

**STATEMENT OF JOLENE M. MOLITORIS, ADMINISTRATOR
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DEPARTMENT OF TRANSPORTATION
BEFORE THE
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON RAILROADS**

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Good afternoon, Madame Chairwoman and members of the Subcommittee. With me today representing the Federal Railroad Administration (FRA) are Mr. Bruce M. Fine, the Associate Administrator for Safety; and Mr. Grady C. Cothen, the Deputy Associate Administrator for Safety Standards and Program Development.

The tragedies of the past several weeks on our Nation's railroads have struck deeply at each and every one of us at FRA. I personally visited the accident scenes at Secaucus, New Jersey, and Silver Spring, Maryland. The Deputy Administrator was the first senior federal official on the scene at Silver Spring; the Associate Administrator for Safety traveled to freight rail accident sites at Cajon Pass, California; St. Paul, Minnesota; and Tennessee Pass, Colorado. While the destruction remains vivid for us and for those FRA inspectors assisting the National Transportation Safety Board (NTSB) in its investigation of these recent rail accidents, the images pale in comparison to the terrible losses suffered by the victims and their families. The Secretary of Transportation joins me in extending our deepest sympathies to those mourning the death of their loved ones as a result of these tragedies.

Chairman Hall on behalf of the NTSB has effectively summarized what is known about each of these accidents. Based on FRA's findings and preliminary NTSB announcements, I issued two Emergency Orders, which I will submit for the record, relating to safety issues involved in the accidents, the first such orders in more than five years. Using the emergency

order procedure, one of FRA's most powerful authorities, I acted quickly and decisively on behalf of railroad employees and the public in order to ensure the safety of our Nation's rail system.

Emergency Order No.18 imposed certain requirements on movement of freight trains by The Atchison, Topeka and Santa Fe Railway Company (Santa Fe Railroad) over Cajon Pass in California, which was the scene of a fatal accident involving a runaway train on February 1. The order is intended to ensure that those trains have effective braking power when traversing this heavy grade territory by requiring operable two-way end-of-train (EOT) devices or an alternative method providing equivalent safety. The order also requires specific inspections of braking systems at Barstow, California.

Emergency Order No. 20, as amended following a meeting with intercity and commuter passenger railroads, requires these railroads to take certain actions to ensure the safety of their operations that involve hauling passengers in the lead car. The order requires adherence to new operating rules designed to prevent a recurrence of the accidents in Secaucus and Silver Spring. The order also requires inspection and proper marking of emergency exits on passenger equipment, and the submission by the railroads of an interim system safety plan addressing the safety of these types of passenger operations.

In addition to the overwhelming loss of life in the five rail accidents last month, February's accident record is also frustrating to each person in the rail industry and in FRA because the accidents occurred after what had been, overall, the two safest years in rail history, 1994 and 1995. You asked me last week, Madame Chairwoman, for my assessment of why these accidents are happening. Obviously the definitive accident report will be made by the

NTSB, the lead agency for accident investigation. But I will attempt to answer your question generally first and then address each element individually.

Answering your question requires a complex response. Beyond technology and regulations, effective railroad communications and adequate training of employees play a critical role in ensuring safety. Safety derives ultimately not only from rules, standards, equipment, and technology, but from the actions and the interactions -- or the absence thereof -- of the individuals who are key to the safety of railroad operations.

Safety Gains

The railroad industry has made great strides in safety since 1978, the worst year in recent history. Deferred maintenance on the main lines is largely a thing of the past. Locomotives, freight cars, and passenger rolling stock incorporate much improved materials and technology. Research into the causes of track buckling, advances in track components, and any number of other advances have permitted us to move more people and goods with a high degree of safety. For instance, the train accident rate has fallen from over 14 per million train miles in 1978 to less than four per million train miles in each of the last two years.

FRA has played its part in achieving rail safety gains. Our regulations level the playing field among railroads and establish a minimum level of safety to which all must conform. Participation in joint research, improved standards for tank cars, alcohol and drug testing requirements, locomotive engineer certification requirements, field compliance and partnership efforts directed at a broad range of safety hazards--all of these actions and others have driven down the accident and casualty totals, while the freight industry has continued to enjoy a post-Staggers Act resurgence and rail passenger service has grown.

We can foresee additional gains that will advance safety. Electronically controlled braking, now under development by the industry, will yield major benefits to safety and economic efficiency. Positive train control (PTC) will dramatically reduce collisions and overspeed accidents. Other advances in technology, which we will discuss at a forthcoming hearing, will also make the railroad environment safer.

In particular, to ensure safety the railroad industry and public policy makers must deal with the biggest challenge in transportation safety--the human element. Human factor caused accidents now comprise the largest single causal factor for railroad accidents and a particularly disproportionate number of the most serious accidents. Yet there is no doubt that increasing safety through infrastructure investment is a much more clear-cut and quantifiable safety challenge than is the challenge of effectively dealing with human factor issues. It is therefore very appropriate that this Subcommittee's first hearing on railroad safety should include human factors as a principal theme.

Human factor issues revolve around answers to many significant questions: How do we work constructively with the men and women in labor, management, and the rail supply community to ensure, that to the greatest extent possible, critical elements of the entire system are working together, rather than in conflict? How do we ensure that employees on the front lines are adequately trained, rested and supported with user-friendly technology? How do we foster an environment that truly values and rewards taking the safe course and makes each person in the system responsible for identifying and being a part of the solution to each safety challenge?

These questions must be answered, and the answers must be developed by each element

that has a role in making railroads safer. Government cannot do it alone. Rail management cannot do it alone. Employees and their organizations cannot do it alone. Technology by itself will not suffice. The entire system must work in harmony if the railroad industry is to increase safety and stop the kinds of tragic accidents we have suffered during the past month.

In FRA's investigations related to February's accidents, it has become painfully clear to all involved that many supervisors and craft employees and senior management communicated poorly or not at all. We frequently found insufficient follow-up by management to craft employee concerns. This leads to employee perception that management talks safety first, but in reality regularly sacrifices it when overcome by a need for expediency.

I have begun a dialogue with railroad management and labor about this issue. Almost to a person, management expresses extreme frustration about our contention that such communications problems exist on their railroads. They relate that they personally visit with employees and hold "town hall" type meetings. We recognize that many senior managers do get out and talk with employees; that some railroads have somewhat more mature labor/management programs as compared to others; we congratulate them on their initiatives in these areas. But much more must be done.

I believe there is a commitment in the rail industry to a safe railroad, open communications, and employee involvement, but, sadly, that commitment doesn't always become real, from the Chief Executive Officer and upper management, through the ranks to line supervisors at the division level and below. Those line supervisors are the key to operational safety success or failure. They are the implementors and change agents that make the process work. Unfortunately, we find that many line supervisors operate under a much different set of

values than those espoused by upper management, values long inherent in the railroad industry, which some have described as: “Keep the trains moving at all costs, and never tell the boss there is a problem.” This perspective, in FRA’s opinion, is one root cause of a serious internal railroad communications problem. We believe that this communications issue must be addressed by the railroad industry with the same levels of investment and quality assurance that has been made in capital programs. Let me add here that we appreciate and understand the difficult role that line supervisors play in the overall rail industry picture. We respect the outstanding job that many of them do, and recognize the dedication and commitment they have toward ensuring industry success.

Top management must assure that the culture throughout the entire organization fundamentally changes if safety is to be achieved. All the capital investment in the world will be for naught if employees are not properly trained to use and maintain upgraded equipment and systems. Top management’s message to line supervisors and everyone in the company must be that safety is the first priority, really a matter of life and death; that communication between and among departments, crafts, supervisors, and top management is essential; that everyone’s job depends on reporting safety problems and addressing them immediately; and that craft employee concerns are respected, addressed and follow-up made.

In my testimony this afternoon, I will address the major elements of FRA’s safety program, give details on grade crossing and human factors issues of most concern to the Subcommittee, summarize our recent regulatory accomplishments and pending rules, and analyze accident/injury statistics and trends.

Elements of the Railroad Safety Program

FRA's primary mission is railroad safety. To accomplish that mission, FRA sets and enforces safety standards, investigates major train accidents, assists the industry in training its workforce on safety laws and educating the public on dangers associated with railroading, conducts research, and encourages cooperative efforts on the part of the industry's various component parts to advance safety in many ways. Of course, the railroads themselves are directly responsible for ensuring the safety of their operations. FRA's role of setting safety standards and monitoring the railroads' performance does not supplant the industry's primary responsibility for safety.

Relationship with NTSB

I would characterize FRA's working relationship with NTSB at this time as very good. It has not always been as positive. When I arrived at FRA in April of 1993, our response time to NTSB recommendations was poor. This is reflected by FRA's historical acceptance rate of NTSB recommendations of 74 percent, which is the second worst in the Department; the Department's average is 80 percent. Over the past three years, I am pleased to report that FRA's record with NTSB has changed significantly. During my tenure, FRA's acceptance rate of NTSB recommendations has increased to 85 percent. Today our initial response to NTSB recommendations averages 44 days, less than half of NTSB's 90-day window.

FRA's Safety Program

When I arrived at FRA, our safety program, which historically had made many important contributions to enhancing railroad safety, was in need of evolution to a different way of doing business in a rapidly changing environment. The regulatory process was not nearly as inclusive as it needed to be, especially in the early stages of rule development. As a result, FRA regulatory

proposals often met with hostility from labor, management, suppliers, and many other quarters. Our inspection and enforcement process largely focused on site-specific inspections and was marked by an adversarial atmosphere.

As Administrator, I have worked daily to change this dynamic. In 1993 and 1994, I invited rail labor, management, and other stakeholder representatives to join me in 10 roundtables to discuss ways to improve safety. I soon learned that without new ways of working together, FRA could never move the regulatory process faster and more effectively. Without changing our safety approach and environment, we could never reach the safety goals that drive us daily--zero accidents, zero injuries and zero deaths. With fewer than 400 safety inspectors to oversee an industry with more than 270,000 employees, 20,000 locomotives, 1.2 million freight cars, and 300,000 miles of track, we cannot rely solely on traditional site-specific inspections and enforcement if we are to increase safety.

Results of the Administrator's Roundtables, internal audits, and scores of external meetings with individuals and groups in every element of the railroad industry, along with the realities of FRA's own resources, produced a compelling mandate for change. In March of 1995, I announced a new safety assurance and compliance program. A key element of the program is the senior labor, management meeting focused on designing a safety action plan on each railroad. FRA convened these meetings (eight in FY95; five to date in FY96; and 20 are scheduled for the remainder of FY96) which include labor and management representatives along with FRA regional administrators who work together based on FRA's safety profile of the railroad and labor and management input, to identify root safety issues system wide to be addressed by the plan. These meetings are based on a commitment from all involved to the elements of a

subsequent safety action plan to be proposed by the railroad, agreed to by labor and FRA, and against which FRA will monitor performance. This type of performance “contract”, designed by all parties, assures that we are all working on the same safety priorities and getting more safety for our collective investment.

Having all parties at the table increases FRA’s base of substantive and often firsthand information and strengthens FRA’s compliance program. FRA inspectors still inspect each railroad and cite violations. But we now have a system safety plan, with problems and solutions identified for an entire railroad instead of by sections of railroad corresponding to eight individual FRA regions. Each of our inspectors knows more precisely what to look for. Consistent with President Clinton’s focus on reinventing government, increased safety is our ultimate benchmark, and this evolution of our safety program includes best practices from the public and private sectors to help us achieve our goals.

Through the safety assurance process we have been able to focus collective knowledge, talent and resources from the entire railroad establishment to find new and innovative ways to improve railroad safety. We have already completed 13 comprehensive safety assessments, including six assessments on the larger railroads of the Nation and have scheduled 20 more for the coming year. These assessments identified 33 major safety concerns and 98 secondary safety concerns. The carriers addressed each issue as it was found. This process is leveraging the FRA’s resources in ways that could never have occurred in the past. For example, one railroad saw the defect ratio of a selected car fleet fall from 80 percent to three percent from October 1994 to January 1996.

Compliance

The safety assurance program's use of partnerships and teaming in no way means that FRA has ceased using its enforcement tools. Our enforcement tools include civil penalties up to \$20,000 per violation (\$25,000 for hazardous materials violations) that may be assessed against companies and individuals; orders directing compliance; orders disqualifying individuals from safety-sensitive service; emergency orders; and injunctions. In 1995, we collected more than \$5 million in civil penalties. While the annual collection total is down significantly from recent years, FRA was eliminating a large enforcement backlog in those earlier years, which made the annual totals unusually high. The railroads are well aware that, when safety assurance efforts do not produce compliance, FRA will respond with aggressive use of enforcement tools to ensure compliance.

Our recent experience in California illustrates these concepts. After a December 1994 accident at Cajon Pass, the Burlington Northern Santa Fe Railroad (BNSF) agreed to certain changes in its operations to enhance safety. FRA's investigation of the February 1, 1996 accident at that location indicated that those commitments were not all met and that proper procedures to ensure the safety of trains moving over the pass were not always being practiced at Barstow, the inspection point for westward trains heading to the pass. FRA, with the support of California state inspection personnel, sent a team of 64 inspectors (54 inspectors from FRA and 10 from California) to analyze the operations of all railroads that traverse Cajon Pass. These inspectors worked around the clock to assess the safety of all train operations in this area and focused management's attention on areas of non-compliance with Federal rules and regulations as well as the lack of communication between and among line supervisors and craft employees.

As a result of this analysis, FRA issued Emergency Order No.18 to the Santa Fe Railroad

to require certain immediate changes in its practices. Our inspection force is monitoring compliance with that order very closely, and we will take very strong enforcement action on any violations we detect. The point is that partnership is a two-way street. When FRA's efforts with labor and management identify and resolve systemic safety issues and are then met with corresponding action by the railroad involved, FRA does not have to use enforcement to achieve safety improvement. However, where our cooperative efforts do not achieve success, FRA will use all of the tools available to us.

Regulation

In the regulatory area, FRA is also bringing parties together to discuss pending regulatory standards in meaningful and effective ways. In 1995, FRA initiated the first negotiated rulemaking in its history, addressing the need for safety standards to protect trackside workers. This process resulted in the agreement of rail labor, management and FRA on proposed rules addressing this very contentious and crucial safety issue. During my meeting with railroad chief operating officers on February 22, I was pleased that all major railroads agreed voluntarily to implement the proposed protections during this year's construction season as FRA's proposed rulemaking goes through the formal stages of the regulatory process. This is an indication of the type of success bringing all parties to the table can achieve.

With over 40 regulatory initiatives now pending before the agency, using traditional rulemaking procedures for completion of all these rules is no longer adequate. All the affected parties must be involved from the beginning in order for our decisions to be based on the most complete and accurate data. Given the tremendously controversial nature of some of the pending regulatory areas, and the need to balance expected costs and benefits, a collaborative rulemaking

process represents a practical way to attack our enormous rulemaking agenda in a manner that fully involves our customers, makes the best use of FRA's resources, and accommodates the rapidly evolving changes in the rail transportation industry.

To expand the collaborative process, I have proposed establishing a Railroad Safety Advisory Committee (RSAC) based on this same common-sense inclusive approach to rulemaking. And I am pleased to announce that the Office of Management and Budget has formally approved the RSAC, and the announcement will appear in the *Federal Register* this week. Consequently, this committee will be working on some of our toughest regulatory challenges very soon. RSAC will be made up of representatives of railroads, railroad unions, public interest organizations, state safety agencies, and suppliers. The committee will, at FRA's request, consider a wide range of rulemaking issues. On each issue, the committee will attempt to reach consensus on the relevant facts, the range of options, and the appropriate action. Once the committee has achieved consensus on an issue, it will make recommendations to me about the proper course of action. Rules that result from this collaborative process are likely to be more reflective of all the affected interests and more readily implemented. Of course, if consensus cannot be achieved within imposed time frames, then I will not hesitate to take appropriate action to issue necessary rules. But where "buy-in" can be achieved, the end product will enable more effective regulatory standards and practices to be developed.

Highway-Rail Grade Crossing Safety and Trespass Prevention

From the outset, this Administration has recognized that highway-rail crossings are the largest single generator of fatalities stemming from rail operations. In fact, over half of the

fatalities in rail operations originate at crossings. In 1993, we found a well-intentioned, but foundering, Federally funded State-administered program dedicating large sums of Highway Trust Fund dollars to accomplish safety improvement projects at the Nation's nearly 177,000 public crossings. A goal had been established (which we endorsed) of reducing the number of crossings by 25 percent, but we also noted a struggling, marginally funded Operation Lifesaver (OL) program dedicated to enhancing public awareness of safety problems at crossings; and a fledgling high-speed rail program which was only then beginning to come to grips with the significance of highway-rail crossings, both public and private, to the safety of high-speed rail operations. There was no recognized high-level departmental interest in, or coordination of, highway-rail crossing safety programs.

With respect to funding, in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the Congress had continued an older "categorical" program (known by its citation in Title 23 U.S.C. as "Section 130" and funded in previous Highway Safety Acts beginning in 1973) which dedicated set amounts of Highway Trust Fund dollars to making safety improvements at public highway-rail crossings. Under ISTEA, states currently receive about \$4.5 billion each year for the Surface Transportation Program. Each year, 10 percent of this must be set-aside for two safety programs, one of which is the Section 130 Program. (The other safety set-aside program is for correcting safety problems at High Hazard Locations.) In ISTEA, the Congress specified that states should continue to fund the Section 130 Program from the 10 percent set-aside at least at the same level as in 1991, about \$150 million per year. After both safety set-aside programs are funded at their minimum levels, states may use the remaining set-aside funds, about \$143 million per year, for either program. The Federal Highway

Administration (FHWA), which administers this program, estimates that States have obligated over \$3 billion since 1974 for nearly 30,000 projects. This has saved almost 9,000 lives and prevented 40,000 injuries. In terms of percentage reductions, this is the most successful highway safety program administered by the FHWA.

Within a year after taking office, Secretary of Transportation Federico Peña called for an Action Plan to address this issue, and focused the efforts of all four DOT surface modal administrations to this effort.

The Action Plan

In June of 1994, Secretary Peña released the Department's Action Plan. It details 55 separate initiatives which since have been or are being, addressed cooperatively by four DOT Administrations. Thirteen have been completed with no further action required, and fourteen are complete with ongoing routines established. These 55 initiatives are organized in six different topical areas. Without going through all 55 items today, I would like to note each of the six areas and a few highlights from each.

1. Enforcement of Traffic Laws at Crossings. Because enhanced enforcement can dramatically improve highway-rail crossing safety, the Department has initiated an outreach to the Nation's law enforcement communities, ranging from patrol officers to judges. An active-duty California Highway Patrolman has just completed a one-year detail with FRA assisting in the development of this outreach effort. FRA will be bringing another officer on board this spring. Working relations with the National Sheriffs' Association, the International Association of Chiefs of Police and the Association of American Railroads' (AAR) Police Section have been established. Articles have been submitted and published that reach these

groups as well as traffic court judges. Photo-enforcement projects are being monitored in California and Florida, and the rules of evidence, which in many States currently preclude the use of such automated measures to facilitate police enforcement, are being reviewed.

2. Rail Corridor Crossing Safety Improvement Reviews. FRA is promoting comprehensive and systematic reviews of all highway-rail crossings along rail corridors, especially along the Nation's principal railroad lines. When doing a corridor review, we encourage State, local government and railroad officials to eliminate little used and redundant crossings within corridors where alternatives exist, especially those on the National Highway System, and to upgrade signs and signals, taking full advantage of state-of-the-art technologies. FHWA and FRA have held jointly a series of meetings with Metropolitan Planning Organizations, States and railroads stressing the need for cooperative intermodal transportation planning to include crossing issues. A checklist for corridor reviews has been jointly developed by FHWA and FRA and distributed to railroad and State principals. In cooperation with the AAR and the Association of State Highway and Transportation Officials (AASHTO), a pamphlet promoting crossing consolidation has been developed, published and distributed. FRA has also researched and published *Highway-Railroad Grade Crossings, A Guide to Crossing Consolidation and Closure*.

3. Increased Public Education and Operation Lifesaver. The Department has developed and initiated a major public awareness campaign, *Always Expect A Train*, in order to increase public awareness of hazards at crossings and of motorist responsibilities at crossings. This campaign has included both Spanish and English television, radio and print public service announcements and advertisements which have been widely aired. To date, FRA conservatively

estimates the value of donated time dedicated to these advertisements has exceeded \$2.5 million.

The campaign has reached citizens in all 50 States via 270 television and cable television markets, 673 radio markets and 194 publications.

In addition, other outreach efforts have been undertaken. The FHWA has distributed an On-Guard notice to 270,000 commercial motor vehicle operators. Similarly, advisory bulletins and public service print advertisements have gone to the commercial vehicle trade press.

Operation Lifesaver, Inc., the National Railroad Passenger Corporation (Amtrak), the American Trucking Associations, the Brotherhood of Locomotive Engineers (BLE) and the Department have worked together in initiating a “trucker-on-the-train” program. The National Highway Traffic Safety Administration (NHTSA) has encouraged States to utilize funds available under Section 402 Highway Safety Programs for addressing highway-rail crossing safety needs. So far, in fiscal year 1996, nearly \$300,000 out of a total of \$13.5 million of Section 402 funds are being utilized by 13 State programs.

4. Safety at Private Crossings. FRA is developing minimum safety standards for categories of private crossings and considering a public safety inquiry. For the first time, public funds, available under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) Section 1010 high-speed rail initiative, are being used to address safety concerns at private crossings. Projects have been, or are being, accomplished in Oregon, Indiana, North Carolina, Michigan and New York.

5. Data and Research. Adequate data and research provide a foundation for implementation of effective safety programs. A research needs/priority setting workshop was held last April at the Department’s Volpe National Transportation Systems Center, with

representatives of industry, States and academia participating, to review crossing and trespass research options. An effort is underway to revise the accident prediction formulas which are part of the DOT resource allocation procedures used by many States and railroads for managing crossing safety improvement programs. An analysis of the demographics of those who die in crossing incidents has been completed and published by NHTSA. And the Federal Transit Administration has defined procedures for collecting crossing statistics on light-rail operations. Other efforts, such as the "1-800" pilot answering system for grade crossing device malfunction reports, will provide a valuable basis for future policy implementation decisions.

6. Trespass Prevention. This goal seeks to raise public awareness that trespassing on railroad rights-of-way is illegal and dangerous. National and regional workshops have been held, which have sought to develop programs targeting local or regional trespass issues, to raise awareness, and to involve public, industry, law enforcement, OL and State officials. FRA is also working on a demographic study of those who die while trespassing, which will assist in targeting future public awareness and enforcement efforts.

The Task Force

Complementing the on-going commitment made in the Action Plan is the effort of the Grade Crossing Safety Task Force established by Secretary Peña following the tragic collision between a school bus and a commuter train in the Chicago suburbs last October. Secretary Peña directed this Task Force, headed by Associate Deputy Secretary Michael Huerta, to review the decision making processes for designing, constructing and operating rail crossings and to report back to him by March 1 with evaluations and recommendations for improvement. The Task Force specifically focused on five priority areas not addressed within the Action Plan initiatives.

These areas include:

- I. Interconnected Highway Traffic Signal and Highway-Rail Crossing Warning Devices;
- II. Available Storage Space for Motor Vehicles between Highway-Rail Crossings and Adjacent Highway-Highway Intersections;
- III. High-Profile Crossings and Low-Clearance Vehicles;
- IV. Light Rail Transit Crossings; and
- V. Special Vehicle Operating Permits and Information.

As part of the outreach effort which assisted the Task Force, a “Blue Ribbon” Working Group of 24 individuals from diverse backgrounds in both the public and private sectors who have technical and operational experience in highway-rail crossing issues was convened twice in Washington (and more often by telephone) to review Task Force progress, findings and recommendations. Also, the Department opened all available means of communication including a formal docket, a telephone hotline for requesting rail crossing safety publications, a dedicated FAX line, an Internet address and a published mailing address. Finally, the Task Force held three one-day public meetings, in North Carolina, Illinois and California. The Task Force’s Report was presented to the Secretary on March 1, and a copy of this report is submitted for the record.

Grade Crossing Regulatory Efforts

Grade Crossing Signal--Maintenance, Inspection, and Testing. Pursuant to the 1992 Rail Safety Enforcement and Review Act, FRA issued regulations for maintenance, inspection and testing of automated warning devices at crossings, such as flashing lights and gates. Those

regulations went into effect on January 1, 1995. FRA expects to publish perfecting amendments that will address issues raised early in the implementation process.

Locomotive Alerting Lights. This week I issued final rules to increase the conspicuity of locomotives approaching highway grade crossings. This matter has long been the subject of study by FRA and the industry. FRA launched a renewed research effort in early 1992 with the objective finding the best approach to motorist recognition of approaching trains. Since enactment of a regulatory mandate in the Amtrak Authorization and Development Act later that year, we have issued two notices establishing “grandfathering” requirements for locomotive alerting lights and have encouraged their early application. Research was completed this past summer, and FRA published a Notice of Proposed Rulemaking (NPRM) to formally require alerting lights on August 8, 1995. A technical conference was held in December to resolve remaining issues, and with publication of the final rule, I am confident that the statutory deadline of December 31, 1997 for trains to be equipped will be met.

Train-Borne Audible Warnings. The Federal Railroad Safety Act of 1994 required FRA to issue rules requiring use of the train horn at highway-rail crossings. FRA responded to that mandate by publishing the *National Study of Train Whistle Bans* (based on an investigation FRA began two years earlier) on June 1, 1995. FRA has conducted outreach to over 160 communities where whistle bans are in effect, asking them for ideas concerning “supplementary safety measures” that may adequately compensate for loss of the train horn, as permitted by law. Our dialogue with communities and review of particular rail corridors has shown deep-seated concern for community quiet and significant complexity regarding risk distribution and appropriate countermeasures. FRA appreciates that these rules must be reasonable, as well as

effective, and sufficient time must be allotted for meaningful public participation. An NPRM is anticipated to be issued this summer, with an initial final rule by early 1997.

Grade Crossing Technology and Research

FRA's research activities are examining a number of possibilities for enhancing safety at highway-rail crossings. Principal areas of focus include: freight car reflectorization; crossing illumination; optimal acoustic warning systems (specifications for train horns); human factors (driver behavior, social factors, education and accident causation); investigation of the reasons for loss of shunts (failures) in train-presence-detection systems; use of fiber optics to enhance signal reliability; video monitoring; obstruction detection; communicating to the locomotive a status display concerning the crossing(s) ahead; highway traffic barriers; private crossing interlockings; passive signs; low-cost grade separations; in-vehicle warning devices; and integration with Intelligent Transportation System and Positive Train Separation technologies.

Within the Department of Transportation (DOT), the Intelligent Transportation System represents a major initiative to provide safer, more efficient highways for the Nation. A key element of ITS is the provision of a communications link between the roadside and vehicles to provide warnings as well as information. As railroads move to PTC with a similar communications network in place, it will be possible for information to be passed between the two systems to make for far safer highway-railroad grade crossings. Information on train location and speed will be passed to the grade crossing where, in turn, it will be passed on to approaching vehicles.

FRA is working with FHWA, NHTSA and the ITS Joint Program Office to develop specifications for the data interface at grade crossings. In addition, four grade crossing warning

technologies referred to as Vehicle Proximity Warning Systems (VPAS) which provide warning communications between trains and road vehicles have been under evaluation at the Transportation Technology Center at Pueblo, Colorado. Performance limits, response to adverse conditions, and system performance and repeatability are being quantified. Depending on final results, consideration will be given to installation of one or more of the technologies on crossings on the PTC test corridors in Illinois, Michigan, and Washington.

In summary, Secretary Peña, in announcing the Action Plan set the ambitious goal of reducing the toll of accidents and casualties by 50 percent or more by the year 2004. This goal is achievable. If FRA's 1995 projections of better than seven percent reduction in those categories in 1995 prove justified, we will have already achieved a nine percent reduction in accidents and a seven and one-half percent reduction in the number of deaths. As the full force of the Action Plan initiatives and the Task Force recommendations and the on-going technology and research activities of the Department begin to take effect, the impact on crossing safety should escalate.

Human Factors in Railroad Safety

About one-third of train accidents and likely most personal injuries to employees occur due to human factors, such as inadequate training, ambiguous or conflicting rules, fatigue, impairing substances, technology that is not designed to work in the same manner that human beings typically think and work, and other causes. Human factor accidents present a special challenge, because root causes are more difficult to determine than for hardware-related accidents, and the effectiveness of potential countermeasures is often subject to dispute. Nevertheless, FRA is engaged in a variety of partnership activities, regulatory actions, and

research efforts, with rail labor and rail management, which support the human element in the rail transportation system. I will discuss some of these undertakings briefly, including initiatives related to fatigue and alertness, locomotive engineer qualifications, railroad operating rules, control of alcohol and drug use, dispatcher training evaluation, yard and terminal safety, potential of PTC as a means of addressing human factors accident causes and locomotive cab ergonomics.

Fatigue and Alertness

A critical human factor issue facing FRA and the railroad industry is the effect of fatigue and irregular work hours on the performance of railroad train and engine crews. As I have suggested, railroad employees want to work safely and efficiently, and they recognize that their own lives, as well as the lives of others, depend on consistent compliance with operating rules, signal indications, and other safety requirements. Available information suggests that these employees face real challenges in managing their work and rest due to the demands of railroad operations and the rigidity of some existing work rules.

NTSB and FRA accident investigations have suggested the need to address irregular work cycles, with particular attention to promoting the alertness of crew members assigned to rapidly rotating shifts that sometimes begin in the late evening. Train and engine crews in road service are sometimes required to report for duty with as little as two hours' notice. If information regarding scheduling of trains is not readily available or is unreliable, or if employees in line to take earlier assignments report sick or are otherwise unavailable, an employee can be called to work suddenly without having adequate sleep. Cumulative fatigue, or sleep deficit, may also be a problem, particularly where assignments are scheduled to maximize crew availability within the law (which permits returning to work with eight hours rest after a duty tour of eleven hours

and fifty-nine minutes). FRA has also noted work patterns on some railroads that may require or permit employees to work long hours on many days successively without a day off, possibly leading to cumulative fatigue. When these industry-specific facts are compared with human factors research findings on shift work, biological (“circadian”) rhythms, stress, and fatigue, significant opportunities for improvements in the duty and rest cycles of operating employees become evident.

FRA is conducting two related efforts to help determine the nature of performance decreases operating employees may experience. First, FRA began the second phase of its Engineer Stress and Fatigue Project in April of 1992 and will complete this work next month. This effort observes the performance of locomotive engineers on the Research and Locomotive Evaluator Simulator (RALES) facility at the Illinois Institute of Technology Research Institute. The RALES simulator was developed through FRA research and has served as the model for simulators used in the railroad industry worldwide to train, and assist in qualifying, locomotive engineers. In this study, locomotive engineers are subjected to irregular and stressful schedules consistent with the hours of service law and similar to schedules worked by many engineers. Preliminary analysis of data from tests employing 20 locomotive engineers indicates that engineers’ performance deteriorates over the period of a one-week test program, particularly with respect to vigilance (alertness).

The next phase of this work will include evaluation of napping strategies (similar to those under consideration for international aviation), research into automated vigilance monitoring, and other mitigation strategies designed to help engineers deal with shift work problems.

Second, FRA, with the participation of the BLE and major railroads, conducted a limited

study of actual work patterns among engineers. We gathered “activity diaries” from 200 locomotive engineers employed by six railroads. The diaries consisted of self-reporting with respect to quantity and quality of sleep, estimates of alertness at various times while on duty, time on duty, commuting time, and the accuracy of information provided to crews about job-start times. Initial findings of this effort, which will be available in a detailed report within the next few weeks, included the following:

- On average, engineers participating received almost the same amount of sleep as the general population, which was seven and one-half hours. However, for jobs starting between 10:00 p.m. and 4:00 a.m., sleep averaged less than six hours. This means that the engineers began shifts during a period when lack of alertness would be expected with less rest than normal.
- Self-rated alertness was influenced by the circadian rhythms of the respondents more than any other variable. Engineers felt they were less alert during the early morning hours, and these periods extended longer than would be expected for scheduled shift work.
- Engineers reported that the most important change that could improve their alertness was more accurate information about the time of the next job start (permitting better planning of rest).

FRA will follow up this effort with an analysis of diaries gathered from a separate sample of engineers--those participating in the study of work, stress and fatigue using the RALES simulator--to determine actual measures of performance on the simulator can be predicted using software designed to evaluate alertness based on work and rest cycles and biological rhythms.

A joint program of the AAR, the BLE and the United Transportation Union (UTU) is

conducting a large-scale study of the work schedules of operating employees and any correlation between those schedules and the occurrence of unsafe practices. FRA and the AAR/BLE/UTU team meet periodically to share information on our complementary research efforts.

Notwithstanding FRA's comprehensive research effort on fatigue and unscheduled shift work, FRA lacks the regulatory authority provided to the Federal Aviation Administration and FHWA to address hours of duty of safety-sensitive employees. The Hours of Service Act, enacted nearly 90 years ago in 1907 (recently recodified in chapter 211 of title 49, U.S. Code) governs the on- and off-duty periods of railroad operating employees. Congress last enacted major amendments applicable to these employees in 1969, and revised the maximum on-duty period from 16 to 12 hours. Since 1969, railroad operations have changed materially. As I have noted, human factors research into shift work, fatigue, and the body clock has produced a significant body of information that can help guide development of improved crew management practices.

Anticipating the need to address identified issues of fatigue and lack of alertness by employees working long or irregular hours, the DOT submitted a bill in 1991 to repeal the Hours of Service Act, automatically adopt the current provisions of the Act as regulations, and then commence a process of consultation and rulemaking to address emerging safety needs. That bill was not supported by rail labor or rail management and was not enacted.

In 1994, the DOT submitted legislation requesting a more limited authority to approve pilot projects proposed jointly by rail labor and management and to waive statutory restrictions where appropriate to conduct the projects. FRA was then to evaluate the results and report to the Congress. This provision was enacted as section 203 of the Federal Railroad Safety

Authorization Act of 1994 on November 2, 1994. It remains FRA's hope that this process of exploration will build confidence leading to overall reform of the law.

On December 13, 1995, the Southern Pacific Transportation Company (SP), BLE, and UTU jointly petitioned FRA for a waiver of compliance with the Federal hours of service laws affecting train employees. In a notice published in the *Federal Register* on February 6, 1996, FRA invited interested parties to participate in the proceeding by submitting written views, data, or comments to the agency by March 7, 1996. The FRA Safety Board will then determine if the requested waiver of compliance is in the public interest and consistent with railroad safety.

FRA estimates that approximately 172 employees would participate in the pilot project proposed by SP, consisting of 35 locomotive engineers, 37 train conductors, and 100 extra board employees who would serve, when required, as extra engineers and conductors on train runs within the Los Angeles, California area. The safety advantage cited by the applicants is reduction of commuting time for certain employees in the Los Angeles area.

FRA anticipates receipt of a second petition from another major railroad and certain of its operating employees regarding scheduling of road assignments. This application appears to relate more directly to the core concerns associated with service on unscheduled road trains. FRA will also act expeditiously to review and rule on that petition when it is submitted.

FRA is also exploring dispatcher workload, stress and fatigue as a follow-up to our studies of train dispatching offices. Initial phases of work should be completed this year, with development of a methodology for measuring workload and stress levels available in late 1997. We are also looking at fatigue caused by the need to process information rapidly as an issue with respect to operators of high-speed trains.

Although, as I have noted, FRA does not have authority to regulate hours of work of railroad employees subject to the hours of service law, Emergency Order 20 did require the commuter railroads to evaluate their crew management practices. Following the New Jersey Transit (NJT) collision of February 9, the commuter authority found that it was able to eliminate night split shifts without adversely affecting operations. Although we believe this practice is the exception, we are asking each commuter authority to evaluate its practices and report to us within 45 days.

FRA remains optimistic that the work of the NTSB, research conducted by FRA, the joint study undertaken by the AAR, BLE and UTU, the pilot projects authorized by the Congress, and the new partnerships being forged under FRA's transformed safety program will lay the foundation for fundamental reform of the law. Reform in the law will permit us to undertake a consensus-based rulemaking to address the special safety needs associated with train operations, work and rest, utilizing the best data available and recognizing the need for reasonable crew availability, as well as the preeminent requirement that employees be rested and alert.

Locomotive Engineer Qualifications

As a result of the tragic accident at Chase, Maryland, in 1987, standards for the uniformity and adequacy of the qualifications of engineers became a significant concern. Under the Rail Safety Improvement Act of 1988, FRA was required to adopt rules establishing a program for qualifying locomotive engineers. To accomplish this task with the resources available, FRA selected a certification process rather than a traditional government licensing system. This approach also minimizes government intrusion in sensitive employment relationships. The certification process includes FRA review and approval of each railroad's

certification program and establishes requirements for: (1) testing visual and aural acuity; (2) assessing knowledge and performance skills; and (3) eligibility premised on past safety conduct including examination of the person's motor vehicle driving record.

FRA's engineer certification program became effective in 1992. Railroads initially were authorized to certify a person as qualified based solely on the person's prior experience, and persons so certified had to be formally evaluated within a three-year interval that ended in 1995. All engineers must be given prescribed training, testing, and evaluation before receiving certification and must be reevaluated every three years.

In making determinations about a person's eligibility to become or remain a certified locomotive engineer, railroads must consider, where pertinent history exists, the individual's recent conduct (i.e., during the previous three to five years) as a railroad employee and as a motor vehicle operator. Certification candidates have the responsibility for furnishing the data concerning driving history. They have to query the relevant State agency and the National Driver's Register and make the results available to the railroad.

The rule provides a system for evaluating the significance of instances in which the person has been involved with alcohol or drugs either while on duty as a railroad employee or while operating a motor vehicle. Any single incident of substance abuse would trigger an evaluation by a skilled professional (such as a physician or psychologist expert in the treatment of substance abuse) of the significance to be attached to such an event. The professional must consider whether the person is currently dependent on alcohol or drugs or has a treatable disorder involving abuse of drugs or alcohol. If the professional concludes that such a condition exists, railroads can permit the person to perform service only subject to the aftercare and testing

provisions contained in FRA's alcohol and drug rules after sufficient treatment has occurred.

Mandatory revocation of a person's certification is prescribed for multiple instances of work-related detection of substance abuse, regardless of how detected. The period of revocation varies based on the manner of detection. Refusal to submit to chemical testing is treated the same as if the test were positive. Whenever certification is revoked, completion of the requisite time period and an evaluation showing no uncontrolled substance abuse disorder are predicates for recertification.

FRA's rule provides a system for evaluating a variety of instances in which an engineer operated a train unsafely. Several types of poor safety performance while at the controls of a train are considered in the evaluation system. For example, operating without proper authority, excessive speeding, and tampering with safety devices are among the types of unsafe behavior that would result in loss of certification. In each of the five specific types of events identified by FRA, the incident involves a very dangerous situation in which it is appropriate to hold a locomotive engineer directly responsible for his or her conduct. Mandatory periods of revocation are provided for single incidents and for multiple incidents of poor train operation. The severity of the response is gradated to deter repeat offenders.

Review of a railroad's decision not to certify or to revoke certification is performed by FRA when requested by the locomotive engineer. Available data indicate that FRA is being asked to review about 70 revocation or denial decisions each calendar year. This constitutes about 12 to 15 percent of the total number of negative railroad certification decisions rendered each year. Initial review by FRA is intended to be simple and prompt. Those dissatisfied with the initial review can request a formal trial-type hearing procedure before a hearing officer.

Hearing officer decisions can be appealed to the FRA Administrator and are reviewable in Federal court after becoming administratively final.

Railroad Operating Rules

Emergency Order No.20, as amended, also contains mandates for rule changes that will bolster safety of push/pull and electric multiple-unit (EMU) operations outside of cab signal, automatic train control, or automatic train stop territory. The “delayed in block” element of the order requires push/pull and EMU trains to operate at reduced speed approaching junctions where collisions with opposing trains might occur, as was the case at Secaucus, New Jersey; Silver Spring, Maryland; and Gary, Indiana (a similar 1993 collision involving two EMU commuter trains). The order also provides for crew communication of signal indications to reinforce in the mind of the engineer the limitations imposed by less favorable signal aspects.

These provisions build on existing railroad operating rules, which serve as a critical element of safety in the rail industry. FRA works with railroads and industry rules committees to encourage reasonable uniformity and to bring about improvements in individual operating rules. Recent accomplishments in this effort include the development of a common book of operating rules for the railroads operating in the Chicago Terminal. FRA also oversees railroads’ programs of operational tests and inspections, required under FRA regulations (49 CFR Part 217).

Because of its significance to railroad safety, knowledge of operating rules is an important concern to the FRA, the railroads, and the general public. Two problems exist with regard to operating rules. First, the overall perception of the rule reflects serious shortcomings. Improving readability would make it more likely that rules are thoroughly understood, readily recalled, and correctly applied. Second, while the railroads are required to conduct periodic

operational testing of rule knowledge, they vary in how they conduct this testing, in what standards they apply to gauge results, and in how frequently they test operating employees. A forthcoming research study will examine these two areas and provide recommendations to the railroads on how they can improve their practices concerning writing their own company rules and testing their employees' knowledge of those rules and Federal safety law. This work is planned to begin by the fall of 1996.

Control of Alcohol and Drug Use

In 1986, FRA became the first civilian agency to adopt stringent alcohol and drug testing regulations applicable to a regulated industry, and that action was upheld in a landmark Supreme Court ruling. Subsequently, both random drug testing and random alcohol testing requirements have been added to the regulations, and FRA was among the leaders in the successful effort to implement performance-based criteria with respect to random testing rates in all modes of transportation. FRA continues to operate the only comprehensive post-accident toxicology program applicable both to surviving and deceased safety-sensitive employees, and the results of that program confirm the progress that has been made in reducing alcohol and drug use since the regulations were issued in 1986.

I am proud that FRA has also been an enthusiastic supporter of Operation Redblock and other peer-led prevention programs in the railroad industry. These voluntary efforts are complemented by (i) strong employee assistance programs operated by the railroads and (ii) FRA requirements affirming the rights of self-referral and co-worker reporting--without penalty to the employee who is troubled by a substance abuse disorder.

At the same time, regulations require removal from service for any employee who uses

alcohol or drugs on the job or uses controlled substances without medical authorization at any time. Locomotive engineer certification rules establish a mandatory decertification period of nine months for any first offense where an engineer uses alcohol or drugs on the job or is found impaired by alcohol or drugs while on duty. These sanctions deter alcohol and drug use while encouraging those with substance abuse disorders to seek help early, before an accident occurs and before detection in a random or reasonable cause test.

In 1994, only 7 employees (2.4%) tested positive out of 287 employees providing blood and urine samples for post-accident testing (two for alcohol and five for controlled substances). In over 43,000 random drug tests conducted by the railroads under our rule, only eight-tenths of one percent of employees tested positive for controlled substances in 1994. Over the next few months FRA will be assembling data for 1995, which will include our first year of random alcohol testing.

Dispatcher Training Evaluation

The Rail Safety Improvement Act of 1988 (Public Law 100-342) directed the Secretary of Transportation to conduct an inquiry into whether training standards should be established for train dispatchers. A major FRA study already underway at the time, the National Train Dispatcher Safety Assessment 1987-1988 (FRA Office of Safety, July 1990), revealed extensive variability among railroads in their conduct of initial dispatcher training, inconsistent or non-existent standards for training outcomes and for ascertaining when a novice dispatcher was "qualified," dependence on informal and unstructured on-the-job training (OJT), and uneven practices regarding territorial familiarity and refresher training. In January of 1995, FRA submitted a report to Congress conveying the results of this study.

A primary finding of the safety assessment study was that railroads generally have no established curriculum for training dispatchers and no systematic procedure for determining their proficiency. The FRA is concerned that these shortcomings in training programs may affect safety as dispatcher candidates are hired from applicants having little railroad experience. FRA will conduct further research to develop information on the way dispatcher training is being conducted, recommendations on ways dispatchers' training can be strengthened, and guidance on standards for both initial and refresher training. Special attention will be given to opportunities to employ newer training methodologies that will yield high levels of proficiency and are demonstrably cost-effective.

FRA will initiate this project during the summer of 1996, and harmonize it with a current partnership effort underway between Amtrak and the American Train Dispatchers Department/BLE, which is developing a new training program for Amtrak dispatchers. The Burlington Northern Railroad Company and the Santa Fe Railroad, which currently together operate what is regarded as a benchmark training program, are assisting in this effort.

Yard and Terminal Safety

In 1994, railroads reported 13,080 injuries to on-duty railroad employees. Most of these injuries occurred in yard, terminal and maintenance-of-way operations. This number, while high, reflects a worker injury rate of 5.08, compared to 9.3 of all transportation and public utilities and 8.4 of all private industry. FRA considers injury prevention a key focus of safety enhancement. Anecdotal evidence indicates four primary reasons for many of the incidents leading to these injuries: (1) inadequate safeguards built into procedures and equipment; (2) inadequate training; (3) inadequate supervision; and (4) employee complacency leading to inattention to safety

considerations while performing familiar tasks. FRA's multi-phase safety project in this area will identify sources of accident data for operating practices in yard and terminal operations so as to identify improvements that might be made by railroad management to reduce employee injuries. Phase I will identify sources of information on the yard and terminal safety problem and identify or develop the evaluation techniques to be used in subsequent phases. Subsequent phases may also address maintenance-of-way safety problems. This project, which began in December 1995, will be accomplished in close cooperation among FRA's Offices of Research & Development and Safety, railroad management, and rail labor.

Locomotive Cab Ergonomics

As part of an effort to evaluate working conditions and safety in the locomotive cab, FRA is developing human factors guidelines for the evaluation of current and proposed locomotive designs. The human factors concerns to be addressed by the guidelines include working conditions and information technology. The initial guidelines consider heating, ventilation, air conditioning, noise, vibration, toilet facilities, cab layout, ingress and egress, visibility, seating and workstation design (hardware and software issues). Human factors considerations will be addressed within the context of relevant operational issues. A final research report is expected to be published within the next few months, and the results will be included in the forthcoming *Report to Congress on Locomotive Crashworthiness and Working Conditions*. Findings will be further refined and utilized by the Railroad Safety Advisory Committee to chart future actions.

PTC as a Means of Addressing Human Factors Accident Causes

At a future hearing, we will describe in greater detail the status of PTC systems. As you know, the Union Pacific and BNSF are developing a Positive Train Separation demonstration

project for over 800 miles of railroad in the States of Oregon and Washington. The railroads now estimate completion of the demonstration by the end of 1997. Our high-speed PTC demonstrations in Michigan and Illinois will also be unfolding rapidly. Lessons from these demonstrations should set the stage for the deployment of interoperable PTC systems before the end of this century. A number of senior railroad operating officials have suggested that one of the major benefits of PTC, in addition to the basic safety benefit, is that PTC will enable the operation of a scheduled railroad. Implementation of PTC would provide dispatchers (and their computers) with accurate, real-time information on the precise location and speed of each train. Dispatchers, in turn, would be able to give each train precise speed control instructions to keep them on or return them to schedule. By scheduling arrivals at terminals, workloads there can be planned in advance so that departure schedules can also be met.

Once a railroad has its trains scheduled and is able to keep its trains running on those schedules, the scheduling of train crews becomes possible. As the Subcommittee should be aware, many freight train crews in the United States, unlike Amtrak and commuter train crews, today do not work on a fixed schedule. One day they can go to work in the morning, the next in the middle of the night, the next in the afternoon, and so on. Crew scheduling will mean that crew members will be able to schedule regular periods of sleep and recreation, reducing family and social tensions and emotional and physical stress.

Of course, PTC also provides improved safety by providing highly reliable checks and balances that limit the impact and propagation of human errors caused by stress, fatigue, illness, or anything else. PTC will include automatic computer checks on track occupancy, redundancy (i.e., dual computers in the control center and on the locomotives), a highly reliable radio data

link and message protocol, accurate position and speed information, and a throttle-brake interface providing for enforcement of authorities and remote intervention. FRA has actively promoted the development of PTC, and I intend to provide the Subcommittee with a full update on our efforts at the next oversight hearing focusing on technology.

FRA'S REGULATORY PROGRAM

Beyond FRA's approach to human factors and grade crossing safety issues, Federal railroad safety standards in general furnish a basis for regularizing and evaluating specific aspects of safety performance, while providing national uniformity that permits railroads to serve passengers and shippers at affordable cost. FRA administers a substantial and broad-based program of safety standards to prevent accidents, mitigate accident severity, and prevent injury to employees, passengers and the public. I would now like briefly to highlight other major recent rulemakings of interest to the Subcommittee.

Hazardous Materials Safety

FRA shares responsibility for hazardous materials safety with the Research and Special Programs Administration (RSPA). On September 21, 1995, in response to the NTSB's concern over the issue of tank car crashworthiness as well as corresponding a Congressional mandate, RSPA with FRA issued a major new final rule addressing tank car crashworthiness. The new rule requires full head shields on new tank cars that require head protection. It eliminates certain older grandfathering requirements, and extends crash and thermal protection requirements to certain additional commodities. In addition, the rule requires periodic inspection of tank car tanks using non-destructive testing alternatives to hydrostatic tests that have proven ineffective in detecting fatigue cracks. The rule incorporates a damage tolerance approach recommended by the NTSB and requires actions that will lead to significant improvements in tank car safety over the next decade.

RSPA and FRA have recently proposed rules to increase the test pressure of frangible discs used as safety release devices on tank cars that carry hazardous materials in liquid form.

These proposed rules, which will be finalized this year, promise to significantly reduce small releases of hazardous materials that frequently cause injury to railroad operating employees.

Roadway Worker Safety

In 1994, in response to the deaths of 24 roadway workers who were fatally injured by moving trains or equipment, FRA undertook its first formal regulatory negotiation, or “reg-neg,” to address the safety of roadway workers, those employees of railroads and railroad contractors who, for example, maintain tracks, signals, or other fixed railroad facilities close to tracks. FRA undertook this collaborative approach in order to get the best available information and possible solutions and to build a common consensus on causation and prevention of these accidents, which then led FRA to establish a committee composed of representatives of rail labor and management, and FRA. Chartered early in 1995, the committee presented consensus recommendations to Secretary Peña in May 1995, and recommended proposed regulatory text by the end of that fiscal year. FRA expects to publish those proposed rules in the near future. As noted previously, in response to my request, the railroad industry recently committed to the implementation of the committee’s proposed roadway worker safety practices in advance of the promulgation of a rule by FRA. I believe that this voluntary adoption of these pending requirements in time for the 1996 work season demonstrates the ultimate value of the collaborative approach to establishing reasonable and workable regulations enhancing rail safety.

Power Brakes

FRA administers extensive regulations governing the safety of locomotives and freight cars. In 1992, we began a revision of the power brake regulations, including two items specifically mandated by the 1992 legislation: standards for dynamic brakes and two-way EOT

devices. The project was and is a complex undertaking. Three workshops conducted in 1993 provided a foundation to prepare proposed rules. FRA issued an extensive and detailed NPRM in September 1994 and held hearings at several locations across the country. Both management and labor representatives, however, expressed strong objections. Due to these and other strong objections raised by a large number of commenters, FRA announced by notice published on January 17, 1995, that it would defer action on the NPRM and permit the submission of additional comments and alternative approaches prior to making a determination as to how it would proceed in this matter. In considering alternatives for concluding the power brake rulemaking process in order to promulgate reasonable and effective regulations, I determined that a collaborative process would be the best approach. As I have indicated, at the railroad safety summit in September 1994, Secretary Peña committed to a negotiated rulemaking process for trackside worker safety issues, and by the spring of 1995 that committee was formally chartered and progressing rapidly. Rather than request that a separate negotiated rulemaking committee be established solely to consider power brake issues, I believed that a general Railroad Safety Advisory Committee with broader jurisdiction would provide a better way to advance a number of pending rulemakings. Accordingly, freight power braking safety issues will be referred to the RSAC for final resolution. As I have noted, FRA has already separated EOT issues from this rulemaking, and shifted responsibility for passenger train braking issues to the passenger equipment working group.

Passenger Equipment and Emergency Preparedness

Given the attention on passenger car equipment safety standards resulting from the Secaucus and Silver Spring tragedies, I would like to put FRA's emergency actions and other

safety initiatives in context. In 1993, FRA issued the Emergency Preparedness Guidelines for Passenger Trains. These guidelines laid the groundwork for Secretary Peña's announcement at the Rail Safety Summit in September 1994 that FRA would issue passenger equipment standards in two phases: initial standards in three years and final standards in five years. Congress incorporated this proposal in the Federal Railroad Safety Authorization Act of 1994.

Last summer, FRA established two working groups to begin work on a collaborative rulemaking. The Passenger Equipment Working Group is comprised of employee representatives, rail passenger organizations, states, commuter authorities, and rail equipment manufacturers and suppliers. It is charged with two initial tasks. First, the group will prepare a second NPRM for passenger power brake safety. This effort develops from FRA's initial proposal for revision of power brake regulations applicable to passenger service, but a collaborative effort in the working group context will develop standards that are effective and performance-oriented to the greatest extent possible. Second, the working group will develop an NPRM on such remaining issues as vehicle crashworthiness, interior safety, truck performance, emergency lighting, operation of door exits, and inspection, testing and maintenance of equipment. An Advance Notice of Proposed Rulemaking describing in detail the issues before the working group will be published in the near future.

FRA also has formed an Emergency Preparedness Working Group to address such topics as communication to passengers, emergency communications, liaison with emergency responders, first aid, and emergency equipment such as flashlights, fire extinguishers, and the like. That group will prepare an NPRM for issuance in the next few months.

Track and Structures

In response to the requirement included in the Rail Safety Enforcement and Review Act of 1992 to revise FRA's track safety standards for the first time since the 1980's, FRA conducted a series of workshops to lay the foundation for this effort. While FRA staff has over the past 18 months prepared a draft NPRM that includes standards for high-speed service (as separately required by 1994 legislation), FRA now believes that the wide range of technical and economic issues entailed in this revision makes it an ideal candidate for collaborative development. Therefore, FRA will propose that this revision be one of the earliest projects addressed by the RSAC.

Substantial research and testing in the track and structures area will support this revision. With the AAR, FRA has developed a non-destructive means of determining the gage-holding capabilities of railroad ties that offers promise to improve safety through a performance standard. That technology has been tested on CSX under a carefully supervised waiver. FRA also has conducted extensive research into track buckling issues related to continuous welded rail (CWR), and railroad track departments have already implemented those lessons to reduce significantly the number of accidents caused by this phenomenon. As FRA works with labor, management, and others to fashion a comprehensive proposal for further revision of the standards, we will be incorporating new knowledge regarding internal rail flaw detection, as well as maintenance of CWR, gage restraint measurement, and other track safety issues.

In April of 1995 FRA announced the completion of a railroad bridge safety survey and study, as well as an interim statement of agency policy. Our review showed that most railroads do an exemplary job of inspecting and maintaining these critical corporate assets. The interim policy determined that regulatory action is not necessary but that there is a continued role for

FRA in the oversight of railroad bridge inspection programs. However, as a result of FRA's program development and training effort for bridge structural safety, FRA personnel identified several bridges approaching the load-carrying capacity needed to support regular traffic. Most were on small railroads that lack engineering expertise on staff. Although most of these railroads responded cooperatively (and even expressed appreciation for FRA's intervention), I recently found it necessary to issue Emergency Order No. 19, removing from service a dangerously deteriorated bridge on a small railroad near Buffalo, New York. FRA will continue to take decisive action when public or employee safety appears to be threatened by bridge conditions.

Accident Reports Rules

Reporting and receipt of accurate data are fundamental to ensuring effective safety oversight. These data help us determine where to place our resources and whether new safety initiatives are required. In August of 1994, FRA issued an NPRM for revision of its accident/incident report regulations. That proposal included a requirement for internal control procedures, as recommended by the General Accounting Office. FRA conducted extensive public proceedings on this notice, concluding with a public regulatory conference in January of last year. FRA is now preparing a final rule that will strengthen the reporting system by improving the accuracy of accident and injury data, and plans to issue this rule by June of this year.

THE RAILROAD INDUSTRY'S SAFETY RECORD

In order to provide the Committee with a broader report on the industry's overall safety performance, I would like to briefly review the relevant data. These data provide an overall perspective on safety, as reflected from year to year. It should first be noted that FRA's safety statistics for 1995 are projections based on 11 months of preliminary data. That is, these data are

subject to slight revisions due to late and corrected reports, revisions that historically have not exceeded one or two percent of the totals for most data elements. Second, the data compiled here originate with the railroads, and therefore only reflect what is reported to FRA. In addition, I would note for the Subcommittee that questions continue to be raised from many quarters about whether these statistics, particularly those addressing reportable incidents and employee accidents, accurately reflect the true safety performance on the properties. FRA will fully investigate allegations of railroad violations of accident/incident reporting regulations and management practices that may tend to discourage employee reporting of injuries and unsafe practices.

If our investigation of such allegations uncovers evidence that reporting of accidents or employee injuries is being suppressed deliberately, in violation of Federal railroad safety statutes and regulations, FRA will pursue enforcement actions against those railroads and individuals to the fullest extent permitted by law. FRA believes this issue is very important, and we have received and are considering recommendations for even stronger remedies to address this problem. In addition, FRA audits railroads' reporting practices and accuracy; we are now devoting more effort in this area.

In that vein, I assure you, Madame Chairwoman, that FRA's new approach to railroad safety includes even tougher enforcement of the law than in years past. We expect that the use of system safety plans will result in fewer civil penalties assessed because a railroad should be able to comply with a plan it has devised. But, when a railroad violates its own system safety plan in a way that involves noncompliance with the safety laws, FRA will use civil penalties strongly to enforce the law.

With respect to present statistics reported to FRA, 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. (The present threshold is \$6,300. As previously mentioned, 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, FRA has excluded those occurrences from the "train accident" numbers that will follow.

As measured by the train accident rate, 1994 and 1995 have been the railroad industry's safest years in history. The train accident rates were 3.82 per million train miles for 1994 and 3.73 per million train miles for 1995, compared with the previous all-time low of 3.97 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, 3.9 times what it was in 1995. (See attached chart, "Train Accidents.")

After dramatic improvements in the period 1979-1986, the train accident rate has improved 19 percent. Although the rate and frequency of train accidents remain very low, the situation has not been static. Prior to 1988, track or signal caused accidents traditionally far exceeded the number of accidents caused by any other single cause. Human factor caused accidents have been the largest single category in four of the last eight years. Of the 2,459

reportable train accidents in 1995--

- 36% were caused by track or signals;
- 38% were caused by human factors;
- 11% were caused by equipment; and
- 14% were caused by miscellaneous factors such as objects on the track, vandalism, and track-equipment interaction.

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 1995 was no exception: 569 of the 1,144 fatalities (50 percent) occurred in these accidents and incidents. Trespasser fatalities declined slightly, but also remained relatively high at 503, or 44 percent of all fatalities. Grade crossing and trespasser fatalities still account for about 90-95 percent of all fatalities. (See attached charts, "Total Casualties--All Accidents/Incidents" and "Total Fatalities--Highway-Rail and Trespassers.")

While these numbers are tragically still too high, fatalities at highway-rail grade crossings still reached an all-time low of 569 in 1995. (See attached chart, "Total Fatalities--Highway-Rail and Trespassers.") In addition, the absolute number of grade crossing accidents reached an all-time low in 1995 of 4,525. 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 27 in 1995, an improvement of 51 percent in six 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 1994 and 1995 in that the rate of on-duty casualties reached all-time lows of 5.06 and 4.24, respectively, per 200,000 person-hours in 1994 and 1995. The number of employee on-duty fatalities declined from 47 in 1993 to 31 in 1994 and 34 in 1995. The figures represent about 2.5 percent of the 1,226 fatalities for 1994 and 3.0 percent of the 1,144 fatalities in 1995. (See attached chart, "Employee on Duty Casualties.")

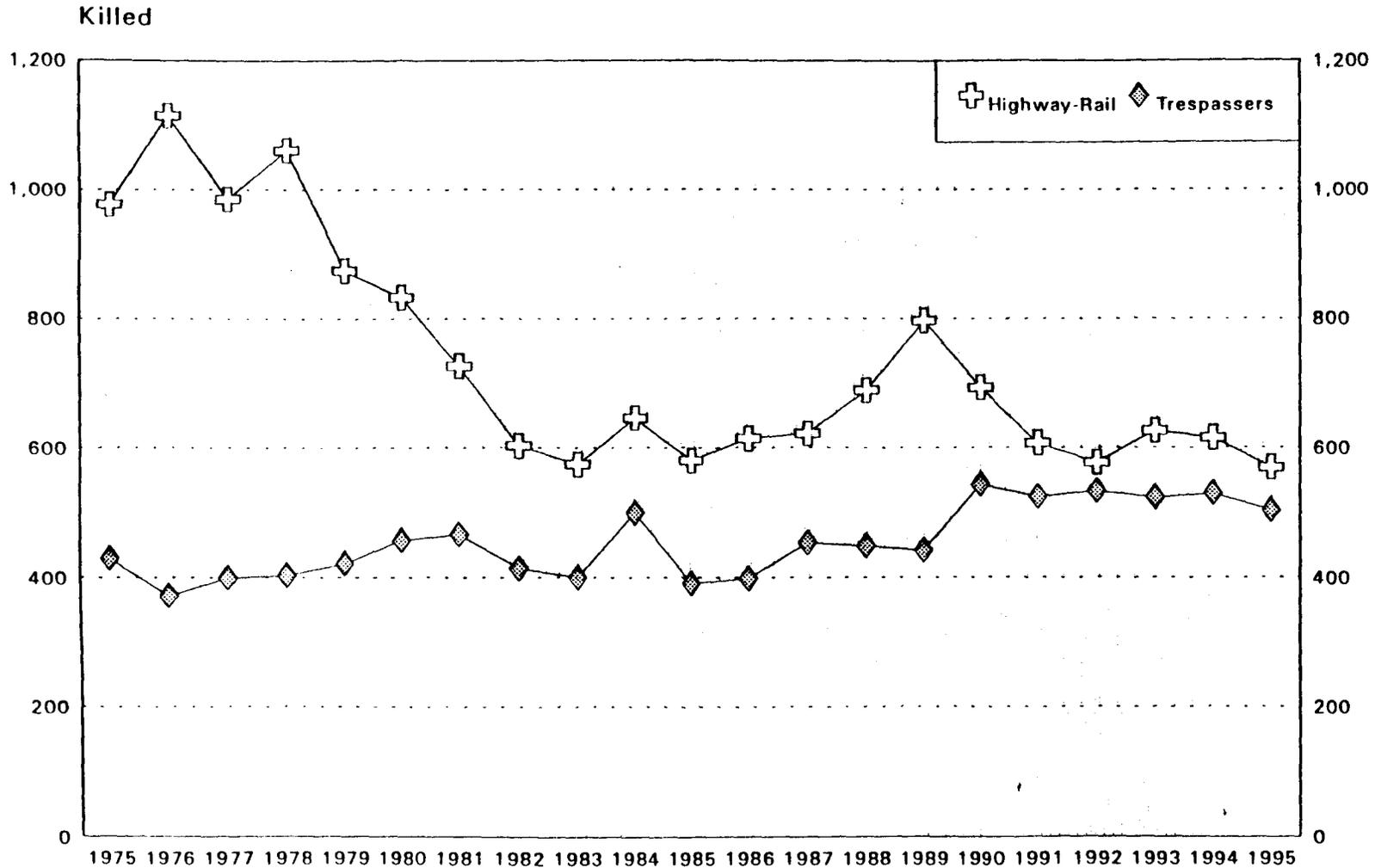
CONCLUSION

In conclusion, Madame Chairman, I would like to stress our whole-hearted commitment to railroad safety. Our ultimate objective is zero accidents, zero injuries, and zero deaths. Working together with all who are part of the rail industry, we believe this objective can be achieved.

I thank you for the opportunity to testify before you today, and would be pleased to answer any questions you may have.

TOTAL FATALITIES

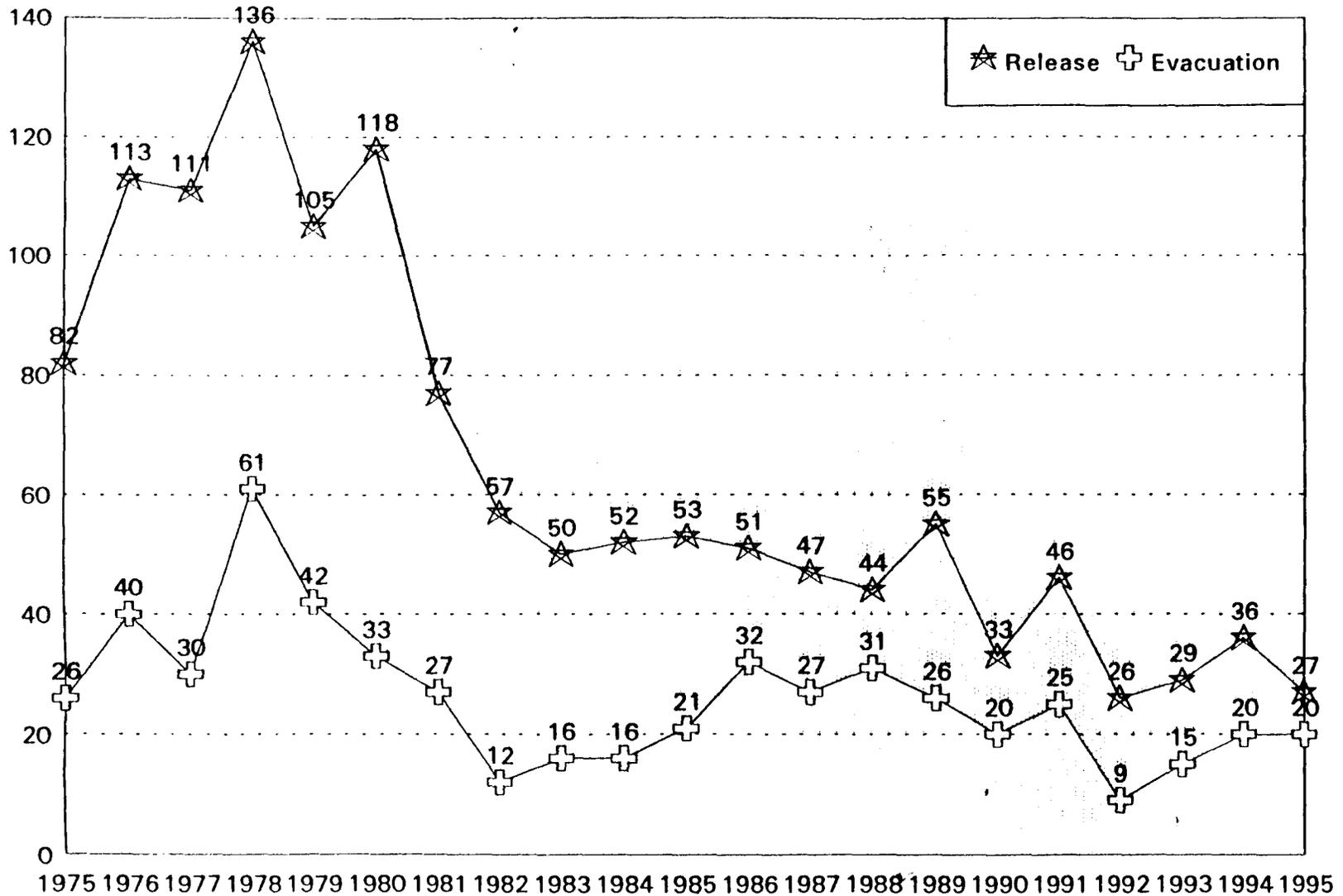
Highway-Rail and Trespassers



Highway-Rail	977	1,115	985	1,061	874	833	727	603	574	646	580	614	622	689	797	693	607	577	626	615	569
Trespassers	429	372	399	403	421	457	466	414	400	499	391	398	453	448	441	543	524	533	523	529	503

1995 counts are projections based on 11 months.

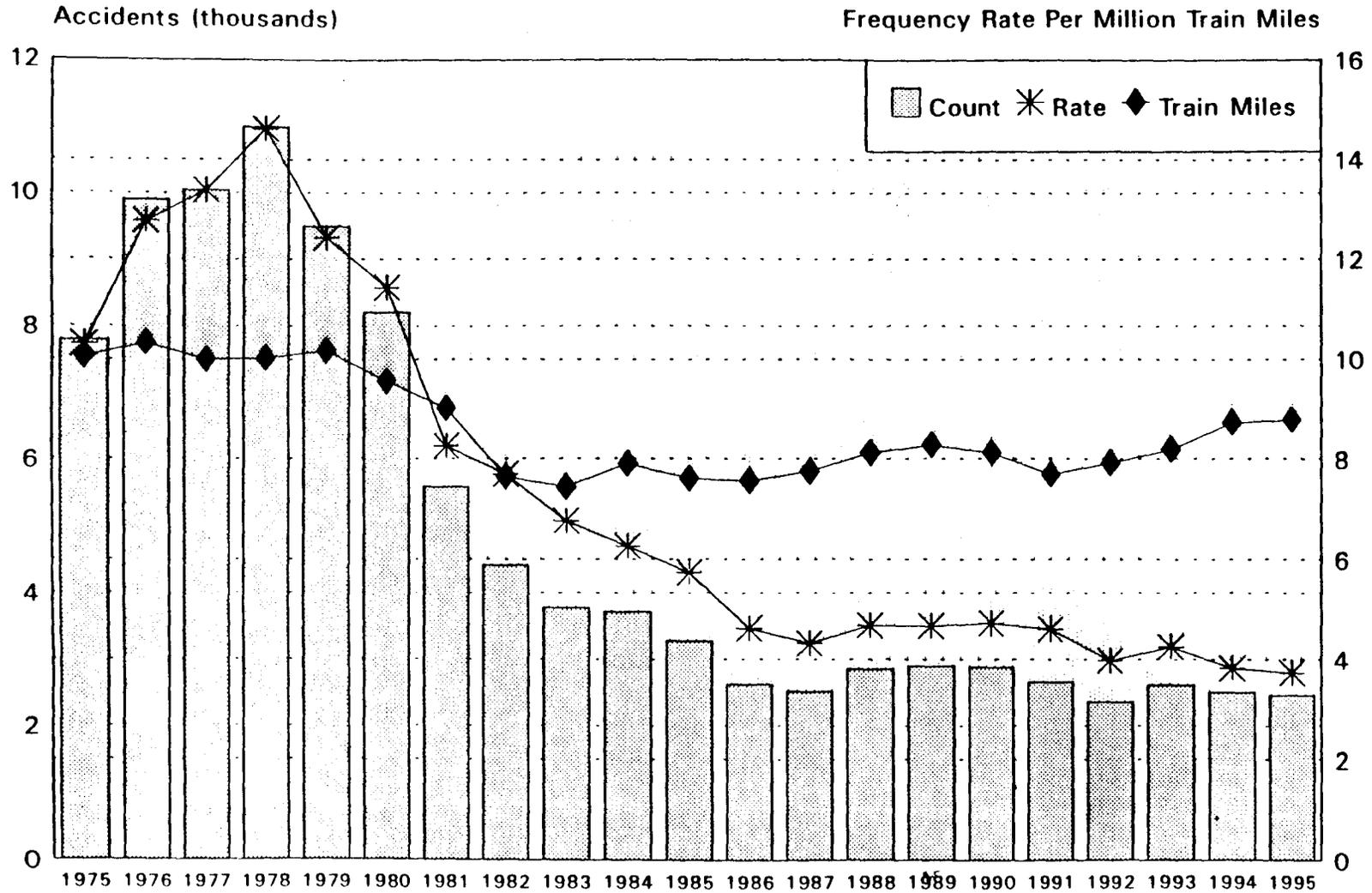
TRAIN ACCIDENTS INVOLVING HAZMAT



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

TRAIN ACCIDENTS

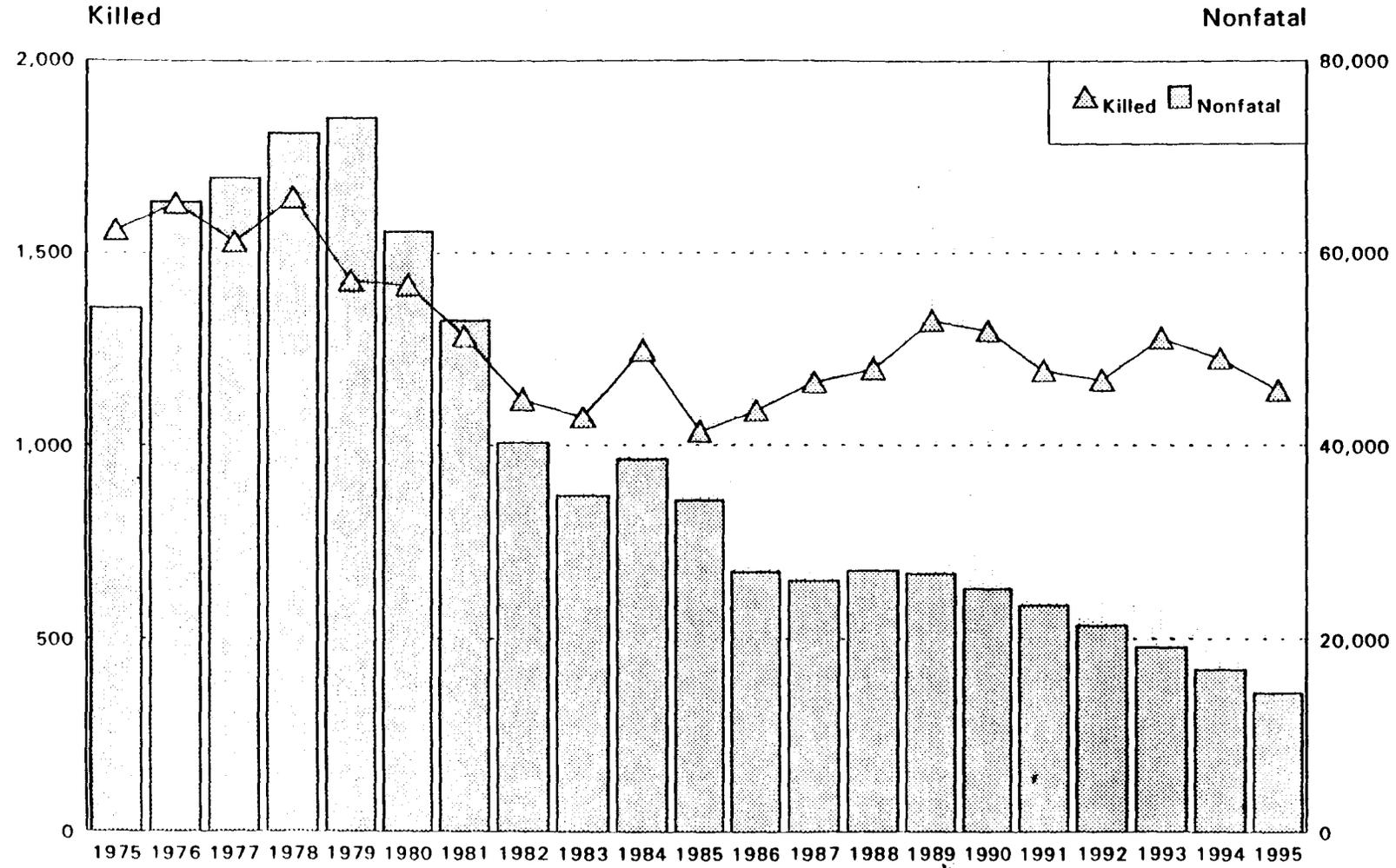
Excludes Highway-Rail Accidents/Incidents



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.
 1995 counts are projections based on 11 months

TOTAL CA JALTIES

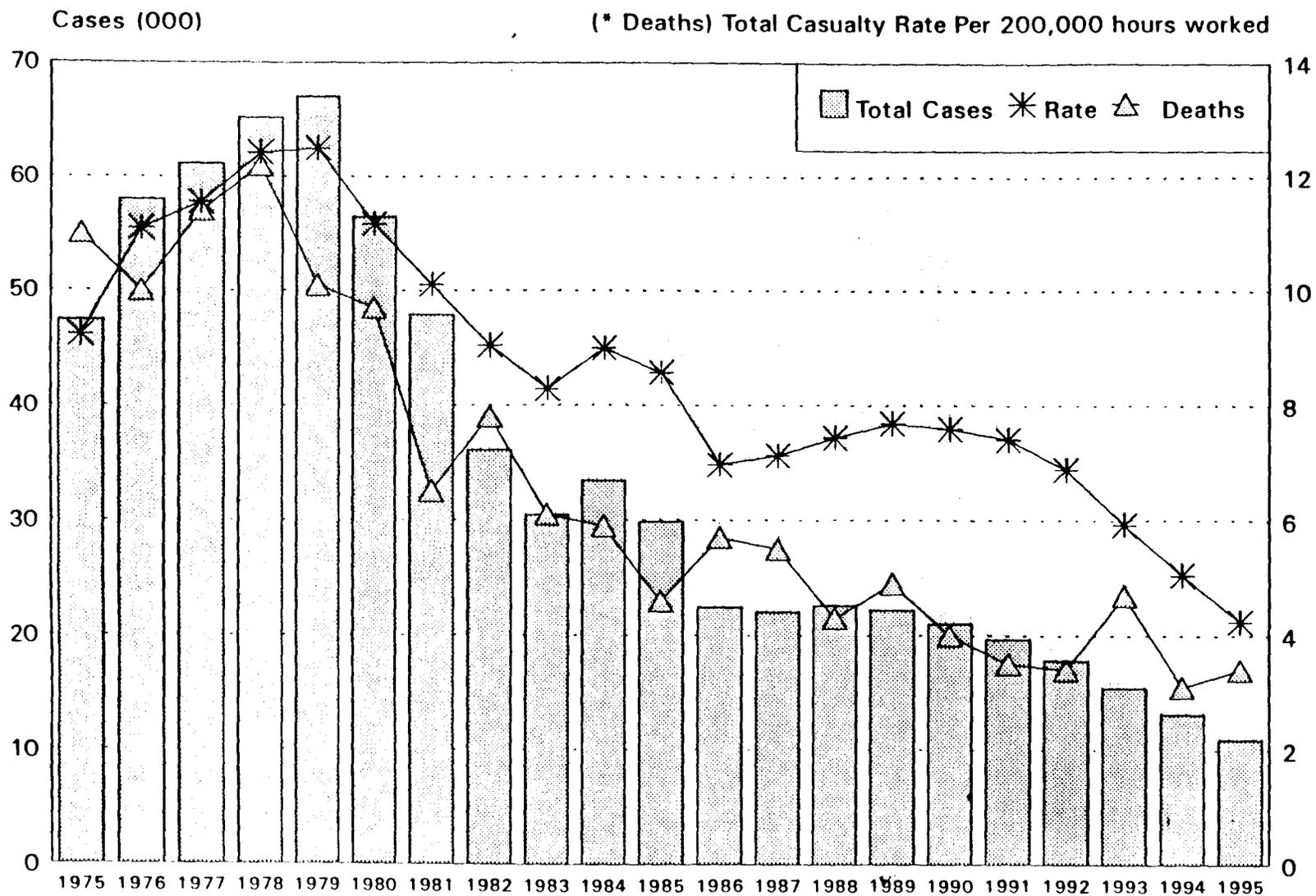
All Accidents/Incidents



Killed	1,560	1,630	1,530	1,646	1,429	1,417	1,284	1,119	1,073	1,247	1,036	1,091	1,165	1,199	1,324	1,297	1,194	1,170	1,279	1,226	1,144
Nonfatal	54,300	65,331	67,867	72,545	74,128	62,246	53,003	40,275	34,819	38,570	34,304	26,923	26,033	27,054	26,715	25,143	23,468	21,383	19,121	16,812	14,402

1995 counts are projections based on 11 months.

EMPLOYEE ON DUTY CASUALTIES

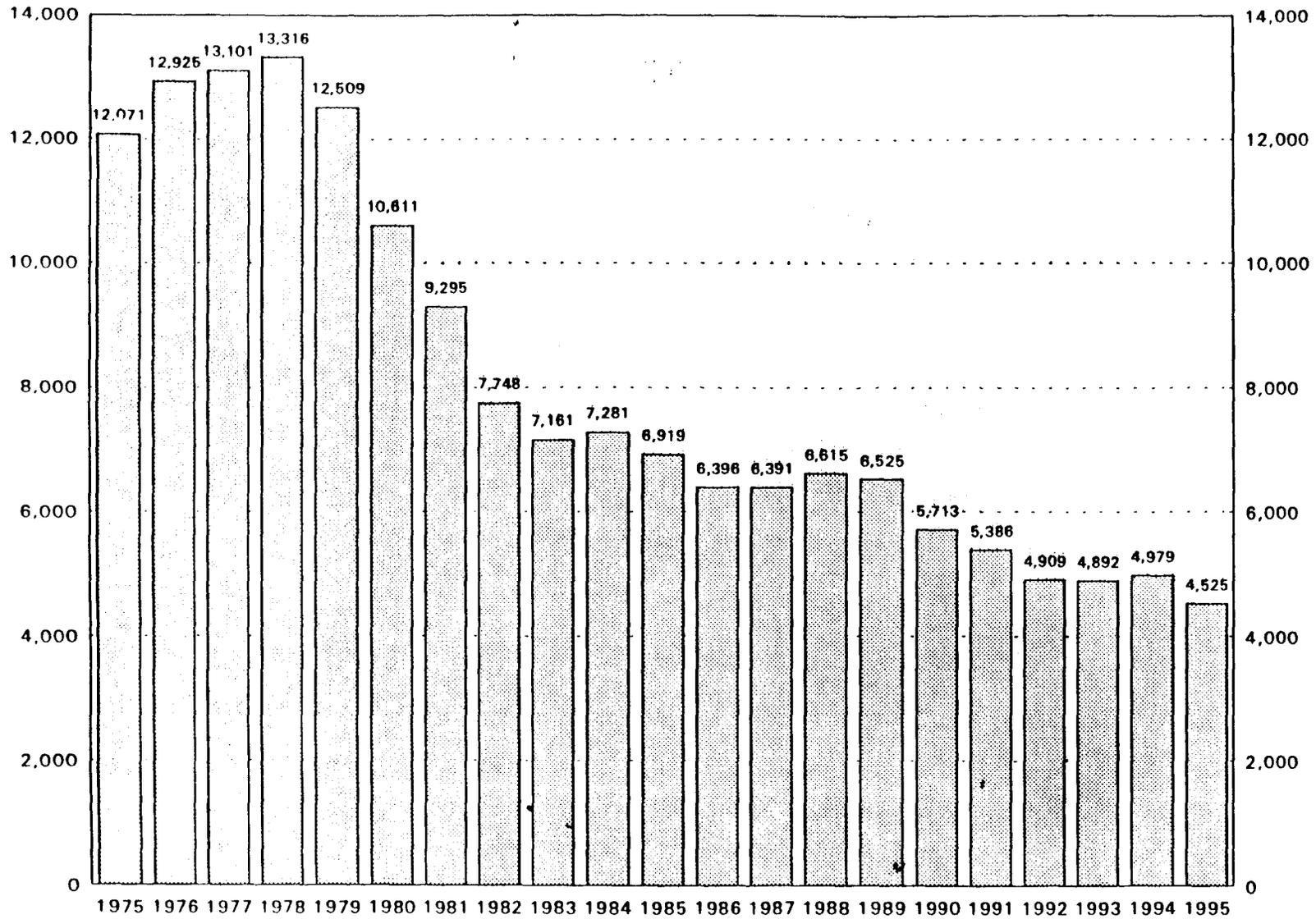


Total cases include fatalities, plus nonfatal injuries and illnesses.

* Deaths have been divided by 10 to maintain scaling.

1995 cases are projections based on 11 months.

HIGHWAY-RAIL CROSSING ACCIDENTS



1995 counts are projections based on 11 months.
Includes both public and private