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RAILROAD SAFETY

Accident Trends and FRA Safety Programs

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Madam Chair and Members of the Subcommittee:

We appreciate the opportunity to participate in this hearing on rail safety. Our testimony today will discuss the rail safety work we have conducted over the past 3 years and our views on the four bills you have introduced in response to recent rail accidents involving the release of dangerous chemicals.[1] As you requested, we will also provide accident trend information over the past 10 years for both the railroad industry in general and for Amtrak. There were a number of highly publicized rail accidents in 1991, including the devastating hazardous materials accident on the Sacramento River. We are not able to include 1991 accidents in this testimony, however, because complete data is not yet available.

In summary, our past work showed that:

-- The Federal Railroad Administration's (FRA) enforcement program did not ensure that the nation's railroads comply with federal safety regulations. The penalty settlement process was so slow--taking 36 months to settle civil penalties in 1989--that it rendered the enforcement process ineffective. However, the backlog of 18,000 violations awaiting legal review in 1989 had been reduced to 9,500 by the end of 1990, according to FRA's Administrator.

-- FRA did not have standards defining the frequency of railroad inspections or the size of the territory an inspector could cover. Without such standards, some railroads went uninspected, and FRA did not know whether the size of its inspection staff was adequate. Also, the inspectors did not uniformly apply safety regulations throughout the industry. As a result, inspectors in some

[1]Appendix I lists pertinent GAO reports and testimonies.

FRA regions often cited serious safety problems as violations while in other regions inspectors rarely cited violations for the same safety problem.

-- Hazardous materials inspectors generally did not target high-risk shippers and railroads for inspections and did not evaluate the effectiveness of shippers' and railroads' safety procedures. These problems occurred because FRA had not provided adequate guidance to the inspectors and did not have enough hazardous materials inspectors to carry out its programs. We also found that complete information on the identity of hazardous materials shippers was not available. In November 1990, the Hazardous Materials Transportation Uniform Safety Act mandated a shipper registration program that will give FRA more complete information.

Rail accident rates are substantially lower today than they were in 1980. Most of the decline, however, took place by 1986. Since then, overall accident rates have leveled off or begun to rise again, especially for intercity passenger rail service--where the accident rate per million miles has increased 47 percent, and for trains carrying hazardous materials--where accidents have increased from 185 to 236 (28 percent). Despite the overall lower accident rates, we believe the number of accidents is too high. Moreover, such recent accidents as the Sacramento River spill and the July 31, 1991, Amtrak accident where eight people lost their lives highlight the need for continuing efforts to improve rail safety.

The FRA Administrator has recognized that problems exist in his agency's safety program and has begun to take corrective action. We believe FRA's new draft National Inspection Plan has the potential to correct many of the deficiencies we identified in the inspection programs. FRA intends to begin implementing the

plan in early 1992. Also, FRA has issued or is developing new inspection guidance to standardize its inspection activity. However, because these and other corrective actions have been recently implemented and others are still in process, it is too early for us to comment on their effectiveness. In addition, several of our recommendations have been incorporated into the proposed Rail Safety Enforcement and Review Act, which will reauthorize activities under the Federal Railroad Safety Act of 1970 for fiscal years 1992 to 1994.[2]

Regarding the four rail safety bills you have introduced, one--H.R. 3367--has been incorporated into the proposed Rail Safety Enforcement and Review Act. The other three relating to the safety of hazardous materials transportation are being considered separately. The bills should assist the Department of Transportation (DOT) in maintaining and intensifying its efforts to improve rail safety nationwide. The bills will require (1) railroads to report corrective actions taken within 30 days of an FRA inspection, (2) the Coast Guard list of hazardous materials to be designated by DOT as hazardous for overland transportation, (3) DOT to immediately designate metam sodium--the substance released in the Sacramento River spill--as a hazardous material for overland transportation, and (4) DOT and the Environmental Protection Agency to add environmental harm to the list of risks that their hazardous materials laws regulate.

Before highlighting our findings concerning FRA's enforcement program, overall inspection program, and hazardous materials inspections, I would like to discuss recent accident and inspection trends.

ACCIDENT AND INSPECTION TRENDS

[2]H.R. 2607, September 24, 1991.

Accident Trends

Over the past 11 years, the number of reportable rail accidents has decreased by about two-thirds from the 1980 high of 8,451, most of that decline coming in the early 1980s. In the past 5 years, however, accidents have risen slightly, from a low of 2,647 in 1987 to 3,045 in 1990. This trend holds true when comparing accidents per million train miles as well (see fig. 1). FRA records rail accident causes in five categories: track defects, human factors, mechanical and electrical failures, rail-highway crossings, and other causes.

Since 1980, there has been a shift in the most prevalent accident cause. Track defects accounted for 41 percent of accidents in 1980 while human factors accounted for 27 percent. In 1990, track defects accounted for 32 percent of the accidents while human factors accounted for 36 percent (see fig. 2). Rail-highway crossings continue to be a small percentage of all rail accidents and incidents, accounting for 2.9 percent in 1980 and 5.5 percent in 1990. However, they have consistently represented 52 to 60 percent of all rail-related deaths during those 11 years.

Accidents involving hazardous materials (hazmat) carried on the train have not decreased as markedly. There was a sharp decline in these accidents between 1980 and 1983, with gradual declines between 1984 and 1987 (see fig. 3). Then, in 1988 and 1989, hazmat accidents increased sharply, with another decline recorded in 1990. Throughout this 11-year period, the percentage of accidents where hazardous materials were actually released remained fairly constant, averaging about 22 percent of total hazmat accidents.

You also asked us about accident trends for Amtrak. Since 1980, the number of Amtrak accidents varied from a high of 124 in 1980 to a low of 57 in 1986. Accidents generally declined between

1980 and 1986 but have been rising since then to the 113 that occurred in 1990 (see fig. 4). On average over the 11-year period, track defects accounted for 24 percent of the Amtrak accidents, mechanical and electrical failures accounted for 17 percent, human factors accounted for 21 percent, and other causes accounted for 39 percent. Of the "other" causes, 54 percent (206 out of 382 in the last 11 years) were rail-highway crossing accidents.

Inspection Trends

FRA has identified considerably more defects and violations[3] in its inspections between 1985 and 1990 even though the total number of inspections did not change. We compared the two years and found that identified defects per inspection decreased only for signal inspections (-28 percent); more defects per inspection were identified for equipment (+32 percent), track (+33 percent), hazardous materials (+73 percent), and operating practices (+723 percent). Violations per inspection rose in all disciplines, ranging from 27 percent for track to 403 percent for hazardous materials.

Clearly, inspectors are finding more things wrong when they conduct their inspections, and more of these problems are severe enough to warrant violations. While the inspection results do not appear to correlate with accidents, we believe they indicate the overall safety of the railroad industry. These statistics show that railroads could be doing more to improve safety and that FRA safety programs can be improved.

FRA'S ENFORCEMENT PROGRAM NOT EFFECTIVE IN ENSURING COMPLIANCE

[3]Defects and violations are essentially the same instances of regulatory noncompliance, except that violations are considered more severe.

FRA established its enforcement program to encourage railroads to comply with established safety rules and standards. FRA has several tools to accomplish this--emergency orders, compliance orders, special repair notices, and civil penalties. Civil penalties are the cornerstone of FRA's enforcement program. Because of their importance in trying to bring railroads into compliance with federal safety regulations, in 1988 the Congress increased the maximum civil penalty amounts from $2,500 to $10,000 for safety violations. The proposed Rail Safety Enforcement and Review Act contains a provision to also increase the minimum penalty from $250 to $1,000.

In March 1991, we reported that FRA's enforcement program did not encourage compliance with safety regulations. Over the 6-year period from 1985 to 1990, FRA has found an increasing number of safety defects and violations despite an overall decline in railroad employment, track, and equipment. In addition, the same types of safety defects, such as track defects that could lead to derailments, inadequate attention to railroad operating rules and practices, and unsafe locomotives, recurred each year.

FRA's Office of Chief Counsel (OCC) reviews civil penalties recommended by inspectors and determines whether a sufficient legal basis exists to impose the penalties. OCC also reviews, transmits, and settles penalties with the railroads. When settling civil penalty cases, FRA attorneys generally do not review current inspection data to determine whether the railroad is still experiencing the same types of safety defects as contained in the violations being settled.

We believe the attorneys need this information in deciding how to settle penalties. Throughout the 1980s, OCC settled civil penalties for about 53 cents for every $1 assessed. In addition, between fiscal years 1987 and 1989, OCC settled over 90 percent of the cases at amounts lower than originally assessed. Current

inspection data would better equip FRA to negotiate a higher proportion of assessed amounts for violations not corrected and send a clear message that safety defects must be corrected.

FRA's civil penalty process was also slow. At the end of 1989, the process took about 36 months per case--16 months longer than in 1982 when we first examined this issue. FRA took an average of 14 months to review each violation, even though FRA inspectors are asked to provide additional data for fewer than 5 percent of the recommended violations. FRA took an additional 21 months to negotiate and settle penalties.

With such a lengthy process, civil penalties are not a deterrent to noncompliance. One reason for the lengthy process is that in fiscal year 1989, FRA had a backlog of about 18,000 violation reports awaiting review and 6,000 awaiting settlement. According to FRA, the backlog occurred because of staff shortages and attrition, increased workload, and concurrent duties, such as drafting new regulations required by the Rail Safety Improvement Act of 1988.

In our March 1991 report, we recommended that the Secretary of Transportation quickly review and notify railroads of penalty assessments, consider the railroads' compliance history when negotiating penalty assessments, and more expeditiously settle penalty cases. FRA has reduced the backlog of civil penalty cases and has set a goal to settle violations with the railroads within 1 year after OCC has received a report of the violation. According to FRA's Deputy Assistant Chief Counsel (Safety Division), there were 3,021 violations awaiting legal review as of November 1991--none more than 1 year old. Another 8,423 have been reviewed and

are awaiting settlement, 5,365 of which were transmitted to the railroads since January 1, 1991.[4]

In addition, the proposed Rail Safety Enforcement and Review Act incorporates several of our recommendations and suggestions to improve FRA's safety enforcement program. The proposed act requires FRA to consider railroad safety history when compromising--or lowering--a civil penalty during the settlement process. The act would also require that FRA test a system allowing regional directors to perform initial case reviews, assess penalties, and settle cases.

In March 1991, we reported that, in a test of this type of system, the Federal Highway Administration reduced processing time from an average of 154 days to an average of 86 days and increased the penalty amounts collected. Since FRA inspectors develop sufficient evidence for more than 95 percent of the violations, this approach would speed up the notification process by eliminating the attorney's review. The proposed law would require railroads to settle directly with the regional offices or ask to settle at the FRA headquarters level if the assessed penalty is in excess of $5,000.

ACTIONS BEING TAKEN TO IMPROVE SAFETY INSPECTIONS

The purpose of FRA's safety inspection program is to determine whether railroads are complying with established safety rules and standards. To accomplish this, FRA established five inspection disciplines: track, signals, operating practices, equipment, and hazardous materials. Each FRA inspector specializes in only one discipline.

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[4]We were not able to independently verify FRA's 1991 statistics concerning violations awaiting review and settlement.

From our previous work, we found that FRA's inspection program was not effective for several reasons. First, FRA did not have inspection coverage standards. As a result, many railroads were not inspected. In 1989, for example, 32 railroads received no inspection of any type, 168 did not receive an operating practices inspection, 151 did not have equipment inspections, and 75 that owned track did not receive a track inspection.

Second, railroads were not targeted for inspections based on available accident and inspection data but rather on each inspector's judgment and knowledge. We found little relationship between changing accident trends (a safety indicator) and FRA inspection activity. As a result, railroads with increasing numbers of accidents did not receive additional inspection coverage. In many instances, inspections actually decreased.

Third, FRA and state inspectors did not uniformly apply safety regulations throughout the industry. We found numerous examples of one FRA region filing many more violations than another for the same defective condition. For example, in 1988 one FRA region cited railroads for inadequate track inspection records 312 times, but filed no violations. Another region found the same problem 433 times and cited 165 violations.

Fourth, FRA had no mandatory inspection follow-up program and does not require railroads to respond in writing about corrective actions taken on safety problems. Although railroads generally provided FRA information on corrective actions taken on track and signal defects, we found that between 1986 and 1988 railroads did not provide information for 11 percent of the track defects and 15 percent of the signal defects.

Last, FRA did not enforce maximum track speed limits. FRA exercises control over train speed through its track regulations. Because it intended the regulations to set track maintenance

standards rather than speed limits; however, FRA believes violations may be written only when a railroad does not maintain the track to one of six classifications that correspond to the actual speed.

We made several recommendations to improve FRA's railroad safety inspection efforts. In response to our recommendations, FRA has begun to restructure its inspection program and is developing inspection coverage standards for each discipline and a program to quantify the number of federal and state inspectors needed to attain those standards. New inspection manuals have been issued for hazardous materials and signal inspectors, and a new track inspection manual is currently being printed. According to the Director, Office of Safety Enforcement, new inspection manuals for operating practices and equipment inspectors are being developed as well.

FRA has also changed its National Inspection Plan to include separate plans for each inspection discipline for the larger railroads and one inclusive plan for the smaller railroads. These plans, issued to regional personnel just a few weeks ago, are based on existing accident, injury, traffic, and inspection data to target high-risk railroads for inspection. FRA has also announced measures to increase communication and coordination between FRA and state inspectors. Finally, FRA hired a Director of Communications and Training to coordinate training for newly hired and existing inspectors. A major focus of the training will be achieving consistency among inspectors conducting similar inspections and in citing violations.

Although FRA has taken or plans to take these actions, it has responded negatively to our recommendation to establish a program to ensure that railroads report actions taken to correct identified safety defects. However, the proposed Rail Safety Enforcement and

Review Act will require railroads to report corrective actions to FRA within 30 days.

FRA has not implemented our recommendations concerning greater enforcement of speed limits. We recommended that FRA inspectors cite railroads for exceeding speed limits permitted by the declared classification or track curvature. We also recommended increased oversight of railroad enforcement actions by (1) requiring railroads to report information to FRA on the speed tests they are required to conduct internally, including disciplinary action taken against engineers who are caught speeding, and (2) establishing standards for acceptable speed test failure rates, how speed tests should be conducted, and what types of disciplinary action should be taken when failures occur. In recent discussions with FRA officials, we learned that several alternative actions are being considered to improve speed enforcement. However, they have not yet progressed to a point where we can evaluate them.

HAZARDOUS MATERIAL INSPECTION SHORTCOMINGS

FRA Actions

In 1989, we reported that FRA had no assurance that railroads and shippers followed the regulations governing rail transportation of hazardous materials. First, FRA did not have a sufficient number of hazardous materials inspectors. We found that inspectors in four FRA regions conducted only about 30 percent of required inspections. Second, the 28 inspectors concentrated their efforts on inspecting individual tank cars, which indicated only whether those particular tank cars were or were not safe, rather than reviewing the adequacy of railroads' and shippers' safety procedures to ensure that all cars were safe.

Last, as with its inspections in other safety areas, FRA was not targeting high-risk railroads and shippers for inspection. For

example, in 1986 and 1987, 78 shippers reported three or more hazardous materials releases. FRA officials told us that these shippers should have been inspected within 1 year of the release. However, we found that a third of the shippers were not inspected within the specified time.

In response to our findings, FRA increased the size of its hazardous materials staff, bringing the total to 43 (36 inspectors and 7 supervisors); revised its hazardous materials enforcement manual to emphasize the need for inspectors to review shipper and railroad safety; and surveyed states to determine whether they were interested in participating in FRA's hazardous materials inspection program. The Hazardous Materials Transportation Uniform Safety Act of 1990 authorized states to participate in the FRA program--an authority that did not previously exist.

Research and Special Programs Administration Actions

We have also reported on inadequacies in the Hazardous Materials Information System (HMIS) maintained by the Research and Special Programs Administration (RSPA). RSPA collects information on hazardous materials releases for all transportation modes, including rail. FRA uses RSPA's data base and its own hazardous materials reporting system for planning and implementing its inspection program.

However, RSPA does not systematically identify rail shippers of hazardous materials. In November 1989 we reported that the HMIS system does not contain complete information and that RSPA does not obtain and compare hazardous materials information from other transportation modes within the department. Then in September 1991 we reported that key initiatives designed to improve hazardous materials information collection and management had faltered. As a result, the department's ability to effectively inspect shippers

and carriers of hazardous materials and enforce hazardous materials regulations is impaired.

Although RSPA has not yet responded to our September 1991 report, it disagreed with our November 1989 recommendations and took no corrective action. One of those recommendations, to establish a mandatory registration program for hazardous materials shippers, was incorporated into the 1990 Hazardous Materials Transportation Uniform Safety Act. RSPA issued a notice of proposed rulemaking for this program on October 10, 1991, but does not have a time estimate for when it will be operational.

COMMENTS ON FOUR BILLS INTRODUCED BY REPRESENTATIVE BOXER

The four hazardous materials-related bills you have introduced, if enacted, could correct many of the deficiencies we have identified in previous reports on rail safety and in testimony before this Subcommittee. This legislation is directed at preventing tragic incidents such as the environmental damage caused by the July 14, 1991, rail spill of metam sodium into the Sacramento River.

H.R. 3367 will require railroads to report actions taken to correct defects and violations identified by FRA inspectors within 30 days of receiving the report. We recommended this action in our July 1990 report on FRA's inspection program. FRA responded by proposing new guidance to its inspectors on follow-up inspections but did not agree with our recommendation to require the railroads to report on corrective action. H.R. 3367 will mandate the reporting, and we agree with its intent. As previously discussed, this provision has also been incorporated into the proposed Rail Safety Enforcement and Review Act.

In addition, the bill will require FRA to formally track both scheduled inspections and any inspection cancellations. We did not consider this element in our previous work, but we believe it has merit. FRA's Quality Improvement Program, now being implemented, is a sophisticated data base that defines and codes all inspector activities, according to the FRA Administrator. We believe the requirement in your bill could easily be incorporated into this data system.

H.R. 3423 will require that all materials designated as hazardous by the Coast Guard are designated as hazardous by the Department of Transportation for overland carriers. We identified this regulatory gap in preparing for testimony before this Subcommittee following the Sacramento River spill. While RSPA has authority to adopt these substances under the Hazardous Materials Transportation Act, its regulatory process takes time. This proposed legislation will shorten the time needed to get the substances under the umbrella of RSPA's regulations. We support this legislation.

Your related bill, H.R. 3758, would require the Secretary of Transportation and the Administrator of the Environmental Protection Agency to designate metam sodium as a hazardous substance within 10 days of enactment. Considering the damage the substance caused when spilled into the Sacramento River, we believe the demonstrated environmental and possible public health risks associated with its unintentional release in bulk quantities warrant a change in the way it is regulated in overland transportation. The actions required by H.R. 3423 will achieve this end and, if enacted, further legislative measures such as H.R. 3758 would not be necessary.

The fourth bill, H.R. 3424, would amend the Hazardous Materials Transportation Act[5] and the Federal Railroad Safety Act[6] by adding environmental harm to the list of risks that the laws regulate. In particular, the bill seeks to ensure that the Secretary of Transportation regulates all hazardous materials that may be accidentally discharged into the air, water, or soil while in transport by any carrier. In our view, this is a longer-term, more comprehensive approach to regulating the transport of hazardous materials. Again, considering the harm that took place on the Sacramento River and the increasing amount of hazardous materials that are transported each year, we believe this bill could significantly increase safety if effectively implemented by the responsible DOT agencies.

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In concluding my remarks, I would like to say that although accidents have declined over the past 11 years for a number of reasons, we believe they are still too high. FRA has been conscientious about responding to most of our reports, reflecting a sincere commitment to improve its operations and increase the safety of the railroad industry. However, many corrective actions are still being implemented or are so new that we cannot comment on their effectiveness. Overall, the bills you have proposed would also improve rail safety, particularly in the hazardous materials area. As we recommended in our prior reports, one issue that still needs to be addressed is the problems associated with RSPA's hazardous materials data base. You may wish to focus on this issue when considering future legislative measures to improve hazardous materials transportation safety.

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[5]Public Law No. 93-633, 88 Stat. 2156 (1975).

[6]Public Law No. 91-458, 84 Stat. 971 (1970).

This concludes my prepared statement. I would be happy to answer any questions.

PERTINENT GAO REPORTS AND TESTIMONIES

Railroad Safety: FRA Needs to Correct Deficiencies in Reporting Injuries and Accidents (GAO/RCED-89-109, Apr. 5, 1989).

Improvements Needed in DOT's Hazardous Materials Rail Safety Program (GAO)/T-RCED-90-13, Nov. 7, 1989).

Railroad Safety: DOT Should Better Manage Its Hazardous Materials Inspection Program (GAO/RCED-90-43, Nov. 17, 1989).

Improvements Needed in FRA's Hazardous Materials Inspection and Safety Reporting Programs (GAO/T-RCED-90-35, Feb. 28, 1990).

Railroad Safety: More FRA Oversight Needed to Ensure Rail Safety in Region 2 (GAO/RCED-90-140, Apr. 27, 1990).

Railroad Safety: New Approach Needed for Effective FRA Safety Inspection Program (GAO/RCED-90-194, July 31, 1990).

Improvement Needed in FRA's Safety Inspection Program (GAO/T-RCED-91-2, Oct. 5, 1990).

Railroad Safety: FRA's Staffing Model Cannot Estimate Inspectors Needed for Safety Mission (GAO/RCED-91-32, Nov. 21, 1990).

Railroad Safety: Weaknesses Exist in FRA's Enforcement Program (GAO/RCED-91-72, Mar. 22, 1991).

Hazardous Materials: Chemical Spill in the Sacramento River (GAO/T-RCED-91-87, July 31, 1991).

Hazardous Materials: 1990 Transportation Uniform Safety Act--Status of DOT Implementing Actions (GAO/RCED-92-55BR, Nov. 5, 1991).

Requests for copies of GAO reports should be sent to:

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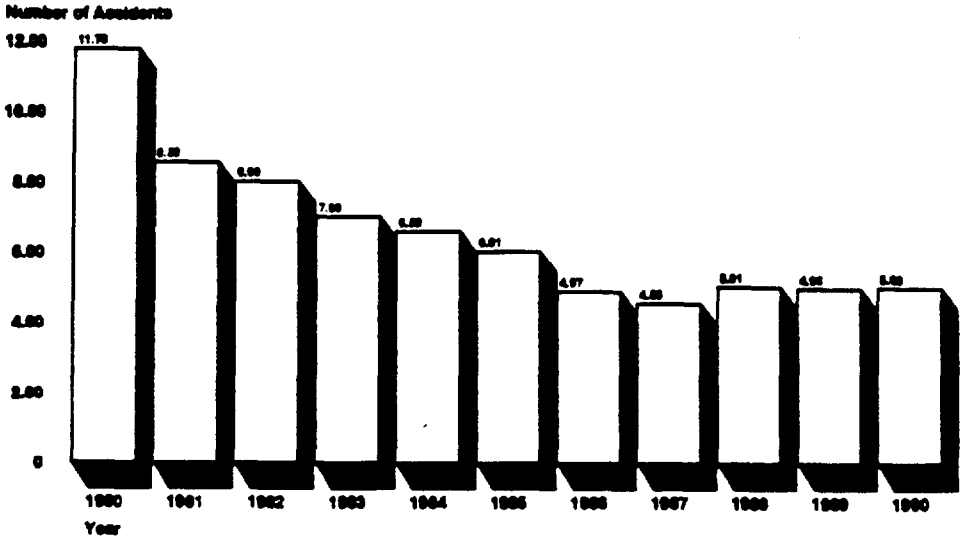
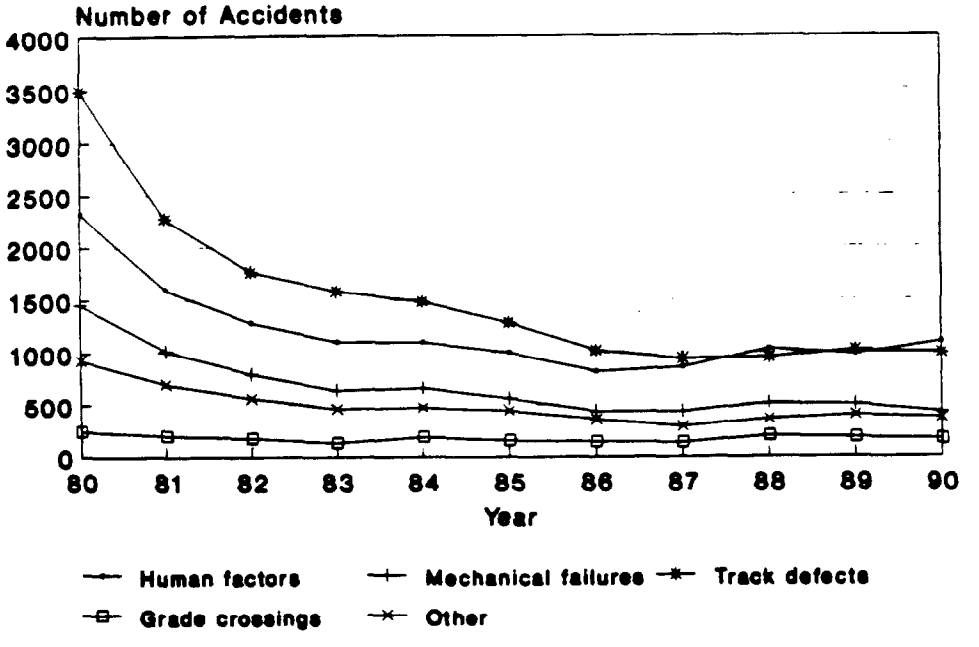
Figure 1: TRAIN ACCIDENTS PER MILLION TRAIN-MILES



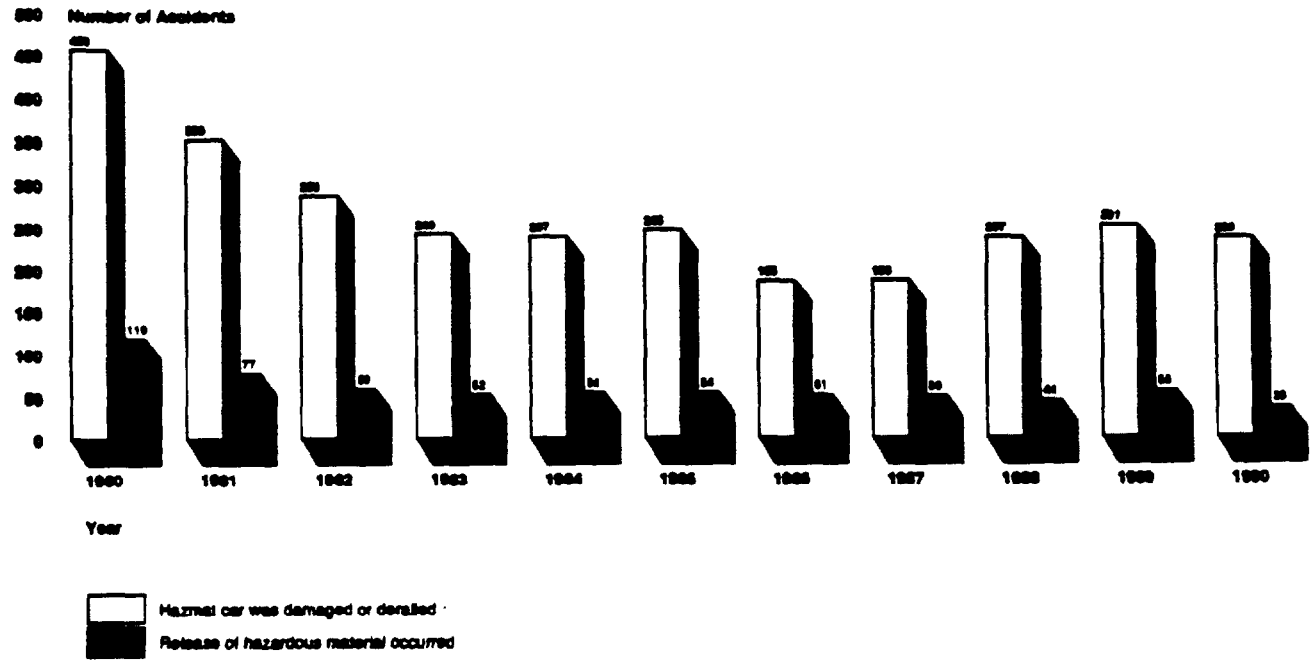
Source: FRA Accident/Incident Bulletins - 1985, 1990

Figure 2: TRAIN ACCIDENTS BY CAUSE



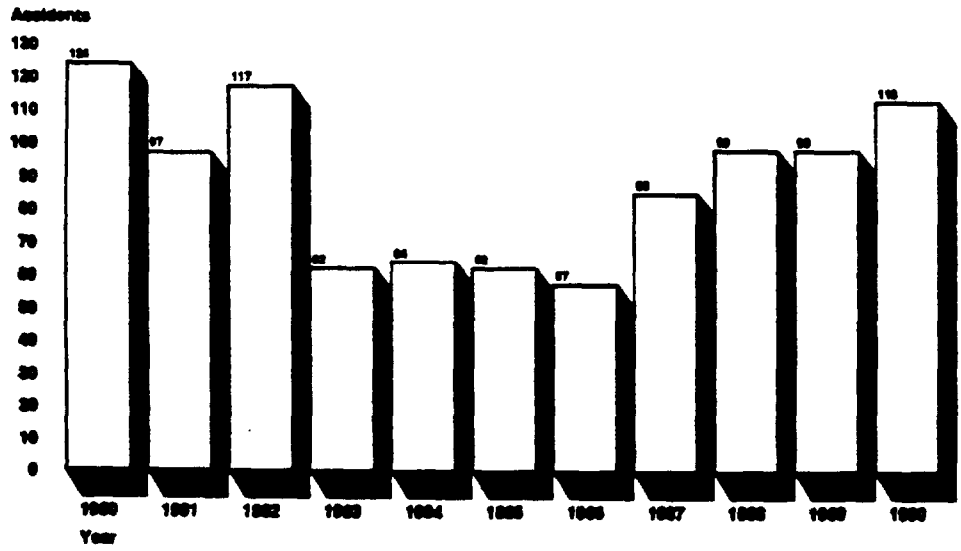
Source: FRA Accident/Incident Bulletins

Figure 3: TRAIN ACCIDENTS INVOLVING CONSISTS TRANSPORTING HAZARDOUS MATERIALS



Source: FRA Accident/Incident Bulletins - 1985, 1990

Figure 4: AMTRAK ACCIDENTS 1980 - 1990



Source: FRA Accident/Incident Bulletins, 1980 - 1990

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