corridor projects proceed, it will be timely to conduct a rulemaking on grade crossings as an element of high speed rail safety.

System safety integration. Ensuring that overall system safety has been planned as an integral element of a high speed rail program requires attention to integration of safety measures and, in addition, consideration of a wide range of safety issues that are not addressed by existing FRA standards. Since these issues involve potentially complex tradeoffs among possible countermeasures, once certain basic standards have been shown to be satisfied, it will always be appropriate to consider a high speed rail project as a whole and on its own merits.

At an appropriate time in the planning process, FRA expects to conduct a North End system safety proceeding to address such matters as security of the right of way (against inadvertent incursion, vandalism, trespassing, etc.), detection of damage to structures, operating rules and practices, emergency preparedness, etc. That proceeding may yield insights that will help FRA fashion a more generic approach to acceptance of system safety plans applicable to high speed operations.

Track aspects of high speed operations are being addressed in the revisions to the Track Safety Standards currently being drafted and which should be issued as proposed rules in 1994. As high speed operations begin to develop outside the Corridor, many other issues will confront us, perhaps the greatest of which is grade crossing protection. At higher train speeds, grade crossing collisions become an increasing threat to the railroad vehicles involved and their occupants. Accordingly, FRA is sponsoring research on innovative systems, such as mobile barriers, designed to prevent the intrusion of vehicular traffic onto the railroad right of way rather than just warning that traffic of oncoming trains. Of course, if entirely new systems on completely separate rights of way are developed, we will need to address those through more comprehensive rules that recognize the interdependent nature of the components of such systems. For example, a maglev system or a 200-m.p.h., stand-alone, steel-wheel system raises many issues we do not

yet face in operations that take a more phased approach. In this way, we plan to provide high speed ground transportation the regulatory attention it merits in the large scheme of railroad safety, knowing that our limited resources must focus on immediate needs without losing sight of the future.

CONCLUSION

FRA's safety program, which has helped produce dramatic improvements in railroad safety in the last decade, is being reinvented in many ways to enable FRA to meet the challenges of this decade and the next century. We are establishing or improving several programs that will enhance our ability to make rational regulatory and enforcement decisions based on better data on inspections, compliance, accidents, and incidents and that will result in even higher quality customer service. The changes we are implementing are prompted by the policy initiatives of the President and the Secretary and by the sound advice of the experienced and capable career professionals in our Offices of Safety, Research and Development, and Chief Counsel and in participating State programs. FRA is committed to working with all segments of the railroad industry to improve railroad safety. At the Federal, State, and local levels, we continue to strengthen existing

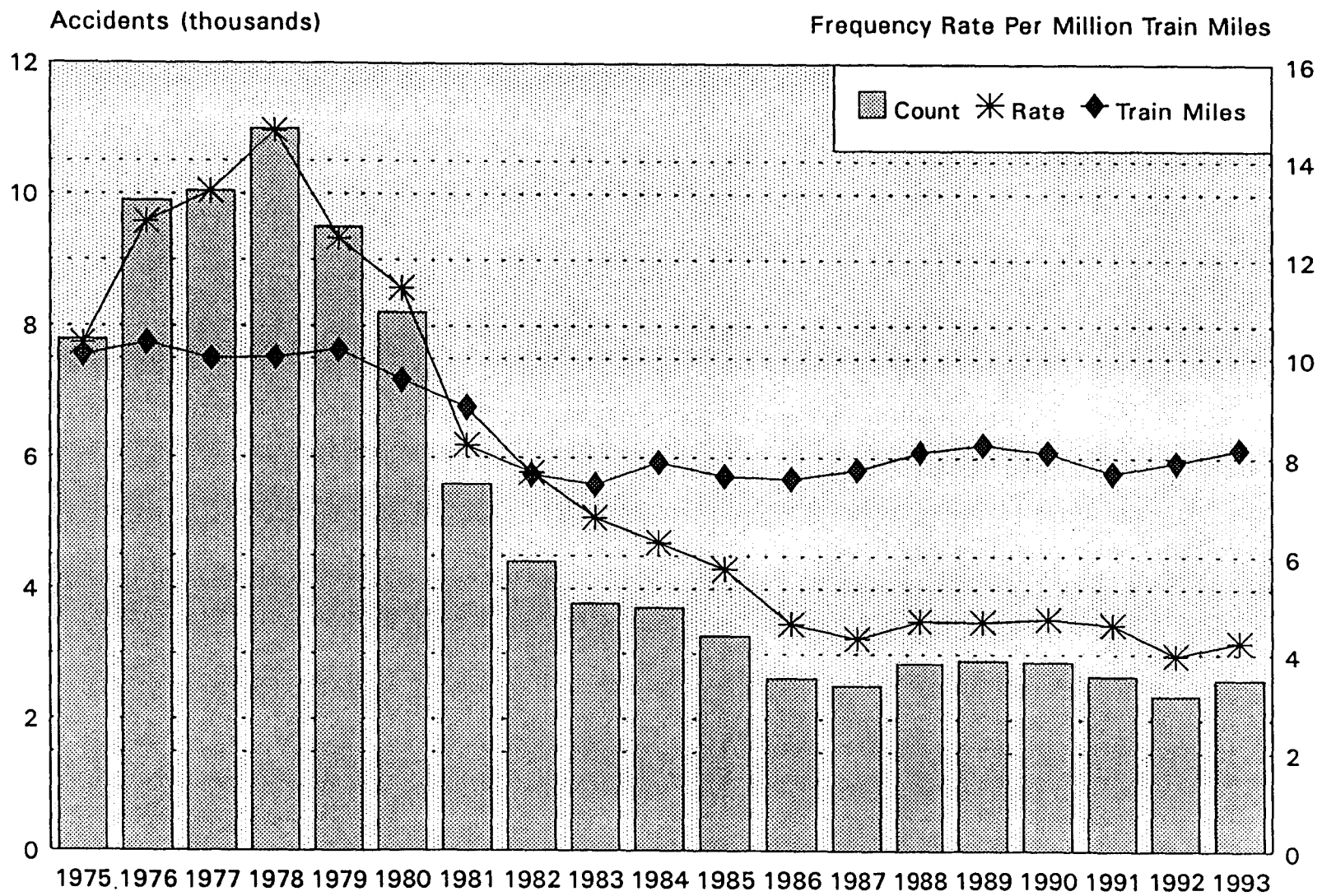
programs and cultivate new programs that bring us closer to achieving our goal--improved safety.

In closing, Mr. Chairman, thank you for inviting us here today. We will be happy to respond to any questions.

TABLE OF ATTACHMENTS

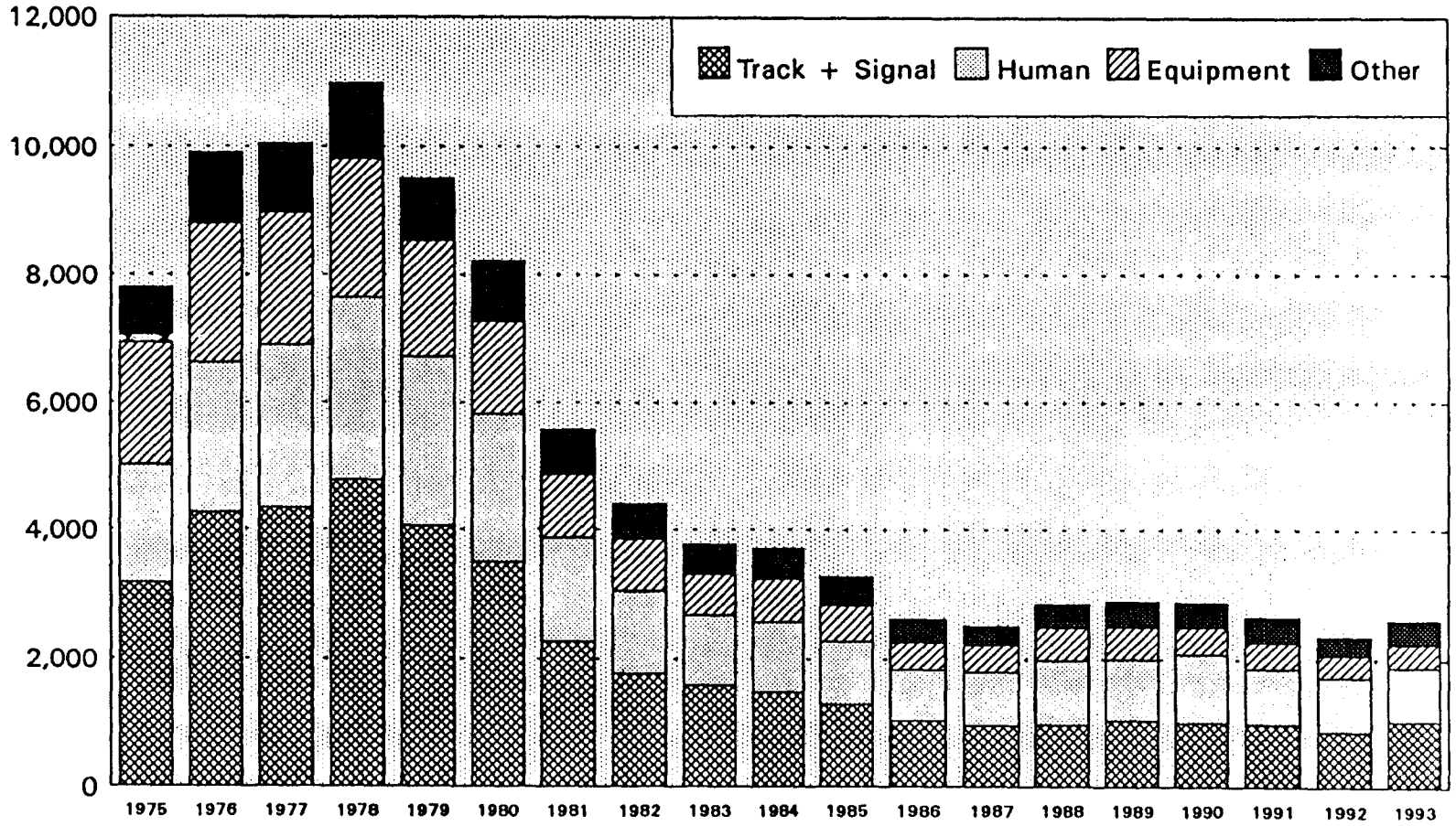
1. "Train Accidents"
2. "Train Accidents by Cause"
3. "1993 Total Fatalities"
4. "Highway-Rail Crossing Accidents"
5. "Train Accidents involving Hazmat"
6. "Employee On Duty Casualties"
7. "Serious Injuries to Employees on Duty"
8. "Federal Railroad Administration Accident Statistics Regarding Passenger Equipment Safety"

TRAIN ACCIDENTS



In order to obtain comparable scaling, train miles have been divided by 100,000 in this chart.
Train miles are displayed using the left axis.
Excludes highway-rail accidents/incidents. 1993 counts are preliminary.

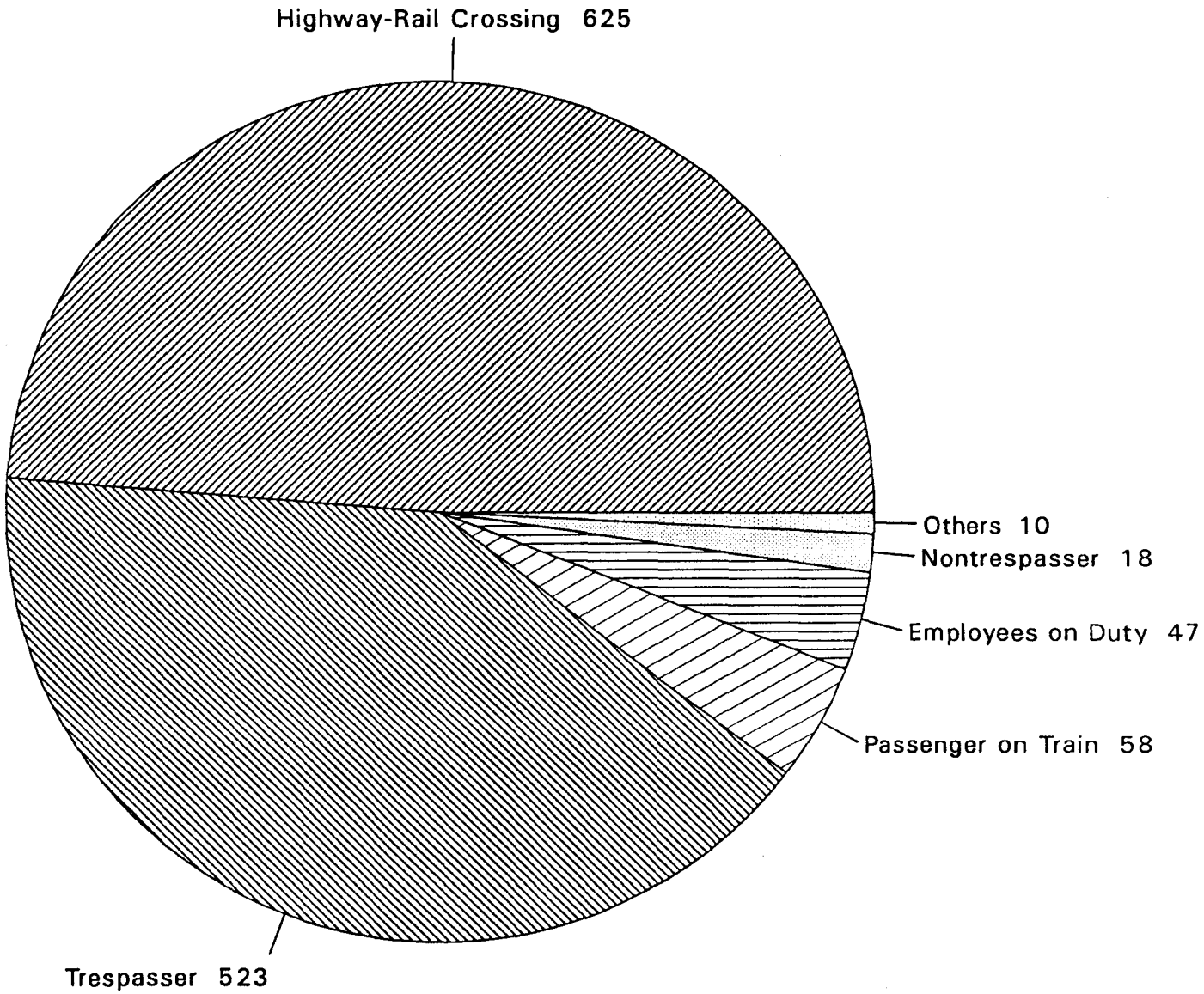
TRAIN ACCIDENTS BY CAUSE



	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total	7,793	9,896	10,040	10,991	9,492	8,205	5,582	4,411	3,776	3,712	3,275	2,620	2,512	2,854	2,898	2,879	2,658	2,359	2,608
Other	866	1,107	1,080	1,181	967	932	697	563	458	472	439	355	288	359	396	371	388	293	368
Equipment	1,906	2,172	2,064	2,169	1,815	1,458	1,016	795	636	661	559	433	430	512	501	425	415	353	360
Human	1,846	2,359	2,559	2,844	2,660	2,323	1,596	1,284	1,101	1,098	998	816	856	1,031	982	1,095	887	864	864
Track + Signal	3,175	4,258	4,337	4,797	4,050	3,492	2,273	1,769	1,581	1,481	1,279	1,016	938	952	1,019	988	968	849	1,016

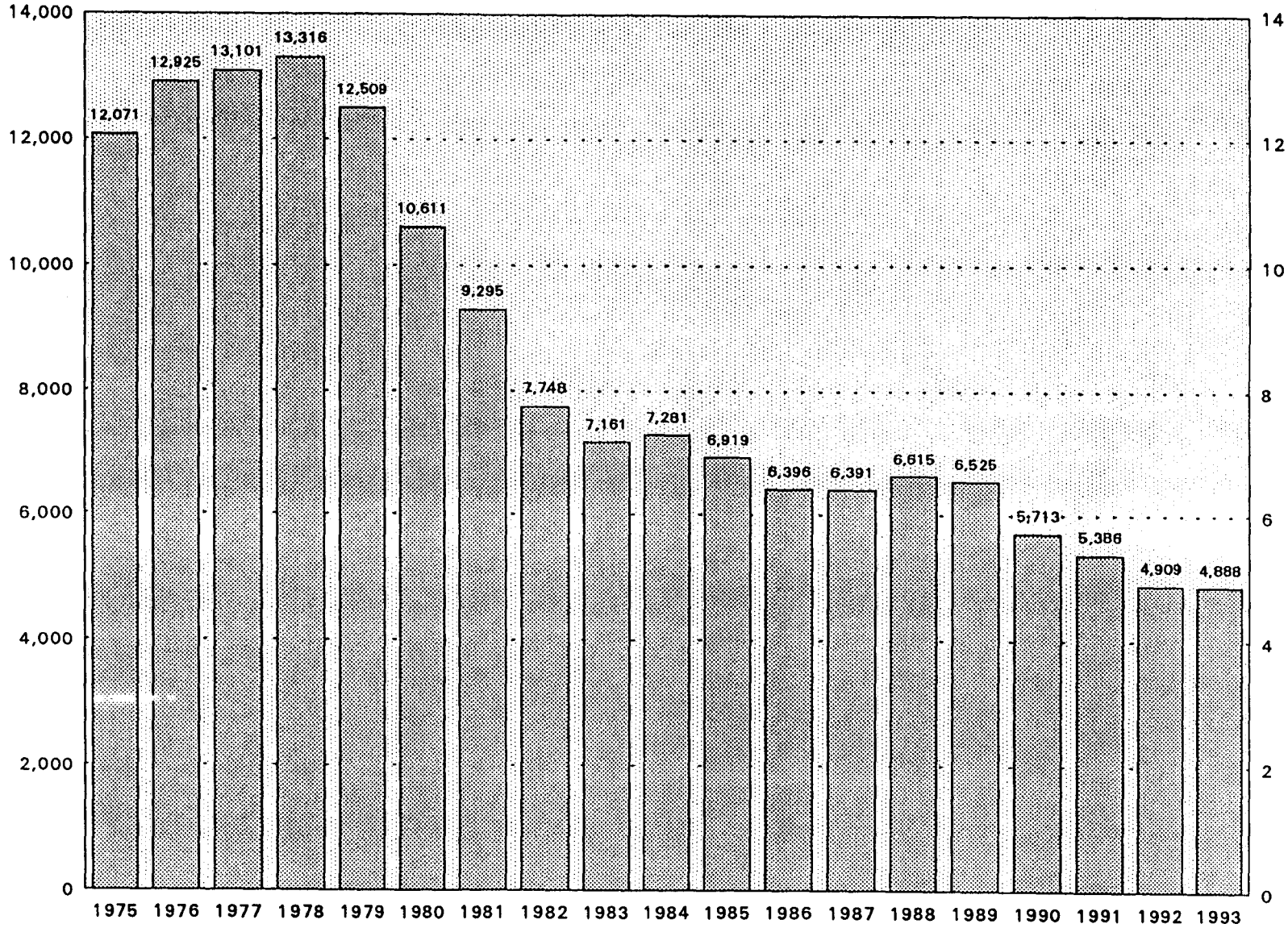
1993 counts are preliminary
Exclud-- highway-rail accidents/incidents

1993 TOTAL FATALITIES



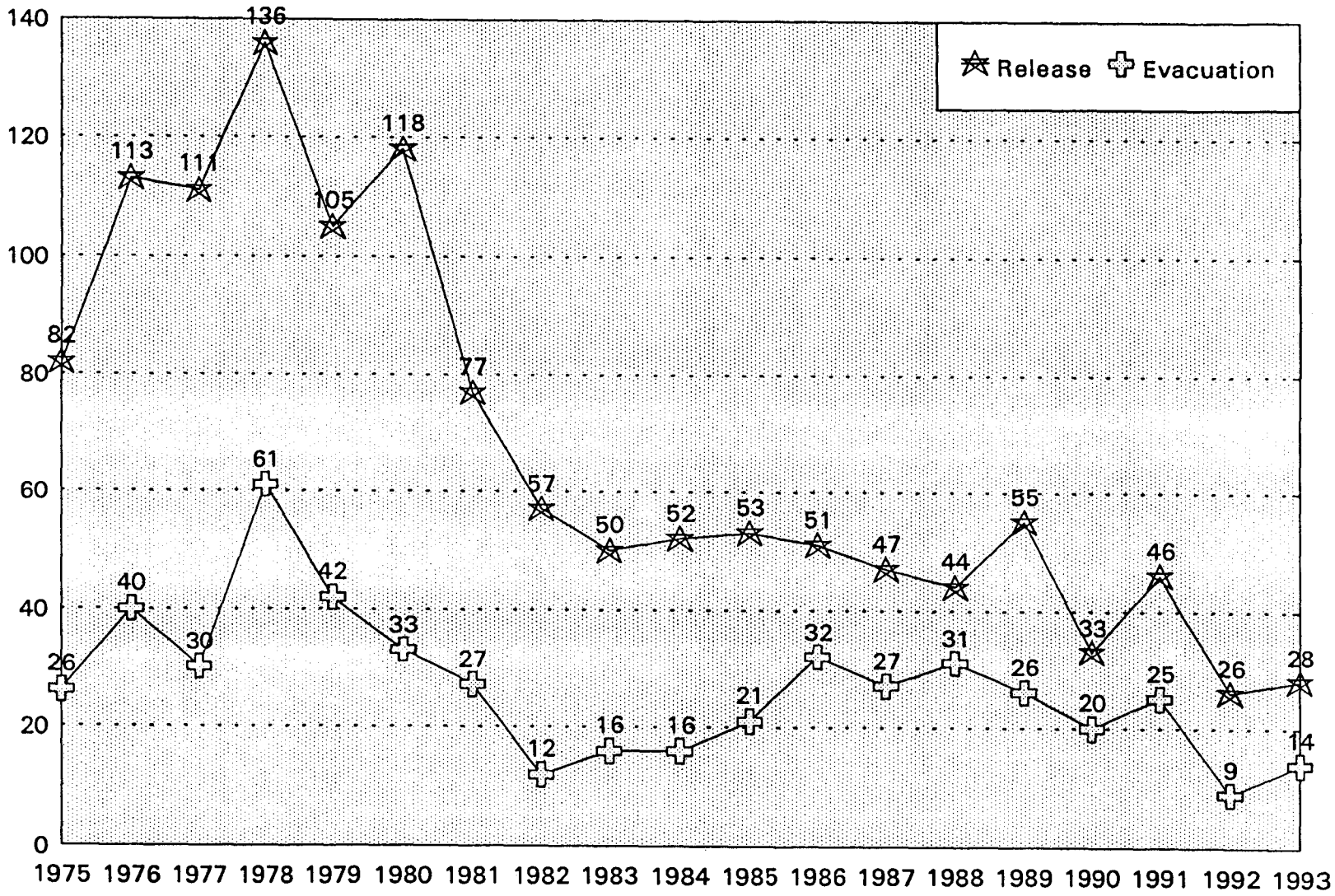
All deaths associated with highway-rail accidents are included in highway-rail total.
Three on-duty employees are included and also appear in the employee on duty count.

HIGHWAY-RAIL CROSSING ACCIDENTS



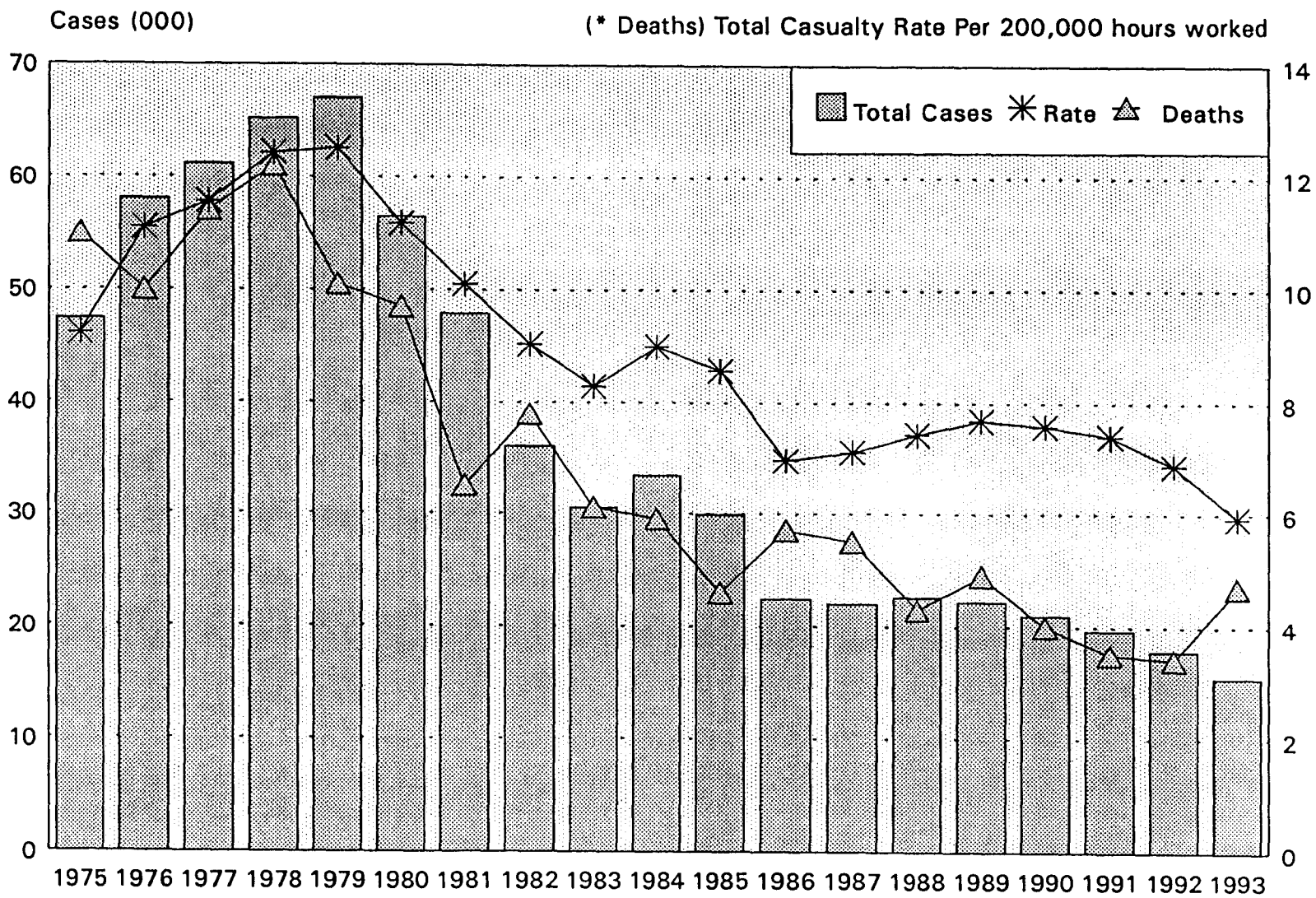
1993 c··unts are preliminary.

TRAIN ACCIDENTS INVOLVING HAZMAT



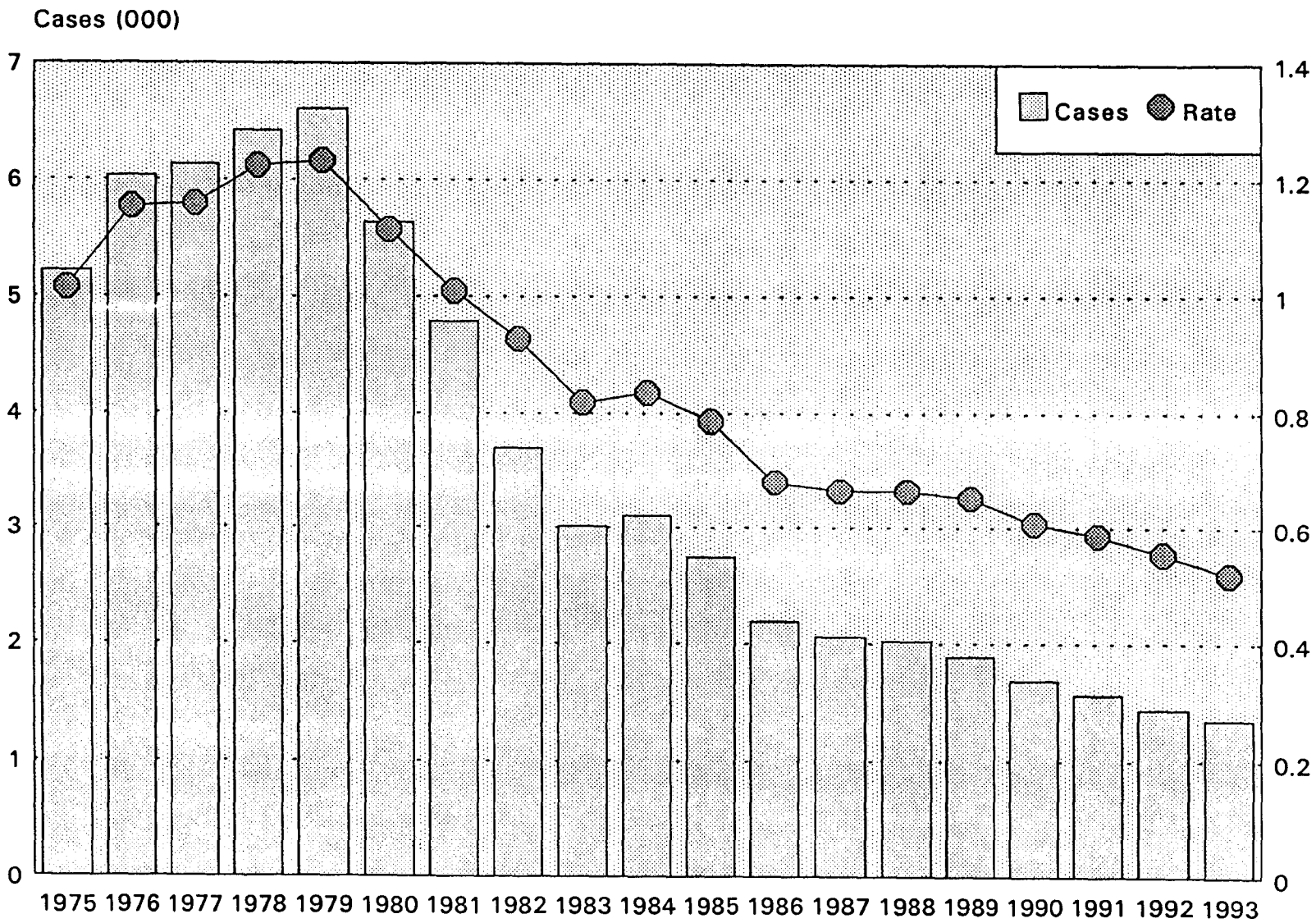
The number of accidents that resulted in an evacuation is a subset of accidents in which there was a release of hazardous materials. Highway-rail accidents are excluded. The counts for are preliminary

EMPLOYEE ON DUTY CASUALTIES



Total cases include fatalities, plus nonfatal injuries and illnesses.
* Deaths have been divided by 10 to maintain scaling.
1993 counts are preliminary.

SERIOUS INJURIES TO EMPLOYEES ON DUTY



Amputations, fractures, hernias, concussions, internal injuries, loss of eye, dislocations
1993 counts are preliminary