

31-7

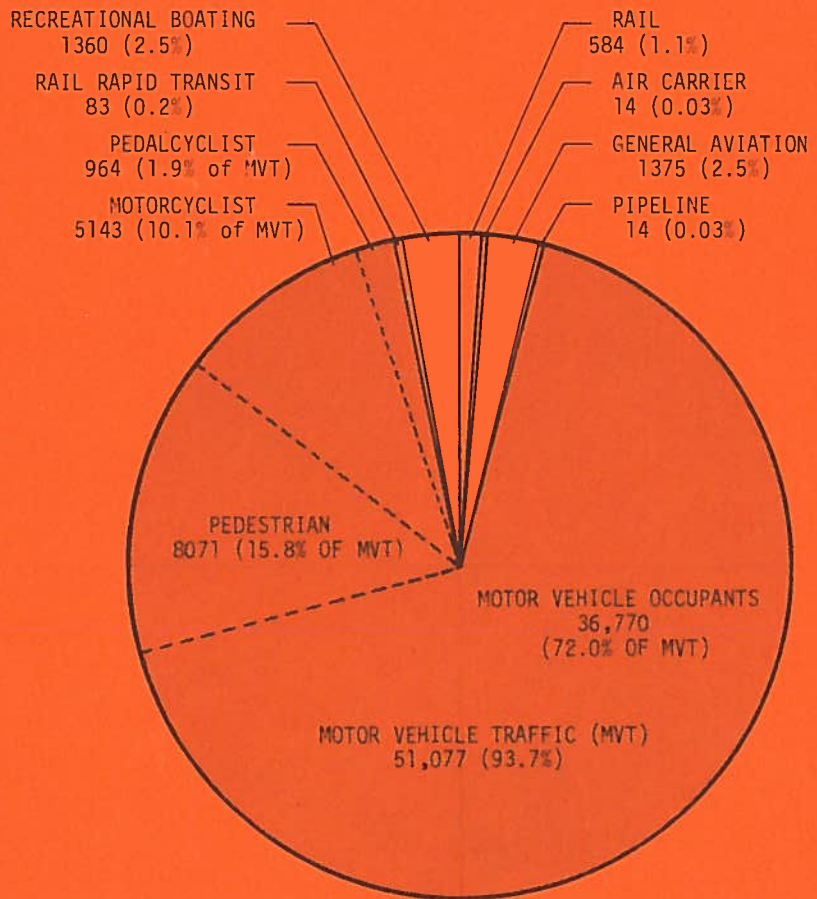
TRANSPORTATION SAFETY INFORMATION REPORT



Prepared by the Research and Special Programs Administration Transportation Systems Center

1980 ANNUAL SUMMARY

- Total transportation fatalities for 1980 decreased by 0.7%. The 54,507 fatalities for all modes was down slightly from the 1979 total of 54,887.
- Motor Vehicle Traffic fatalities totalled 51,077 in 1980... down just 0.03% from 1979. The fatality rate rose, however.
- U.S. Air Carriers achieved record low fatalities, fatal accidents, and total accidents in 1980.
- General Aviation total accident rates also reached record lows in 1980. Fatalities also dropped, while fatal accident rates increased slightly.
- Recreational Boating and Pipeline fatalities showed a drop during 1980, compared with 1979.



TOTAL FATALITIES: 54,507

1. Report No. DOT-TSC-RSPA-81-7		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle TRANSPORTATION SAFETY INFORMATION REPORT 1980 Annual Summary				5. Report Date June 1981	
				6. Performing Organization Code DTS-423	
7. Author(s) M. Compagna, Task Manager				8. Performing Organization Report No. DOT-TSC-RSPA-81-7	
9. Performing Organization Name and Address U.S. Department of Transportation Research and Special Programs Administration Transportation Systems Center, Transportation Information Division, Cambridge MA 02142				10. Work Unit No. (TRAI) RS109/R1519	
				11. Contract or Grant No.	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Research and Special Programs Administration Office of Policy, Plans and Program Management Washington DC 20590				13. Type of Report and Period Covered Final Report 1980	
				14. Sponsoring Agency Code DPA-20	
15. Supplementary Notes					
16. Abstract <p>The "Transportation Safety Information Report," is a compendium of selected national-level transportation safety statistics for all modes of transportation. The report presents and compares data for transportation fatalities, accidents, and injuries for the current and preceding years.</p> <p>Featured in this report is the annual summary of modal safety hazards and safety program highlights for 1980, as well as summary charts detailing modal safety trends from 1970-1980.</p>					
17. Key Words Safety, Statistics, Transportation Fatalities, Accidents, Injuries			18. Distribution Statement For sale by the Superintendent of Documents U.S. Government Printing Office, Washington DC 20402		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 88	22. Price

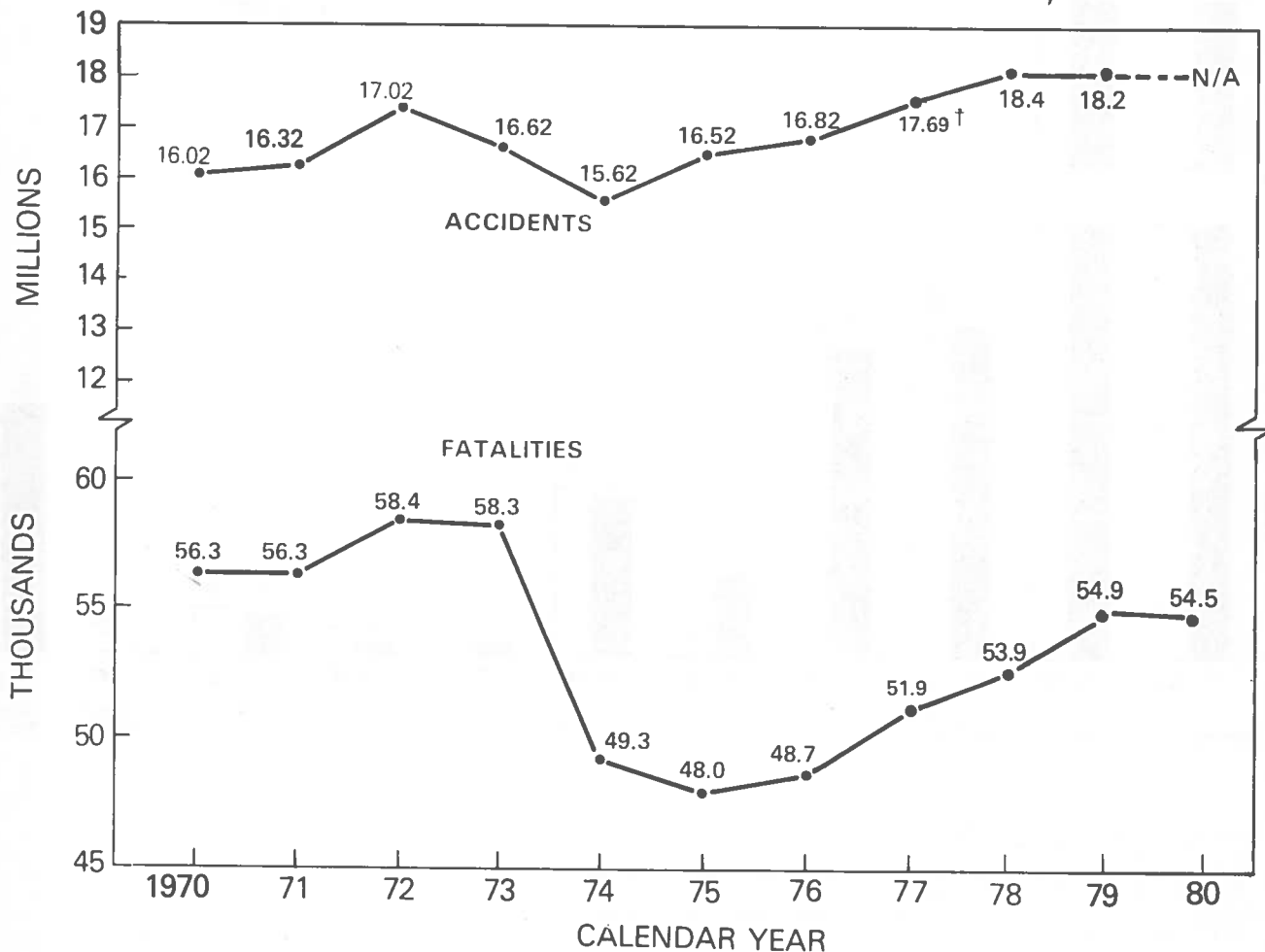
TABLE OF CONTENTS

	PAGE NO.
SUMMARY STATISTICS OF TRANSPORTATION SAFETY	1
SAFETY PERFORMANCE BY MODE	
<i>Highway</i>	5
<i>Rail</i>	22
<i>Rail Rapid Transit</i>	26
<i>Aviation</i>	29
<i>Marine</i>	
<i>Waterborne Transport</i>	39
<i>Recreational Boating</i>	45
<i>Materials Transport</i>	
<i>Pipelines</i>	52
<i>Hazardous Materials</i>	53
NEW DOT SAFETY REGULATIONS	58
GLOSSARY	76
TRANSIS REPRESENTATIVES AND MANAGEMENT	

SUMMARY STATISTICS OF TRANSPORTATION SAFETY

- Total transportation fatalities for 1980 decreased to 54,507 compared with 54,887 in 1979, down 0.7%.
- The Motor Vehicle Traffic, Air Carrier, General Aviation, Recreational Boating, and the Pipeline modes all reported reductions in fatalities in 1980. Railroad, Rail Rapid Transit, and Waterborne transportation experienced fatality increases in 1980.
- Injuries decreased in the Railroad, Rail/Highway Grade Crossing, and Hazardous Materials modes, while Pipeline, Recreational Boating, and Waterborne transportation all reported increases in the number of injuries for 1980.

CHART 1. TRANSPORTATION ACCIDENTS AND FATALITIES, ★ 1970-1980



NOTE: DOES NOT INCLUDE WATERBORNE TRANSPORTATION DATA.

* MOST ACCIDENTS AND FATALITIES ARE MOTOR-VEHICLE-TRAFFIC-RELATED.

† PRIOR TO 1977, THE RAIL AND RAIL RAPID TRANSIT PORTIONS OF TOTAL TRANSPORTATION ACCIDENTS CONSISTED OF RAIL EQUIPMENT ACCIDENTS ONLY. AS OF 1977, TRAIN AND NON-TRAIN INCIDENTS ARE ALSO INCLUDED (SEE GLOSSARY).

N/A = NOT AVAILABLE

TABLE 1. FATALITIES, INJURIES, AND ACCIDENTS BY TRANSPORTATION MODE, 1979-1980

TRANSPORTATION MODE	FATALITIES			INJURIES			ACCIDENTS/INCIDENTS		
	1979	1980	% CHANGE	1979	1980	% CHANGE	1979	1980	% CHANGE
MOTOR VEHICLE TRAFFIC [1]	51,093	51,077	-0.03	3,975,000	N/A	—	18,100,000	N/A	—
RAILROAD*	546	584	+7.0	69,748	58,356	-16.3	75,555	63,663	-15.7
AIR CARRIER**	355	14	-96.1	311	N/A	—	32	20	-37.5
GENERAL AVIATION	1,382	1,375	-0.5	N/A	N/A	—	4,051	3,799	-6.2
RECREATIONAL BOATING	1,400	1,360	-2.9	2,463	2,650	+7.6	5,368	5,513	+2.7
PIPELINE	49	14	-71.4	65	325	+400.0	2,219	2,215	-0.2
WATERBORNE [2]	190	192	+1.1	118	122	+3.4	4,665	4,367	-6.4
RAIL RAPID TRANSIT*	62	83	+33.9	N/A	N/A	—	7,191	N/A	—
TOTAL TRANSPORTATION [3]	54,887	54,507	-0.7	N/A	N/A	—	18,199,081	N/A	—
HAZARDOUS MATERIALS [4]	18	19	+5.6	941	619	-34.2	17,524	16,115	-8.0
RAIL/HIGHWAY GRADE CROSSINGS [4]	883	833	-5.7	4,378	3,890	-11.1	12,509	10,617	-15.1

N/A: Not available.

* Fatalities, injuries, and accidents resulting from rail equipment accidents, train incidents, and non-train incidents.

** Beginning in 1979, fatalities, injuries, and accidents on Deregulated All Cargo Carriers are included.

[1] Fatality figures are NHTSA estimates for the 50 states and District of Columbia based on a 30-day definition (See Glossary). Accident data are obtained from National Safety Council estimates.

[2] Waterborne data are for vessel casualties only and are kept on a fiscal-year basis. 1980 data are estimated.

[3] Does not include Waterborne transportation.

[4] These fatalities are included in the above modes and Total Transportation.

1979-1980 STATISTICAL SUMMARY

Fatalities

The total number of transportation fatalities recorded in 1980 decreased by 0.7 percent, compared with the year 1979. Motor Vehicle Traffic, Air Carrier, General Aviation, Recreational Boating, Pipeline, and Rail/Highway Grade Crossing all reported decreases in fatalities in 1980. Waterborne transportation, Railroad, Rail Rapid Transit, and Hazardous Materials operations showed increases in fatalities in 1980.

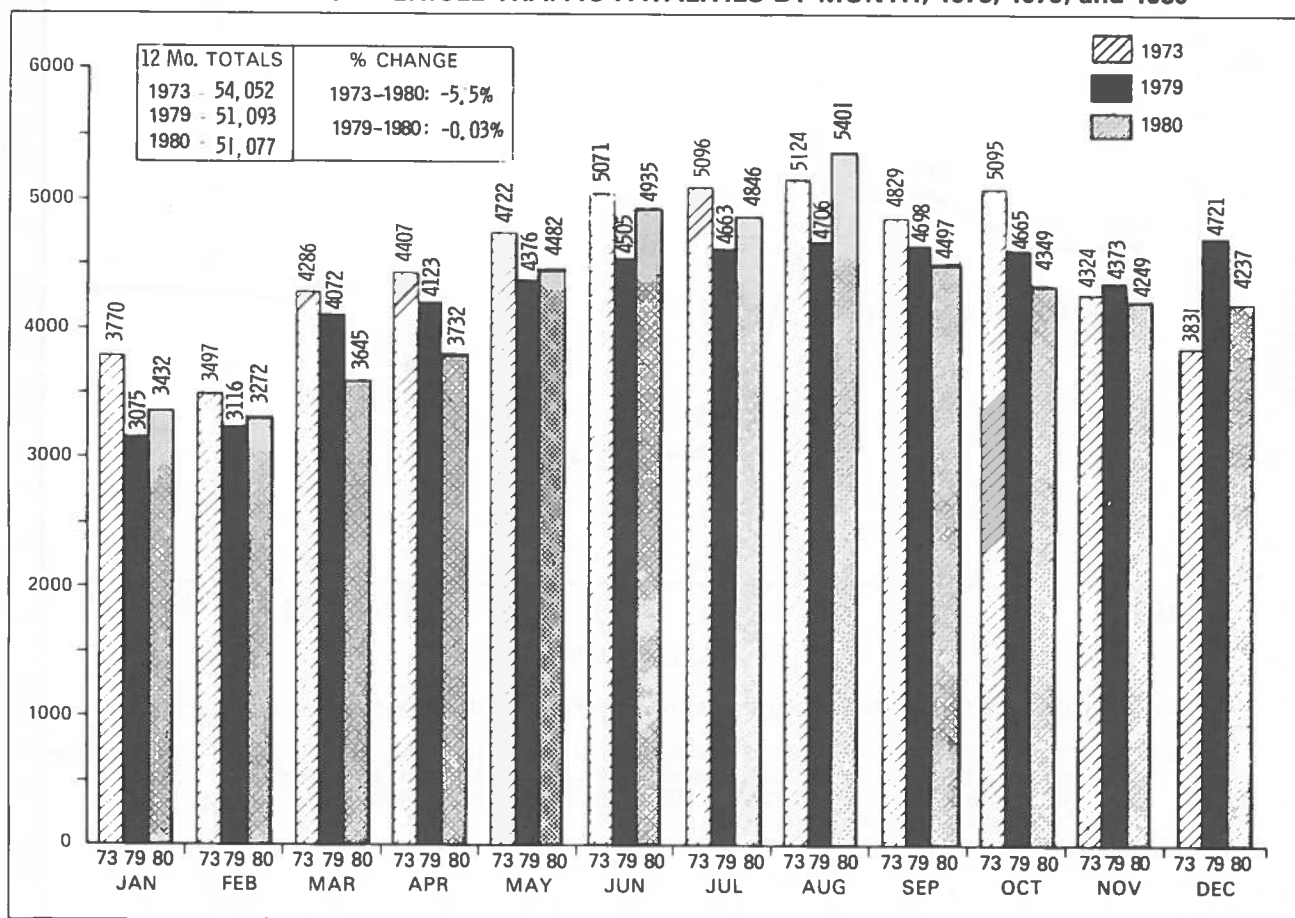
As in 1978 and 1979, Motor Vehicle Traffic fatalities again exceeded 50,000 in 1980. An estimated 51,077 people died in traffic accidents, a decrease of just 0.03 percent from the 51,093 fatalities in 1979. The total number of motor vehicles registered continued to rise (165 million) while vehicle miles travelled dropped slightly in 1980. Passenger car occupant fatalities also dropped, from 27,799 in 1979 to 27,433 in 1980, a decrease of 1.3 percent.

Air Carrier fatalities decreased to a record low, as 14 fatalities occurred in 1980 compared to 355 in 1979. General Aviation fatalities went down slightly in 1980. A total of 1,375 people died in General Aviation compared to 1,382 in 1979.

HIGHWAY

- Motor Vehicle Traffic deaths in the U.S. exceeded 50,000 for the third straight year. An estimated 51,077 died in traffic accidents in 1980, a decrease of 0.03% from the 1979 total of 51,093.
- The fatality rate, however, rose in 1980...from 3.34 deaths per 100 million vehicle miles of travel in 1979 to 3.38 in 1980.
- The number of licensed drivers increased by 20.1% from 1973 to 1980, while the number of registered motor vehicles increased by 26.8% during the same period.
- Although passenger car fatalities account for over half of all traffic fatalities, they showed a decrease of 1.3% in 1980, as compared to 1979.
- The largest increases in traffic fatalities from 1979 to 1980 were in pickup/van occupants (1.7%) and motorcyclists (5.1%). From 1975 to 1980, the increases were 51.5% and 61.3%, respectively.

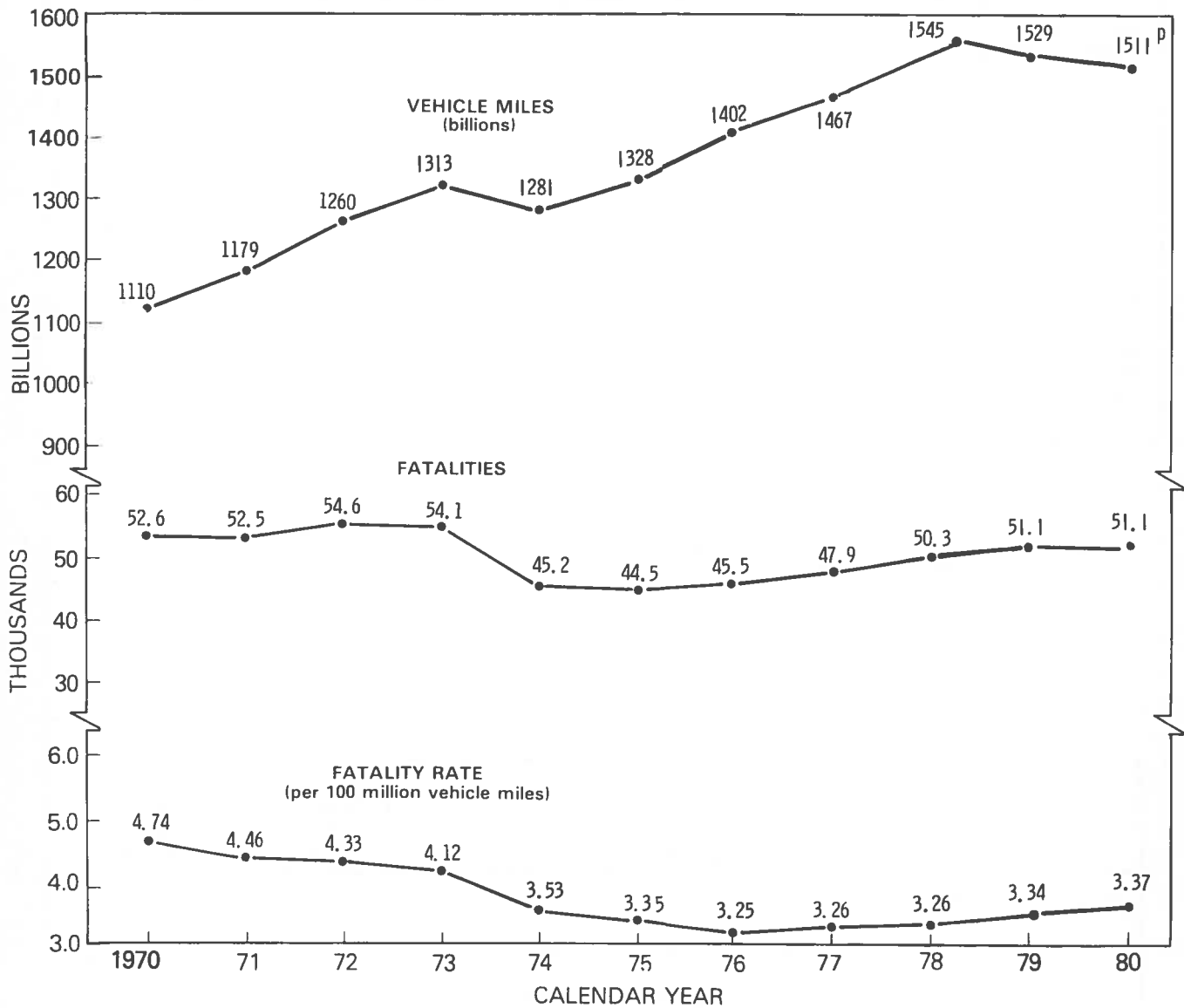
CHART 3. MOTOR VEHICLE TRAFFIC FATALITIES BY MONTH, 1973, 1979, and 1980



NOTE: FIGURES ARE BASED ON 30-DAY FATALITY DEFINITION (SEE GLOSSARY). DEATHS WITHIN 30 DAYS CONSTITUTE APPROXIMATELY 90% OF ALL DEATHS RESULTING FROM TRAFFIC ACCIDENTS.

SOURCE: 1973 DATA FROM STATE ANNUAL SUMMARIES (ADJUSTED TO 30-DAY DEFINITION).
 1979 DATA FROM NHTSA'S FATAL ACCIDENT REPORTING SYSTEM (FARS).
 1980 DATA ARE ESTIMATES FROM FARS AS OF 5/2/81.

CHART 5.
MOTOR VEHICLE TRAFFIC FATALITY RATES, 1970-1980



NOTE: FATALITIES IN THIS CHART ARE BASED ON A 30-DAY DEFINITION AND DO NOT INCLUDE PUERTO RICO.

SOURCE: 1970-1971 FATALITIES--NATIONAL CENTER FOR HEALTH STATISTICS, HEW (ADJUSTED TO 30-DAY DEFINITION).
 1972-1974 FATALITIES--STATE ANNUAL SUMMARIES (ADJUSTED TO 30-DAY DEFINITION).
 1975-1980 FATALITIES--NHTSA, FATAL ACCIDENT REPORTING SYSTEM. 1980 FIGURE IS PRELIMINARY.
 VEHICLE-MILE DATA IS FROM FHWA, OFFICE OF HIGHWAY PLANNING.

p = PRELIMINARY

TABLE 4. TRAFFIC FATALITIES BY MAJOR CATEGORY, 1975,1979,1980

CATEGORY	1975	1979	1980*	Av. Annual	
				% Change 1979-80	% Change 1975-1980
Passenger Car	25,929	27,799	27,433	-1.3	+1.1
All Trucks	5,477	7,942	7,850	-1.2	+7.5
Light Trucks	4,332	6,453	6,563	+1.7	+8.7
Heavy Trucks	717	1,087	976	-10.2	+6.4
Other Trucks	428	402	311	-22.6	-6.2
Motorcycles	3,189	4,893	5,143	+5.1	+10.0
Other Vehicle Type	745	1,038	1,197	+15.3	+9.9
Unknown Vehicle Type	585	258	290	-	-
Total Occupant Fatalities	35,925	41,930	41,913	0.0	+3.1
Pedestrian	7,516	8,096	8,071	-0.3	+1.4
Pedalcyclist	1,003	932	964	+3.4	-0.8
Other Non-Occupant	81	135	129	-4.4	+9.8
Total Non-Occupant Fatalities	8,600	9,163	9,164	0.0	+1.3

*Preliminary as of 5/2/81.

SOURCE: NHTSA, FARS.

TABLE 5. MOTOR CARRIER FATALITIES, ACCIDENTS, AND INJURIES,
BY TYPE OF CARRIER, 1974-1979

CLASSIFICATION	1974	1975	1976	1977	1978	1979
<u>MOTOR CARRIER OF PROPERTY</u>						
FATALITIES	2,429	2,232	2,520	2,878	2,998	3,072
ACCIDENTS	25,358	24,274	25,666	29,936	33,998	35,541
INJURIES	26,911	26,374	26,794	31,006	32,757	32,126
<u>MOTOR CARRIERS OF PASSENGERS</u>						
FATALITIES	77	59	62	87	68	60
ACCIDENTS	708	765	624	830	728	719
INJURIES	2,153	2,188	1,723	1,929	1,917	1,977

SOURCE: FHWA, Bureau of Motor Carrier Safety (BMCS).

TABLE 6. MAGNITUDE OF THE HIGHWAY SAFETY PROBLEM
1979

<u>POPULATION-AT-RISK</u>	
Registered Motor Vehicles	159,396,000 (1)
Licensed Drivers	143,092,000 (1)
U.S. Resident Population	220,099,000 (2)
<u>TRAFFIC ACCIDENTS REPORTED</u>	
Police-reported accidents	7,330,000
Involved vehicles	12,800,000
Involved persons	19,466,000
<u>ACCIDENT CONSEQUENCES</u>	
Injuries	4,026,000
Fatalities	51,093 (3)
Days of hospitalization	3,456,000
Lost work (man-years)	35,700

(1) Federal Highway Administration.

(2) U.S. Census Bureau, July 1, 1979 Estimate.

(3) Fatal Accident Reporting System (FARS), NHTSA.

TABLE 7. HOSPITALIZATION INCURRED BY ACCIDENT INVOLVED PERSONS
1979

<u>Injury Severity</u> (1)	<u>Persons</u> (2)	<u>Days</u>	<u>Average Days Per Injured Person</u>
Minor and Moderate	3,383,000	1,429,000	0.3
Serious	157,000	1,284,000	8.2
Severe and Critical	45,000	743,000	16.5
TOTALS	3,585,000	3,456,000	

(1) Based on most severe injury sustained.

(2) Surviving injured persons with known length of hospitalization. No data is presented in this table for the population of injured persons for whom data on injury severity and hospitalization is unknown. This unknown population is approximately 345,000 injured persons, or approximately 9 percent of the injured population.

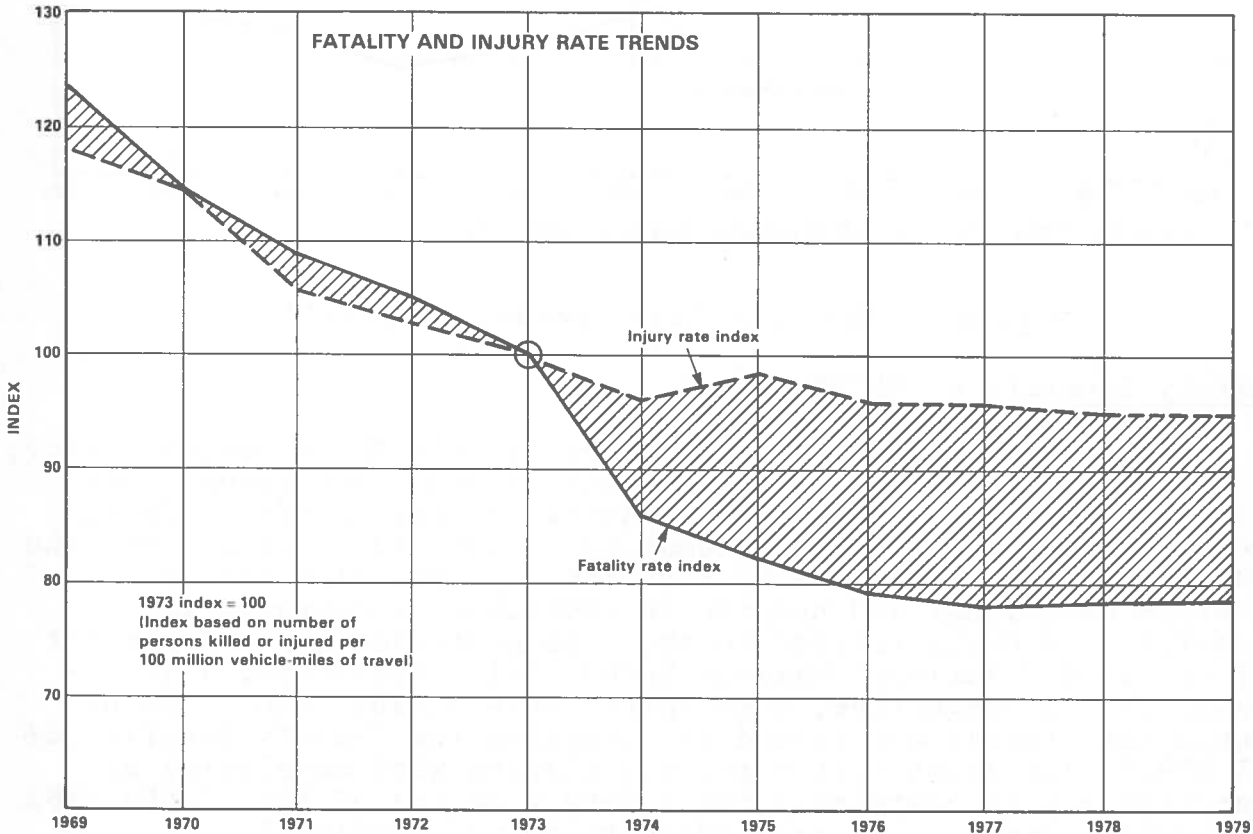
SOURCE: FHWA, Office of Highway Safety, HHS-30.

SAFETY PROGRAM HIGHLIGHTS

Fatality and Injury Rate Trends

From 1969 through 1973, fatality and injury rates, based on a 1973 index, have followed a downward pattern, dropping about 5 percent per year as shown in Figure 1. From 1973 until 1976-1977, the downward trend has continued, particularly in the fatality rate. Since 1977, the rates have remained quite constant.

Police efforts to enforce the 55 mph speed limit have been more intensive on the interstate highway system, where speeds and traffic volume tend to be highest. Figure 2 shows that the fatality rate has dropped much more sharply on the interstate highways than on the non-interstate roads since 1973. However, fatality rates have shown an increase since 1976.



SOURCE: FHWA, Office of Highway Safety, HHS-30

Figure 1. Fatality and Injury Trends, 1969-1979

The Task Force report provides a synopsis of the literature on the benefits of the 55 MPH limit. The studies which have been conducted over the past 6 years identify and illustrate the many problems encountered in the determination of a precise, accurate estimate of lives saved at the 55 MPH limit. In addition, the selection of data on which analysis is based and the weighting of information from various sources, for example, influence the findings of the reports in many cases. There is general agreement that the quality of estimates of lives saved suffers severely from a shortage of reliable data. Even the best available data is not sufficiently detailed to support accurate estimates.

Nevertheless, those who have studied the impact of the 55 MPH limit tend to reach similar conclusions. In the collective judgement of the Task Force, there have been 20,000 to 30,000 lives saved by the 55 MPH law during the 5-year period 1974 -1978.

An indeterminate share of the impact of 55 MPH speed limit is due to public attitudes which are reinforced by warnings of continuing fuel shortages and fuel price increases and this environment is constantly changing. Many other conditions which are known to have an impact upon traffic fatalities are also changing in ways that cannot be easily measured. For example, changes in compliance with speed limits and vehicle size as well as the results of safety programs for improvement of highways, vehicles, and driver performance.

For these reasons, the number of lives saved by the 55 MPH speed limit becomes much more difficult to measure as time passes. In the judgement of the Task Force, there have been 2,000 to 5,000 lives saved in 1978 by the 55 MPH NMSL.

The first section of the Task Force report provides an update of key legislative changes that have taken place concerning the 55 MPH NMSL and summary statistics through the 1978 time period. The second section presents summaries of the literature reviewed, their findings, and the range of estimates developed for conclusions drawn by the Task Force.

The 21-page Task Force Report, "The Life-Saving Benefits of the 55 MPH National Speed Limit," is now available. Single copies of this October 1980 report may be obtained by writing: General Services Division, NAD-42, 400 Seventh Street, S.W., Washington, D.C. 20590. The publication number is DOT-HS-805-559.

SOURCE: FHWA, Office of Highway Safety.

FATALITIES BY LAND USE AND ACCIDENT TYPE, 1975,1979,1980

	Pedes- trian	Pedal- cyclist	Single Vehicle	Multi-Vehicle						Total
				Angle	Head-On	Rear	Side Swipe	Unknown	Total	
1975	7,027	993	18,093	7,706	7,167	1,897	978	664	18,412	44,525
1979	7,469	892	20,881	9,156	7,721	2,454	1,517	1,003	21,851	51,093
1980*	7,384	943	21,857	8,086	8,536	2,407	828	1,036	20,893	51,077
Percent Change 1979-80	-1.1	+5.7	+4.7	-11.7	+10.6	-1.9	-45.4	-	-4.4	0.0
Average Annual Percent Change 1975-1980	+1.0	-1.0	+3.9	+1.0	+3.6	+4.9	-3.3	-	+2.6	+2.8

*Preliminary as of 5/2/81.

SOURCE: NHTSA, FARS.

National Accident Sampling System Report Available

The first highway statistics report from the National Accident Sampling System (NASS) has been published and is now available. NASS is a program sponsored by the NHTSA and supported by the FHWA. It consists of a sample of motor vehicle traffic accidents that is representative of the nation's highway accident experience. NASS is complemented by the Fatal Accident Reporting System (FARS), which collects less detailed information on all fatal traffic accidents in the U.S. The data collected in these programs are designed to support many development, implementation and evaluation programs for motor vehicle and highway safety standards and countermeasures.

The NASS design calls for the establishment of accident investigation teams in each of 75 sites located across the country. Each accident investigation team is under contract to NHTSA to collect a specified set of data on a sample of accidents within its site. Both the sites and the accidents within those sites are chosen using probability sampling techniques. This makes it possible to estimate the national experience from the sample accidents and to establish probable errors associated with these estimates.

The first test simulated crash conditions that are typically encountered when a vehicle of this size hits yielding roadside objects such as guardrails, sign posts, and parked motor vehicles. To accomplish this, an array of 55 gallon drums were banded and welded together to create a collapsing barrier. Controlled deceleration of the vehicle resulted. In the second test, the vehicle was 1/4 rolled onto the driver's side of the unit.

In both tests, detailed vehicle dynamic data were recorded in addition to gathering movie footage from several high speed cameras both inside and outside the vehicle.

All of this data will be reviewed and analyzed in detail as part of a larger scale, more systematic study of some of the broader issues surrounding the topic of truck occupant protection.

The results of this larger scale effort will become the basis of a proposed multi-year research program plan which will be reviewed, discussed and finalized at an industry/government symposium held in the spring of 1982. Based on the consensus results achieved at that symposium, the NHTSA will then be in a good position to develop the technical information necessary to help improve the safety of truck occupants who become involved in crashes.

SOURCE: NHTSA, NRD-20.

World Conference on Safety Vehicles

Exhibiting technology that could save the lives of more than 10,000 car occupants each year in U.S. automobile accidents, the Eighth International Technical Conference on Experimental Safety Vehicles convened in Wolfsburg, Germany in October 1980. Research safety cars developed for the NHTSA by private industry were presented as well as reports and vehicles from manufacturers and research groups around the world.

The United States was the sponsor of the conference with West Germany as the host country. Other countries with major delegations were the United Kingdom, France, Italy, the Netherlands, Sweden, and Japan. The meeting was designed to give auto makers, scientists and engineers the opportunity to learn about the work being done in other countries and to exchange ideas on how to improve auto safety. An additional goal of the conference was to begin work on developing international safety standards to save industry costs and provide the same level of protection worldwide.

More specifically, the program contained technical information on experimental safety vehicle development, frontal crash protection, restraint system development, seats, biomechanics, dummies, side impact protection, accident analysis, pedestrian protection, accident avoidance, handling, stability, and braking. Papers and displays were presented from many sources including Volkswagen, Porsche, Mercedes-Benz, Japan Automobile Research

Movement in Depth (CMD)
Field of View
Static Acuity - Glare

Each subject is given a vision screening prior to the administration of both pre- and post-tests. Subjects who cannot obtain a minimum visual acuity of 20/40 in each eye are deleted from the sample. Each subject is assigned to take the pre- and post-test battery at two-week intervals. Every attempt is made to test subjects at the same time of day for both test administrations. Approximately 10 subjects are tested each day and the total time requirement for each subject does not exceed one hour (one-half hour per test).

Following the data collection, which is anticipated to be complete in early 1981, measures of reliability for each of the functional and absolute scoring protocols will be computed using; (a) Pearson Product Moment, (b) Spearman Rho and (3) Kendall's Tau. In addition, statistics describing each measure's distribution will be computed. These include means, standard deviation, range, coefficient of variation, skewness and kurtosis. The computation of these measures on 200 subjects should permit selection of the best scoring procedure to use in analyzing State data to investigate the relationship between visual performance and high accident involvement.

SOURCE: NHTSA, NRD-40.

Motor Carrier Safety Inspection and Weighing Demonstration Program

The Federal Highway Administration's Bureau of Motor Carrier Safety (BMCS) requested and received an appropriation from Congress in FY 79, 80, and 81 for a 3-year demonstration program in one or more States to inspect and weigh trucks. The funding is on a 90/10 matching basis.

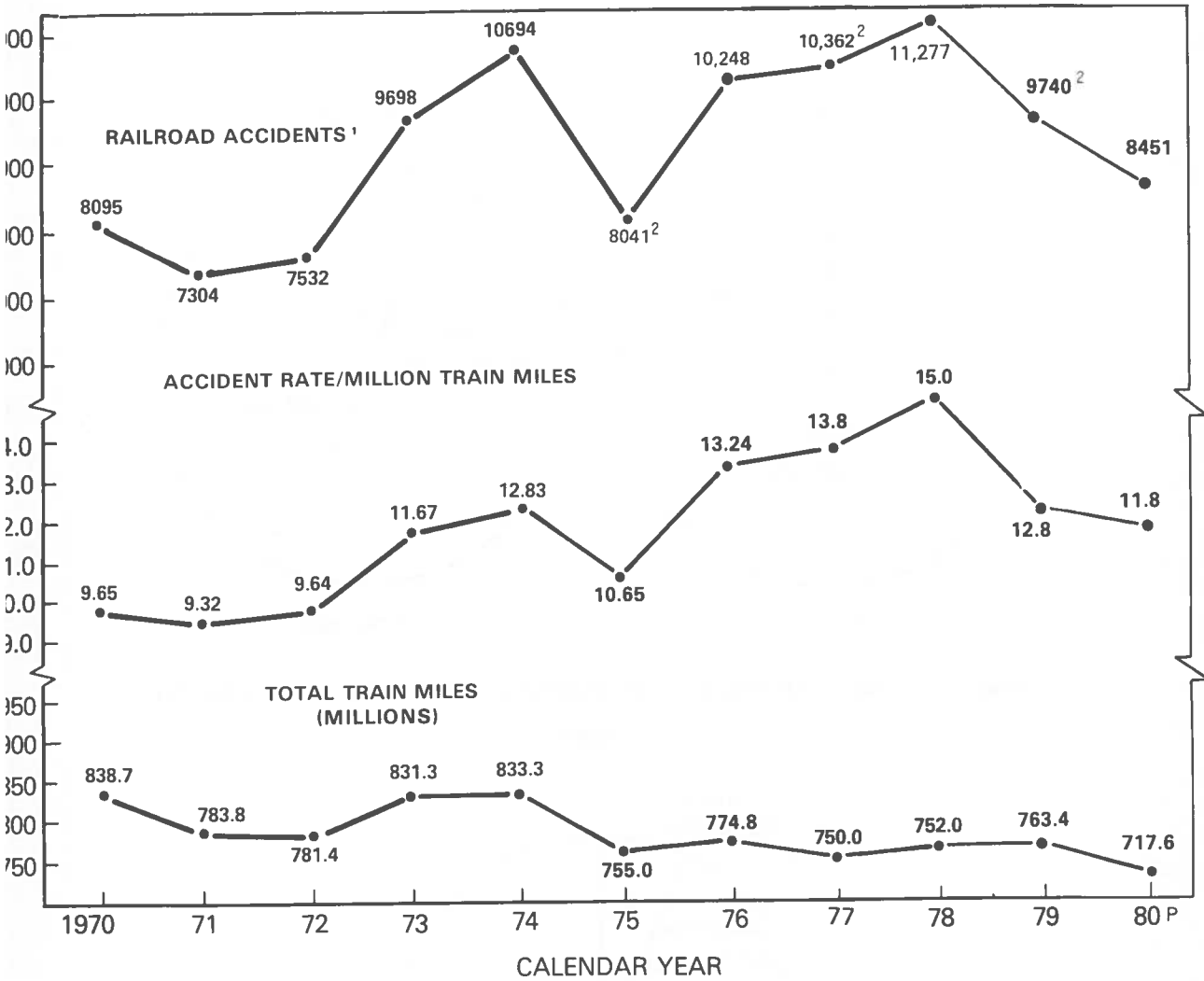
The program is a Federal financial assistance program which uses State forces and a uniform procedure to conduct driver/equipment roadside inspections and expanded truck weight measurement activities. The purpose is to demonstrate more efficient safety management by addressing the serious problem of unsafe or overweight trucks operating on public highways.

The program has been implemented and is fully operational in Alaska, Idaho, Michigan, and Utah. Because of the limited funding, however, it is not anticipated that any other States can participate.

An interim evaluation of the program is expected to be available in September 1981. Questions and requests for additional information should be directed to Program Manager, FHWA, BMCS (HMC-1.1), 400 Seventh Street, SW., Washington, D.C. 20590

SOURCE: FHWA, Bureau of Motor Carrier Safety.

CHART 8. RAILROAD ACCIDENT RATES, 1970-1980



P=PRELIMINARY

¹RAIL EQUIPMENT ACCIDENTS ONLY, INCLUDING RAIL/HIGHWAY GRADE CROSSINGS.

²REPORTING THRESHOLD FOR RR ACCIDENTS WAS RAISED FROM \$750 TO \$1750 IN 1975, TO \$2300 IN 1977, AND TO \$2900 IN 1979.

SOURCE: FRA, SYSTEM SUPPORT DIVISION, RRS-33.

TABLE 10.
RAILROAD FATALITIES AND INJURIES, BY TYPE OF PERSON, 1979-1980

CLASSIFICATION	FATALITIES		INJURIES**	
	1979	1980	1979	1980
EMPLOYEES ON DUTY	101	97	66,924	56,331
EMPLOYEES NOT ON DUTY	1	4	872	671
PASSENGERS ON TRAIN	6	4	1001	593
NON-TRESPASSER	796	739	4,483	3,849
TRESPASSER	516	566	805	728
CONTRACTOR EMPLOYEE	9	7	41	74
TOTAL RR & GRADE CROSSING	1,429	1,417	74,126	62,246
RAILROAD ONLY*	546	584	69,748	58,356
GRADE CROSSING ONLY	883	833	4,378	3,890

* Includes Rail Equipment, Train, and Non-train data.

** Includes occupational illness.

SOURCE: FRA, System Support Division, RRS-33.

SAFETY PROGRAM HIGHLIGHTS

Safety Information Reporting and Analysis

After several extensive reviews and discussions with rail transit properties, UMTA finalized its position on a set of Safety Information Reporting and Analysis System (SIRAS) reporting forms, instruction manuals, and reporting requirement thresholds for presentation at a public hearing, the next step in the SIRAS approval process.

Other tasks performed in 1980 in preparation for SIRAS implementation were the following:

- The Data Base Management System (DBMS) to be used for information reported on the new SIRAS forms was selected.
- A draft users manual was developed which describes the computer program that has been demonstrated as the mechanism for converting hard copy SIRAS train accident reports into digital data.
- A One Time Data Dictionary (OTDD) of safety related physical characteristics for all four lines of the Massachusetts Bay Transportation Authority (MBTA) was developed as a function of "location" throughout the transit system. It is serving as a prototype for developing an equivalent OTDD for all other rail transit systems.
- A report entitled "SIRAS Analysis and Methodology" was developed which contains the rationale behind the current design of SIRAS and the kinds of safety analyses intended from the data reporting anticipated.
- A benefit/cost study of the SIRAS forms and instruction manuals was made in preparation of the OMB review submission.
- A "Justification and Impact Assessment of the SIRAS" was drafted in preparation for use as part of the OMB review submission.

The "Rail Transit Safety 1979 Annual Report," using FRA reported data, was published. Analysis of existing rail transit safety data continued with the completion of three special studies of specific accident categories.

System Safety/Security, Education/Training

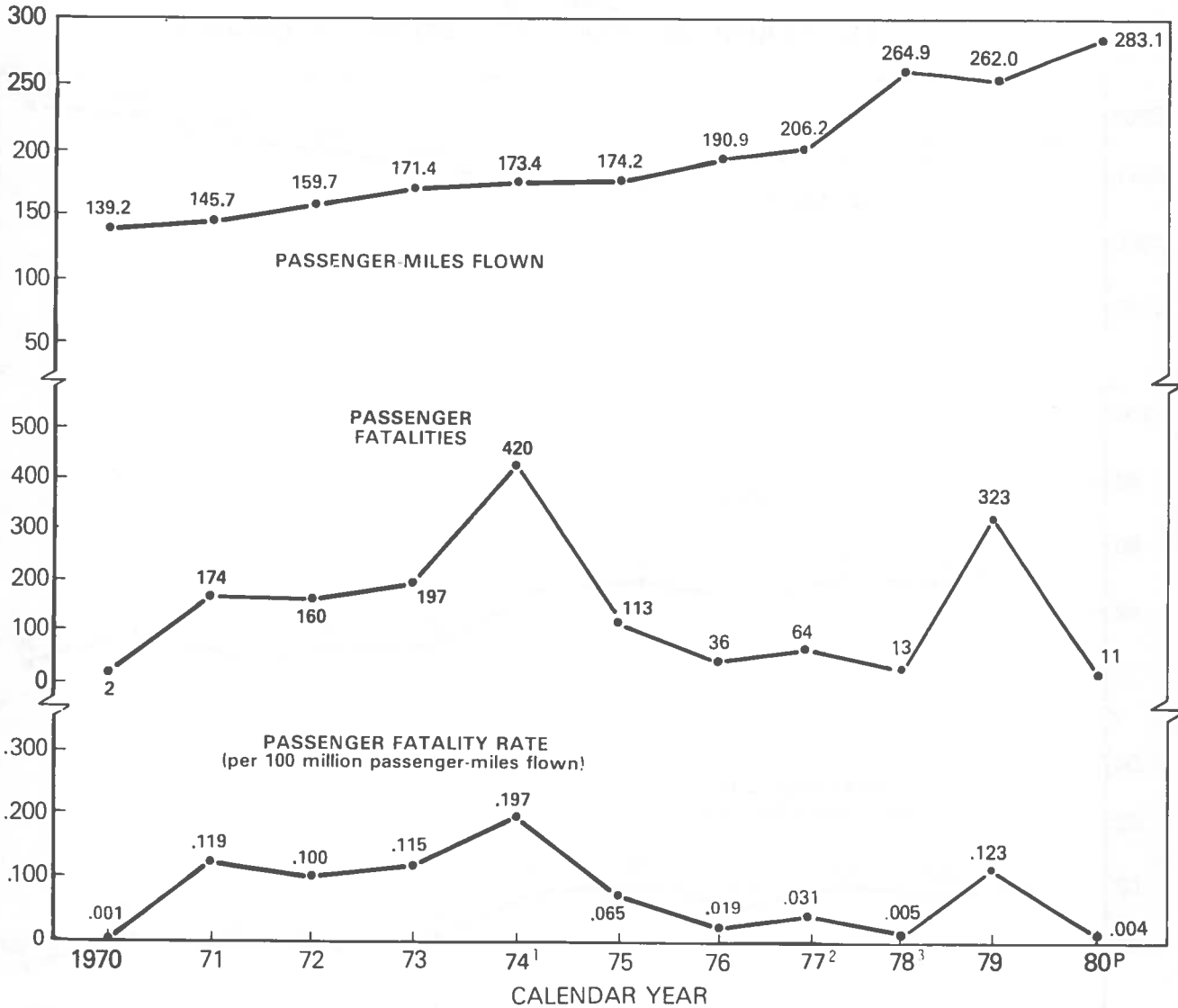
Section 107 of the National Mass Transportation Assistance Act of 1974 requires the Secretary to "investigate unsafe conditions in any facility, equipment, or manner of operation financed ..." by UMTA. During 1980, UMTA continued its Section 107 investigation

AVIATION

AIR CARRIER

- Accident totals and rates of U.S. certificated route and supplemental airlines, commercial operators of large aircraft, and deregulated all-cargo carriers were at record lows in 1980. Total accidents dropped by more than one-third, from 32 to 20. This was 17 percent lower than the previous record of 24 in 1978.
- U.S. Air Carriers had only two fatal accidents last year, compared with six in 1979. Fatalities plunged from 355 to 14, more than three times below the previous modern-day record low of 45 in 1976.
- Accident rates declined sharply, whether calculated by hours or miles flown. The total accident rate per 100,000 aircraft hours flown decreased from 0.440 to 0.259; measured by million aircraft miles flown, the same rate dropped from 0.011 to 0.007. The fatal accident rate per 100,000 aircraft hours was down from 0.083 to 0.026. The rate for every million miles declined from 0.002 to 0.001.
- The million-mile fatal accident rate of 0.001 matched the previous low registered in 1975, and was a 50 percent reduction from 1979. All the other rates were new records, and were reductions of as much as 69 percent from 1979 levels.

CHART 12.
 CERTIFICATED ROUTE AIR CARRIER FATALITY RATES, 1970-1980
 (SCHEDULED DOMESTIC AND INTERNATIONAL PASSENGER SERVICE)



¹ PASSENGER DEATHS WHICH OCCURRED IN SABOTAGE ACCIDENT OF 9/8/74 ARE INCLUDED IN PASSENGER FATALITIES, BUT EXCLUDED IN FATALITY RATE.

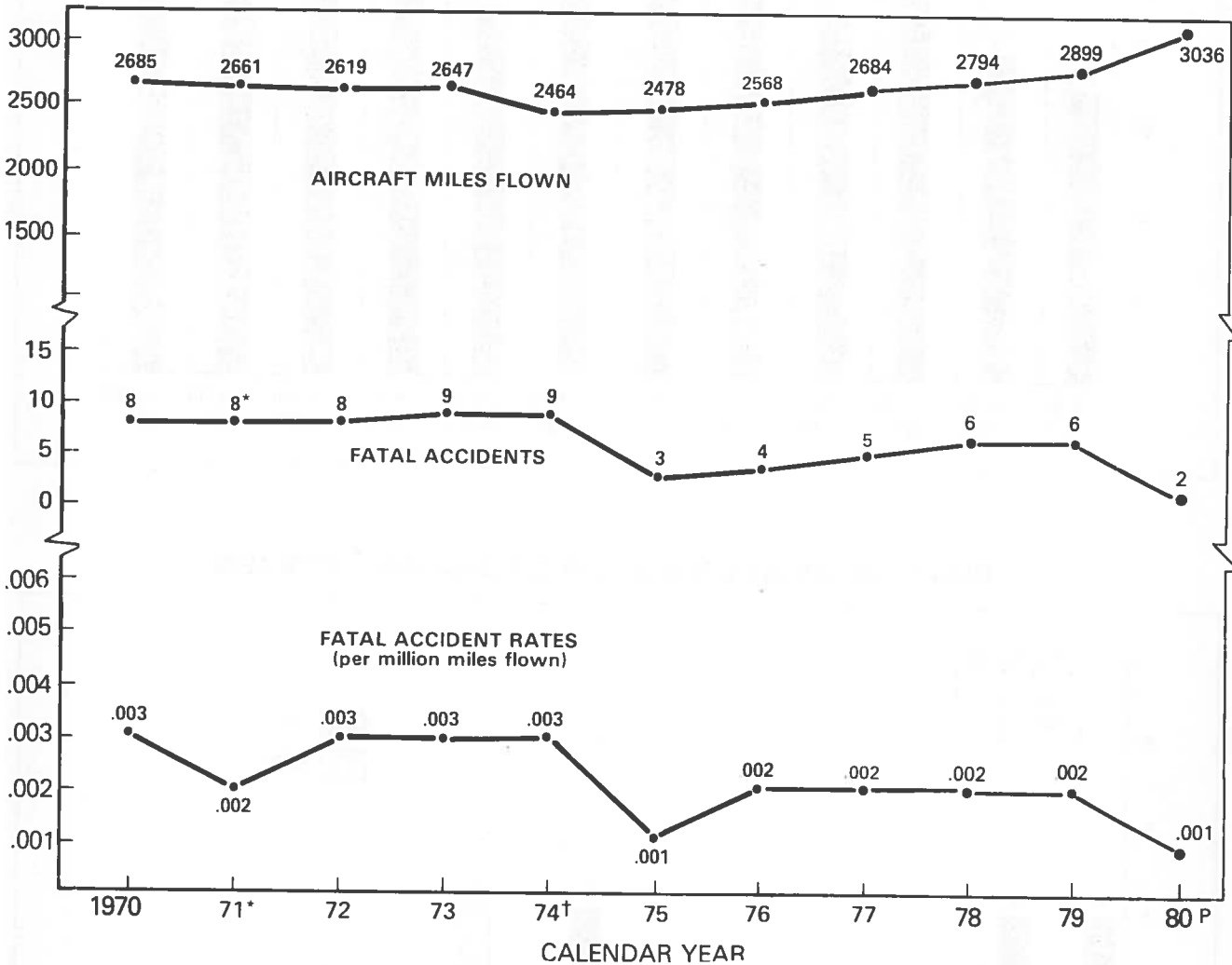
² FATALITIES FROM THE FEBRUARY 1977 TENERIFE ACCIDENT ARE NOT REFLECTED IN THIS CHART BECAUSE THEY WERE CHARGED TO CERTIFICATED ROUTE AIR CARRIERS IN NON-SCHEDULED SERVICE.

³ FATALITIES IN THE SEPTEMBER 1978 SAN DIEGO, CALIFORNIA COLLISION ARE NOT REFLECTED IN THIS CHART BECAUSE THEY WERE CHARGED TO COMMERCIAL OPERATORS OF LARGE AIRCRAFT.

P = PRELIMINARY

SOURCE: NTSB, TE-50.

CHART 14. U.S. AIR CARRIER FATAL ACCIDENT RATES, 1970-1980 (All Operations)



NOTE: DATA THROUGH 1974 INCLUDE CERTIFICATED ROUTE AND SUPPLEMENTAL AIR CARRIERS ONLY.
 COMMERCIAL OPERATORS OF LARGE AIRCRAFT INCLUDED SINCE 1975.
 DEREGULATED ALL CARGO CARRIERS INCLUDED SINCE 1979.

* MID-AIR COLLISIONS NON-FATAL TO AIR CARRIER OCCUPANTS NOT INCLUDED IN RATE COMPUTATION.

† SABOTAGE ACCIDENT NOT INCLUDED IN RATE COMPUTATION.

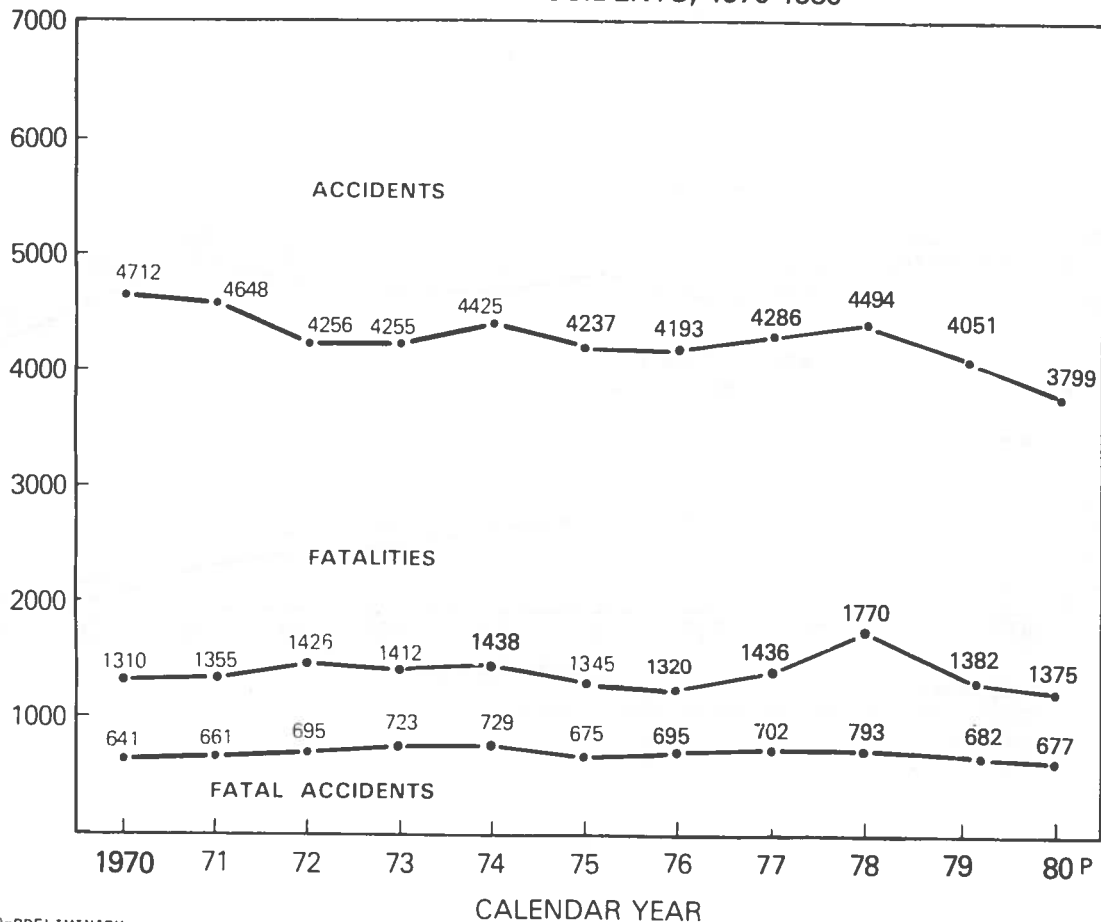
P = PRELIMINARY

SOURCE: NTSB, TE-50.

GENERAL AVIATION

- General Aviation recorded 3,799 total accidents in 1980. This was a 6 percent reduction from the 4,051 accidents in 1979, and marked the first time the total had dropped below 4,000 in more than two decades.
- General Aviation's fatal accidents totaled 677 in 1980. There were 682 in 1979. Fatalities also were relatively stable -- 1,375 in 1980 as compared with 1,382 in 1979.
- Accident exposure is believed to have decreased for the first time since 1971. General Aviation had total accident rates of 9.2 per 100,000 hours and 0.73 per million miles. Both were record lows. The comparable figures in 1979 were 9.3 and 0.74.
- Fatal accident rates increased slightly. They were 1.64 per 100,000 hours and 0.130 per million miles. The 1979 rates were 1.57 and 0.125, respectively.

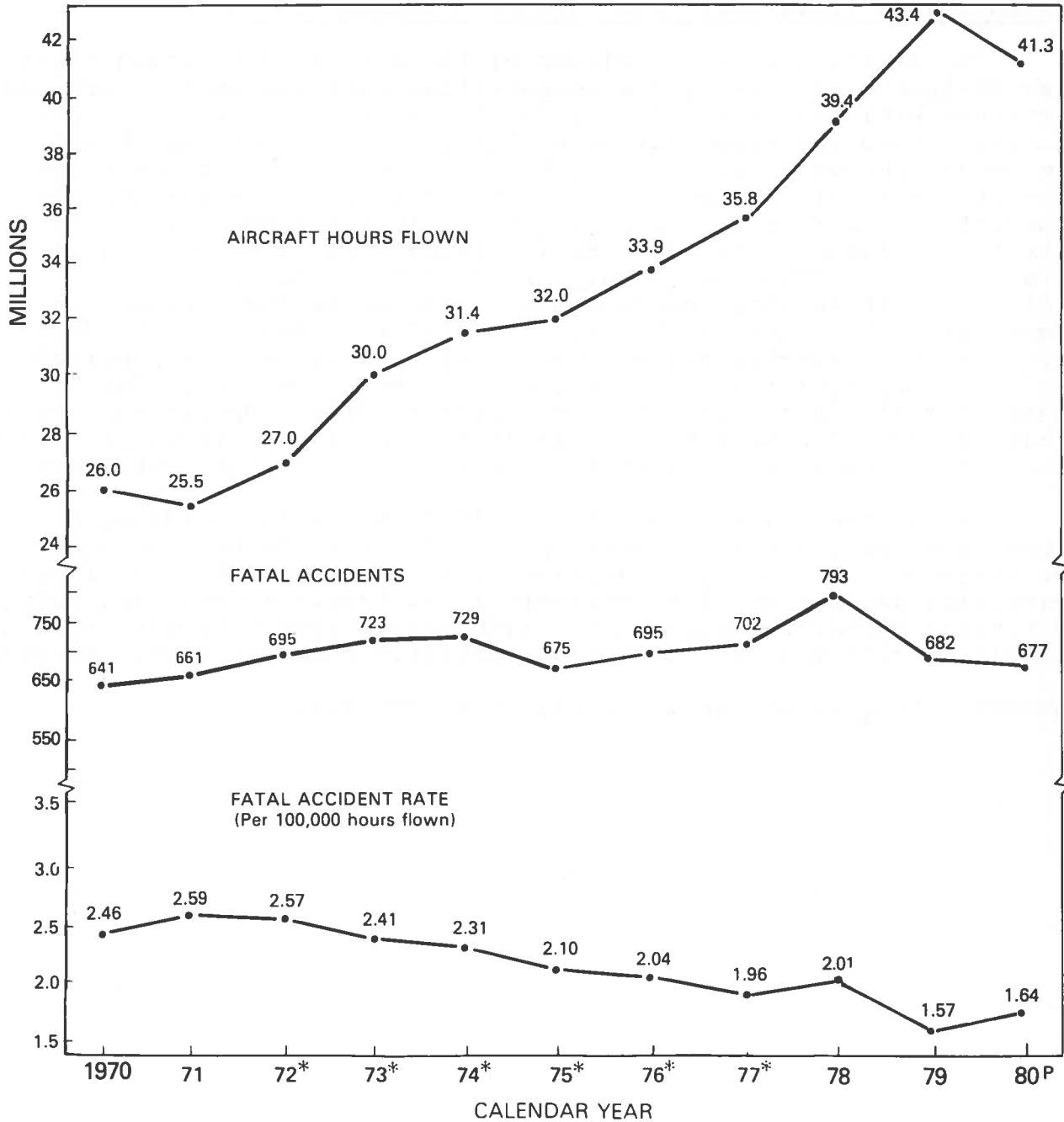
CHART 17.
GENERAL AVIATION ACCIDENTS, FATALITIES,
AND FATAL ACCIDENTS, 1970-1980



P=PRELIMINARY

SOURCE: NTSB, TE-50.

CHART 19. U.S. GENERAL AVIATION FATAL ACCIDENT RATES, 1970-1980



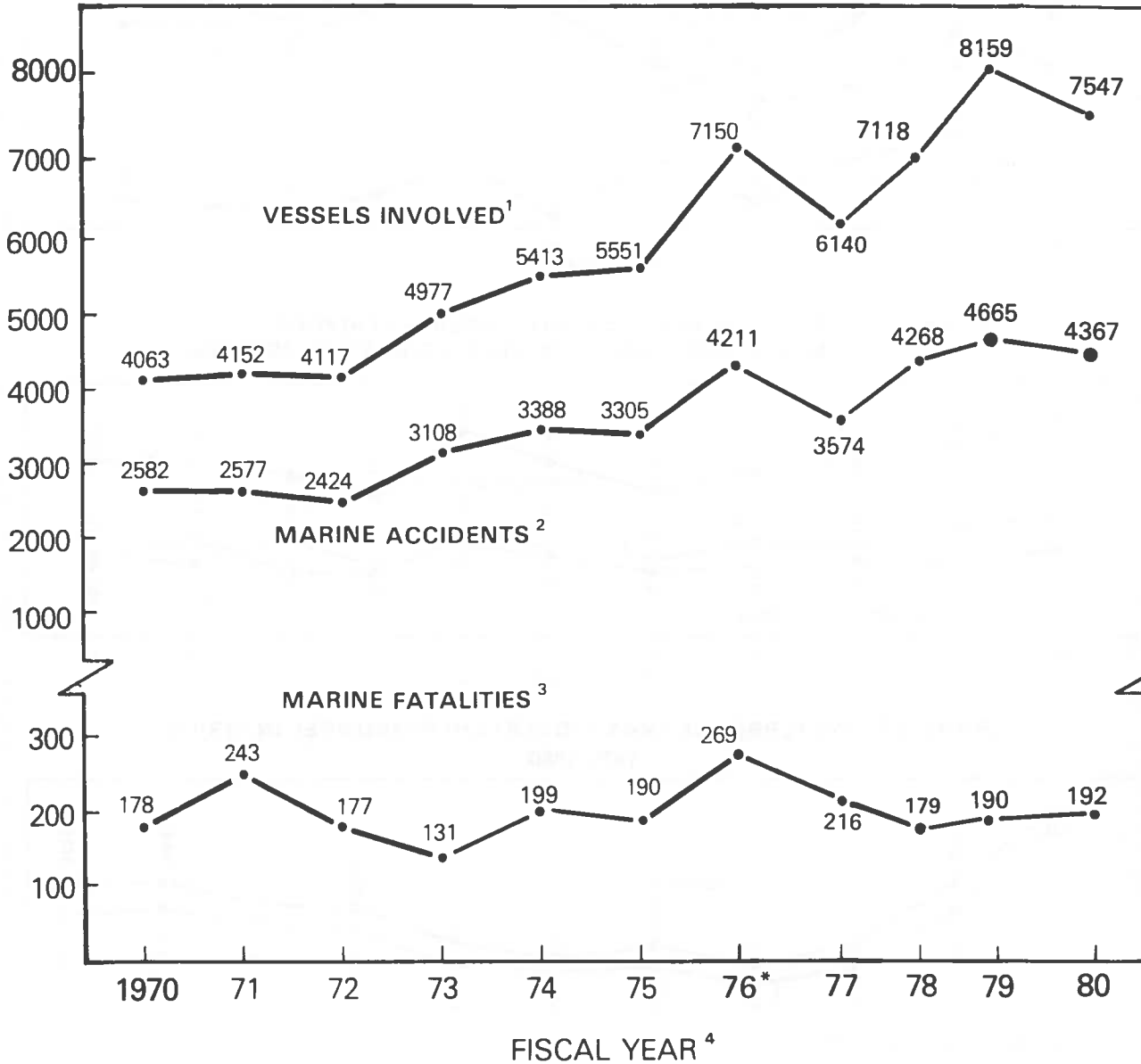
* SUICIDE/SABOTAGE ACCIDENTS NOT INCLUDED IN RATE COMPUTATION.

P=PRELIMINARY

SOURCE: NTSB, TE-50.

MARINE WATERBORNE

CHART 20. WATERBORNE ACCIDENTS AND FATALITIES, 1970-1980



NOTE: 1980 DATA ARE ESTIMATED.

* FY76 COVERS 15 MONTHS (FY76 AND A TRANSITION QUARTER).

¹ MORE THAN ONE VESSEL MAY BE INVOLVED IN A MARINE ACCIDENT.

² CASUALTIES TO COMMERCIAL VESSELS UNDER USCG JURISDICTION.

³ FATALITIES DUE TO VESSEL CASUALTIES ONLY.

⁴ DATA ON MARINE ACCIDENTS AND FATALITIES ARE KEPT ON A FISCAL-YEAR BASIS.

SOURCE: USCG, OFFICE OF MARINE SAFETY, G-MA/83.

MODAL SAFETY HAZARDS

Collision In Tampa Bay Kills 23 Coastguardmen

On January 28, 1980 at approximately 8:21 p.m., the U.S. Coast Guard Cutter *BLACKTHORN* and the U.S. Tankship *CAPRICORN* collided in Tampa Bay. As a result of the impact, the port anchor of *CAPRICORN* became imbedded in *BLACKTHORN*'s port side. The momentum of the two vessels caused the *CAPRICORN*'s port anchor chain to become taut and resulted in the capsizing of the *BLACKTHORN*. The *CAPRICORN* grounded on the north side of Cut "A" channel and the *BLACKTHORN* sank in Cut "A" channel. Twenty seven *BLACKTHORN* crew members were rescued, however, 23 crew members perished. There were no personnel casualties aboard the *CAPRICORN*.

The Commandant has concurred with the Marine Board that the proximate cause of the casualty was the failure of both vessels to keep well to the side of the channel which lay on their starboard side. The primary contributing cause was determined to be the failure of the persons in charge of both vessels to ascertain the intentions of the other through the exchange of appropriate whistle signals. It was also determined that attempts to establish a passing agreement by using only radio telephone communications failed to be an adequate substitute for exchanging proper whistle signals.

SAFETY PROGRAM HIGHLIGHTS

The Marine Safety Information System Today

The Marine Safety Information System (MSIS) is a comprehensive integrated man/machine system which will provide the information needed by all levels for the operation, administration, and strategic planning of the Coast Guard's marine safety programs. The system utilizes computer hardware, management and decision support level software, and a functionally derived data base.

Coast Guard activities with which MSIS has designed interfaces are:

- * Vessel Design Plan Review
- * Vessel Documentation
- * Vessel Construction Inspection
- * Subsequent Vessel Inspection
- * Casualty Investigations
- * Pollution Incident Investigations
- * Vessel and Facility Visits, Examinations, and Violations derived from the Port Safety Program.

On February 12, 1981, a significant milestone was reached in the development of the long range Marine Safety Information System (MSIS) when the M/V GULF FLEET NO. 45 was delivered from the

TABLE 11. NUMBER OF TANKERS EXAMINED BY AGE

<u>AGE CLASS (YRS)</u>	<u>NO. OF TANKERS</u>	<u>PERCENT</u>
0-5	52	12.9
6-10	108	26.9
11-15	106	26.4
16-20	92	22.9
Other	<u>44</u>	<u>10.9</u>
1980 Total	402	100.0

TABLE 12. NUMBER OF TANKERS EXAMINED BY FLAG

<u>FLAG</u>	<u>NO. OF TANKERS</u>	<u>PERCENT</u>
LI (Liberia)	147	36.6
GR (Greece)	58	14.4
UK (United Kingdom)	23	5.7
PN (Panama)	31	7.7
NO (Norway)	31	7.7
JA (Japan)	16	4.0
SN (Singapore)	26	6.5
IT (Italy)	8	2.0
FR (France)	4	1.0
GE (Germany)	4	1.0
Other	<u>54</u>	<u>13.4</u>
1980 Total	402	100.0

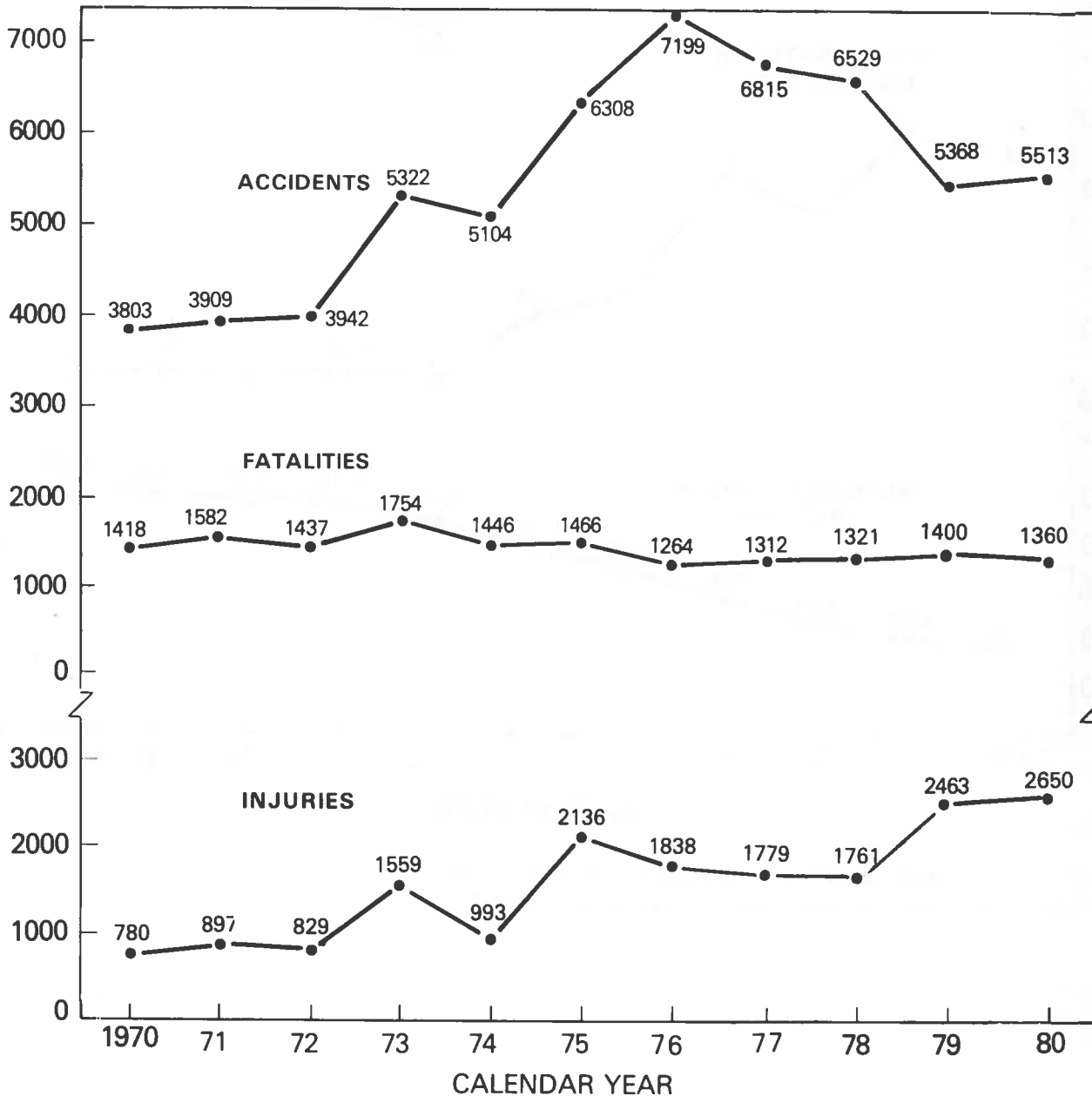
The 402 tankers examined were exposed to 522 examinations. This represents an average of 1.3 examinations per tanker. The distribution of the examinations by flag is shown in Table 13. As expected, Liberia and Greece experienced the largest portion of the examinations.

The 522 examinations performed resulted in 1287 deficiencies; this gives an average of 2.5 deficiencies per examination. The distribution of the number of deficiencies by flag is shown in Table 14. Comparisons of Tables 13 and 14 show that the deficiency

RECREATIONAL BOATING

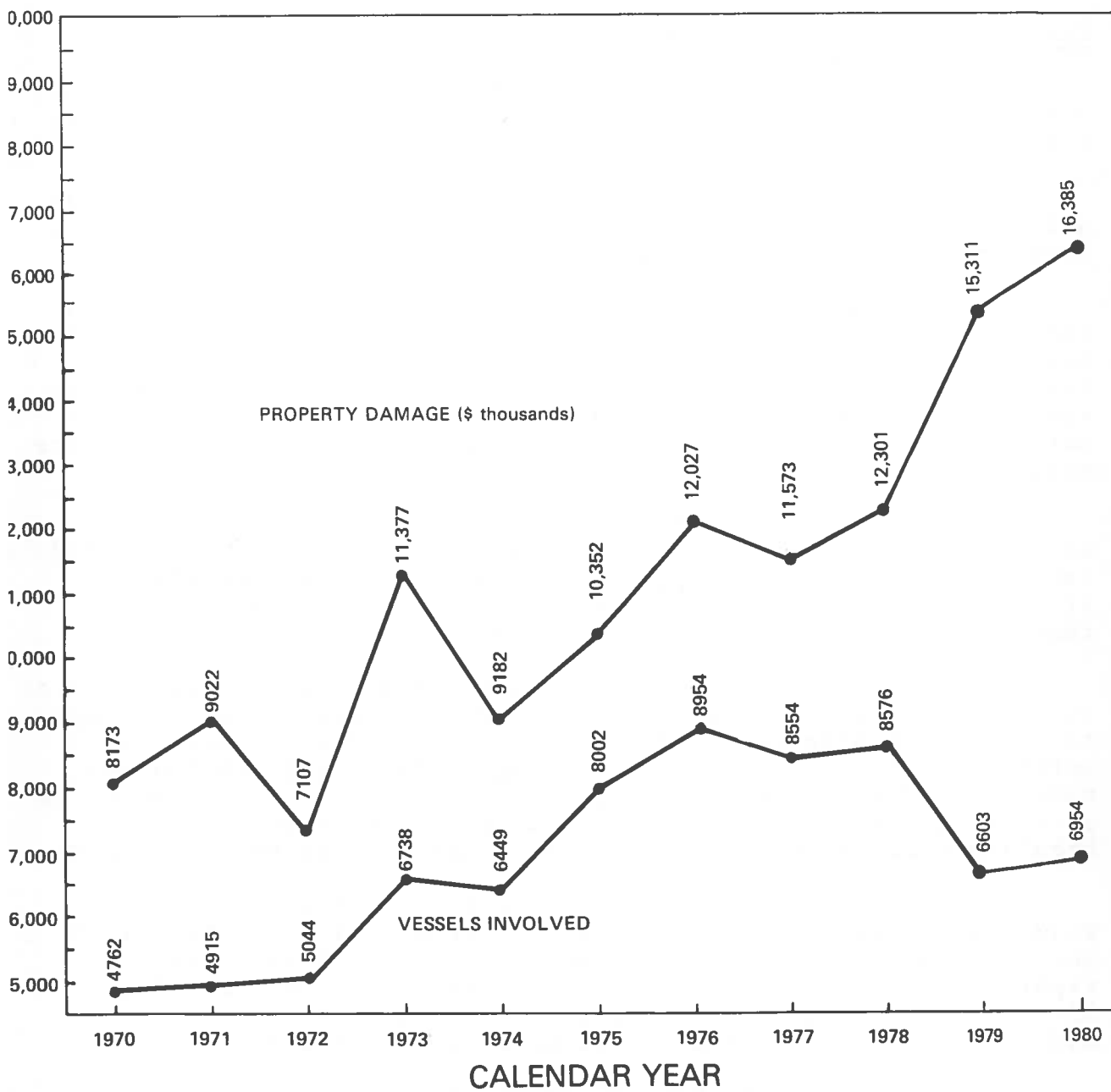
- Recreational Boating fatality rates decreased from 10.1 per 100,000 boats in 1979 to a low of 9.5 in 1980. A total of 1,360 fatalities were reported in 1980, a decrease of 2.9% from the 1,400 fatalities in 1979.
- Injuries and accidents showed an increase of 7.6% and 2.7%, respectively, in 1980.

CHART 24. RECREATIONAL BOATING FATALITIES, INJURIES, AND ACCIDENTS, 1970-1980



SOURCE: USCG, OFFICE OF PUBLIC AND CONSUMER AFFAIRS, G-BP-1.

CHART 26. PROPERTY DAMAGE AND VESSELS INVOLVED IN RECREATIONAL BOATING ACCIDENTS, 1970 — 1980



SOURCE: USCG, OFFICE OF PUBLIC AND CONSUMER AFFAIRS, G-BP-1.

The Coast Guard is actively involved in educating the boating community on the potential hazards which may happen during any boating activity, but perhaps the best protection are the preparations which are made well before any voyage.

Accidents Between Commercial and Recreational Boats

The following accident is typical of the many accidents which occur each year involving both commercial and recreational boats. The recreational boater is usually the loser.

A group of three friends set out in their 14-foot outboard boat on a fishing trip. A 57-foot tugboat which was working in the bayou was proceeding towards the same area. The two vessels approached to within 600 feet of each other before the operator of the tugboat first noticed the motorboat with its occupants paddling their craft. At about 400 feet the tugboat captain saw one of the operators in the smaller craft attempt to start their engine. Seeing that the people in the outboard boat were having trouble, the captain slowed his tugboat to about two knots and altered his course to the left. The two vessels passed each other without apparent difficulty. However the resulting wake of the passing tug was too large for the small motorboat, forcing its bow under the surface of the water and causing the boat to capsize dumping the passengers into the water. The people on board were not wearing personal flotation devices (PFDs). Several witnesses to the accident standing along the shore swam out to provide some help. Two of the occupants were able to make it to shore without serious injury. The third however died as a result of asphyxiation and cardiac arrest.

It should be recognized by all boaters that use heavily traveled waterways that extra care and caution must be exercised and a PFD must always be worn in an open boat.

SAFETY PROGRAM HIGHLIGHTS

New Inland Waterways Rules

Navigational rules in use on U.S. waters were consolidated by the Inland Navigation Rules Act of 1980. The new rules required by the Act go into effect December 24, 1981.

The new law updates and consolidates the old Inland, Great Lakes, Western River and regulatory pilot rules that currently govern navigation on the nation's inland waterways. Parts of the Motorboat Act of 1940 will also be superseded by the new law.

In addition to the new pamphlet, the Coast Guard is also preparing a 10-minute slide program explaining the requirements of the new regulation. The program covers the same material as the pamphlet and will be available in early summer 1981. The Coast Guard believes that this new regulation combined with related education will help decrease the number of injuries and fatalities which occur on the nation's waterways each year.

Close Encounters of a Dangerous Kind

Accidents involving commercial vessels and recreational boats, is the subject of a new slide-sound presentation produced by the Coast Guard. The 11 minute show, "Close Encounters of a Dangerous Kind", focuses on the often unrealized dangers to recreational boats and boaters when they operate close to larger vessels in rivers and harbors.

The program uses over 100 slides and the voices of tugboat operators, ships' captains and pilots. "Close Encounters" illustrates the problems and concerns of shipping professionals caused by recreational boaters operating close to commercial traffic. The show explains vividly what a merchant vessel can, and more importantly, can not do to avoid collisions with smaller recreational boats.

Green Buoy Tests Continue

The Coast Guard is collecting data on whether green-colored buoys are easier for mariners to see than black buoys. The service placed 24 green buoys throughout the United States in the spring of 1980. The Coast Guard has encouraged mariners to submit their comments concerning these buoys to the Aids to Navigation Branch of the nearest Coast Guard District Office.

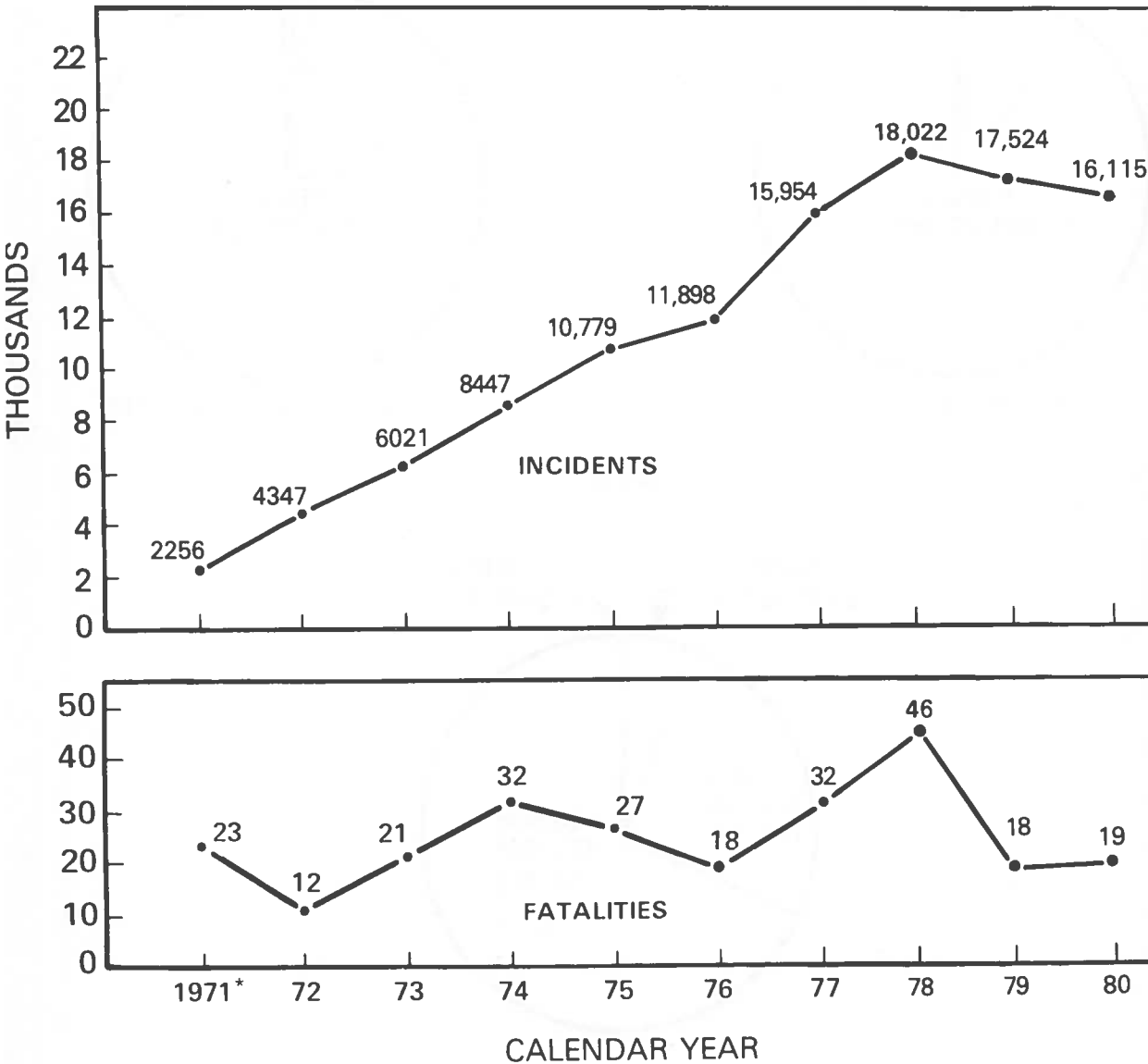
Test sites were selected to cover as many types of water conditions, visual backgrounds, and classes of users as possible.

The test is expected to continue through the spring of 1981 at which time the Coast Guard will evaluate the data received in an effort to determine if green is a more effective color than black as a daytime signal color for buoys.

HAZARDOUS MATERIALS

- The number of Hazardous Materials incidents decreased from 17,524 in 1979 to 16,115 in 1980. This is the second straight year of decline from the record high of 18,022 in 1978.
- Fatalities increased slightly, going from 18 in 1979 to 19 in 1980. Injuries, however, declined by over 34 percent with 619 reported for 1980 compared to 941 for 1979. Property damage also decreased from \$14,773,000 in 1979 to \$10,707,000 in 1980, the lowest level since 1976.

CHART 29.
HAZARDOUS MATERIALS
INCIDENTS AND FATALITIES, 1971-1980★



★ HAZARDOUS MATERIALS SAFETY PROGRAM WAS INITIATED IN 1971.
SOURCE: RSPA, DPB-10.

MODAL SAFETY HAZARDS

A spill of more than 11,500 gallons of a corrosive chemical (phosphorous trichloride) occurred in the Boston & Maine (B&M) switching yard in Somerville, Massachusetts at 9 a.m. on April 3, 1981. A B&M switcher locomotive collided at 4 mph with a standing draft of cars, puncturing a tank car loaded with the chemical. There were no fatalities, but more than 400 persons were treated at local hospitals. The mass evacuation of 23,000 persons lasted until early the next morning.

Firefighters were among those who suffered skin burns and respiratory problems from the liquid chemical and its acid vapors. The National Transportation Safety Board noted in its investigation that the firefighters' regular "turnout gear" was not designed to protect them from corrosive materials, and they were not aware of the need for special protection.

The NTSB also found that:

- Somerville firefighters were following U.S. Department of Transportation (DOT) and Bureau of Explosives emergency guidelines for spills of the liquid chemical involved when they first directed fire hoses on the liquid to try to keep it out of the city's storm sewer system. Natural reaction of the chemical to the heavy streams of water produced billowing new clouds of acid vapor.
- Representatives of the shipper (Monsanto Chemical) later suggested that firefighters flood the pit, dug to contain the chemical, with water. Because water earlier had worsened the problem, the fire chief declined to follow the advice.
- Five hours after the accident, representatives of the U.S. Environmental Protection Agency urged firefighters to throw up a curtain of water downwind of the pit to reduce the acid cloud that was rising and drifting away. The fire department strongly opposed the idea, but complied reluctantly. A wind shift pushed the water spray directly onto the pit, causing new clouds of acid vapor and requiring further evacuation.

The Safety Board said the Somerville accident was the latest in a series of hazardous materials spills with which local safety officials have had to try to cope by "trial and error." Such an accident "highlights the importance of analyzing risks and formulating appropriate safety strategies before accidents happen," the Board said. Hazardous materials which could disrupt a community should not be transported unless shippers "have adequately analyzed the probable course of potential accident spills and resultant control problems, and are prepared to provide expert technical advice" to local officials to control the spills.

The NTSB, however, commended the DOT for "significant improvement" in its recently released "Emergency Response Guidebook," and said this new guidance should reduce injuries such as the Somerville firemen suffered.

HM Regulation Information

Information about Federal regulations on truck and truck driver safety and the highway transportation of hazardous materials now can be obtained by means of a toll-free telephone call.

By dialing 800-424-9158, truck drivers, operators of trucking companies, and the general public can obtain information about the Federal Motor Carrier Safety and Hazardous Materials Regulations. The regulations are applicable only to interstate commerce. In the Washington, D.C. area, the telephone number is 426-1724. The service is available Mondays through Fridays from 7:30 a.m. until 4:00 p.m. eastern daylight saving time.

New Emergency Guidebook

The Materials Transportation Bureau has developed a new guidebook to help emergency response personnel move quickly to protect lives and property in case of an accident involving transportation of hazardous materials. The guidebook was developed for use by all personnel involved in the handling and the transportation of hazardous materials. The guidebook is designed for initial actions to be taken by first responders and the general public when they are called to handle incidents involving hazardous materials.

The International Association of Fire Chiefs will make initial distribution to emergency service organizations prior to distribution to other entities.

49 CFR Parts 450, 451, 452, and 453 -- Safety Approval of Cargo Containers

The U.S. Coast Guard has amended its Safety Approval of Cargo Container regulations to incorporate public comments and international discussion. Among several other changes, this final rule makes the following amendments to the existing regulations: (1) It allows persons or organizations to whom an approval authority is delegated in any contracting State to obtain a delegation as an approval authority for the United States on a reciprocal basis. (2) It expands and standardizes the information required to be submitted by an owner or manufacturer to an approved authority. (3) It adds alternative approval of new containers by design type. Effective Date: July 2, 1980. (45 FR 37212, June 2, 1980.)

46 CFR Part 160 -- Distress Signals; Heptane Ignition Test for Hand Red Flares

This action amends the Coast Guard approval specification for hand red flare distress signals. The amendments eliminate the reference to merchant vessels in the subpart heading for this specification and add the requirement for a heptane ignition test that is intended to measure the tendency of the flares to start a fire on a boat. This will allow the hand red flare to be accepted for use on recreational boats. This rulemaking is issued in conjunction with a rulemaking that changes the equipment requirements for boats (CGD 80-021a)) which appears elsewhere in this issue of the Federal Register. Effective Date: October 1, 1980. (45 FR 45278, July 3, 1980.)

33 CFR Part 175 -- Equipment Requirements for Boat Operators; Acceptance of Hand Red Flares as Visual Distress Signals

This rule revises the Coast Guard requirements for boat operator to carry visual distress signals. The revision would add Coast Guard approved hand red flares to the list of devices that are acceptable for use on recreational boats. This will provide the boat operator with greater flexibility satisfying the carriage requirement for visual distress signals and allow this requirement to be met with an inexpensive, yet effective, device. The rule is issued in conjunction with an associated rule (CGD 80-021) changing the approval specification requirements for hand red flare distress signals which appears elsewhere in this issue of the Federal Register. Effective Date: January 1, 1981. (45 FR 45269, July 3, 1980.)

46 CFR Parts 4, 26, 35, 78, 97, 109, 167, 185, and 196 -- Casualty Reporting Requirements

This rule amends the casualty reporting requirements for vessels, and includes the following major changes: The physical damage monetary criterion has been increased to \$25,000; some intentional groundings need not be reported; losses of main propulsion of primary steering systems or components are a separate reporting criterion; and occurrences which materially adversely affect a vessel's fitness for service or route must be reported. These amendments are necessary in order to provide more comprehensive and useful reporting criteria as the initial step in a marine investigation. Effective Date: January 1, 1981. (45 FR 77439, November 24, 1980.)

33 CFR Part 183 -- Electrical and Fuel Systems Standards for Recreational Boats

This rule amends the Coast Guard regulations on electrical and fuel systems standards for recreational boats by adopting more recent versions of industry standards incorporated by reference in the regulations. IEEE Standard 45 lists insulated electrical cables which meet certain water absorption and flame retardancy requirements. Adoption of the more recent version of the standard allows changes made in cable types and designations to be reflected in the Coast Guard's requirements for electrical systems on recreational boats. UL Standard 1114 prescribes performance requirements for USCG Type A fuel hose. Adoption of the more recent version of the standard allows changes made in performance testing of this hose to be reflected in the Coast Guard's requirements for fuel systems on recreational boats. Effective Date: January 28, 1981. (45 FR 85450, December 29, 1980.)

14 CFR Part 39 -- McDonnell Douglas DC-10 Airplanes; Airworthiness Directives

This amendment adopts a new Airworthiness Directive (AD) that requires modification of the ramp assembly on certain Air Cruisers Company evacuation systems installed on McDonnell Douglas Model DC-10 Series Airplanes. The AD is prompted by reports of three instances of overwing slide/raft improper deployment which could result in unavailability of that element of the evacuation system. Effective date: August 30, 1980. (45 FR 43691, June 30, 1980.)

14 CFR Part 39 -- Boeing 707/720 Airplanes; Airworthiness Directives

This Amendment adopts a new Airworthiness Directive (AD) which requires repetitive inspections of the 707/720 series airplanes nacelle strut diagonal brace in accordance with Boeing Service Bulletin A3364 Revision 1. Cracks have been detected in the diagonal brace end fittings which, if allowed to grow, eventually would reduce the structural capability of the brace which could result in the separation of the engine from the airplane. Effective date: July 9, 1980. (45 FR 43695, June 30, 1980.)

14 CFR Part 39 -- Boeing 727-200 Airplanes; Airworthiness Directives

This amendment adopts an Airworthiness Directive (AD) that requires operators of 727-200 series airplanes to replace and reroute certain wire bundles located in close proximity to the air flow multiplier hot air duct located in the air conditioning bay. This change is necessary because wire insulation failures due to high ambient temperatures have occurred, resulting in cabin depressurization (one occurrence), fuel pump stoppage (six occurrences), and an engine flame out (one occurrence). Effective date: July 10, 1980. (45 FR 43696, June 30, 1980.)

14 CFR Part 39 -- all Boeing 720 Airplanes; Airworthiness Directives

This Airworthiness Directive (AD) requires a one-time high frequency eddy current inspection of the 720 fleet to detect cracks in the lower wing surface skins and stringers. Five operators have reported cracks in the lower wing surface skins and/or stringers on five different airplanes. The cracks were found between wing stations (WS) 265 and 470 in the vicinity of stringers 5 and 7. If the skin is cracked in combination with a complete severance of a stringer, a situation may exist in which limit load cannot be carried. This could result in the loss of the airplane. Effective date: August 3, 1980. (45 FR 49910, July 28, 1980.)

14 CFR Part 39 -- McDonnell Douglas DC-10 Airplanes; Airworthiness Directives

This amendment adopts a new Airworthiness Directive (AD) which requires replacement of cable guard pins on McDonnell Douglas DC-10 series airplanes fuselage numbers 1 thru 243. The AD is prompted by a report that during ground system tests a wing engine emergency fire shutoff handle was restricted in movement and could not be moved completely to the agent discharge position, preventing the use of fire extinguishing agent which could result in an uncontrollable engine fire and possible loss of the airplane. Effective date: October 13, 1980. (45 FR 65997, October 6, 1980.)

14 CFR Part 39 -- Boeing 707/720/727/737 Airplanes; Airworthiness Directives

This amendment adopts a new Airworthiness Directive (AD) to require the addition of leading edge device position logic that will provide aural warning when the leading edge devices are not deployed for takeoff on Boeing Model 707/720/727/737 series airplanes.

This AD is necessary because service experience indicates that during the routine use of the preflight checklist, the flight crew may overlook the unlighted leading edge position lights which indicates that the leading edge devices (slats and flaps) are not extended. A hazardous condition exists when a takeoff is attempted with the leading edge devices retracted because this configuration would greatly increase the likelihood of an airplane stall. Effective date: November 24, 1980. (45 FR 70230, October 23, 1980.)

14 CFR Part 39 -- McDonnell Douglas DC-8 Airplanes; Airworthiness Directives

This amendment adopts a new airworthiness directive (AD) which requires inspection and repair if necessary of wing skins on certain McDonnell Douglas DC-8 airplanes. The AD is needed to prevent crack growth which could result in structural failure of the wing lower skin and rear spar lower cap. Effective date; October 23, 1980. (45 FR 70229, October 23, 1980.)

14 CFR Part 39 -- Lockheed L-1011 Airplanes; Airworthiness Directives

This amendment adopts a new Airworthiness Directive (AD) which requires modification of certain fuel shut-off valves on Lockheed Model L-1011 series airplanes. The AD is needed to prevent fuel leakage and associated fire hazard. Effective date: January 2, 1981. (45 FR 79011, November 28, 1980.)

FEDERAL RAILROAD ADMINISTRATION

49 CFR Parts 229 and 230 -- Railroad Locomotive Safety Standards and Inspection

This document revises Part 230 (49 CFR Part 230) and establishes a new Part 229 (49 CFR Part 229). The parts contain FRA's rules applicable to railroad locomotive inspection. The revised rules update, consolidate, and clarify the old rule and eliminate certain rules no longer considered necessary for safety. This action is taken by FRA to improve its safety regulatory program. Effective date: May 1, 1980. (45 FR 21092, March 31, 1980.)

49 CFR Part 215 -- Railroad Freight Car Safety Standards

This document amends the final rule published on December 31, 1979 (44 FR 77328), which revised the Railroad Freight Car Safety Standards (49 CFR Part 215).

The amendments relate to predeparture inspections; defective cars received in interchange; defective roller bearing; stenciling of maintenance-of-way equipment; and door safety hangers. This action is taken by FRA in response to two petitions for reconsideration of the final rule. Effective date: June 1, 1980. (45 FR 26708, April 21, 1980.)

49 CFR Part 223 -- Safety Glazing Standards - Locomotive, Passenger Cars and Cabooses

Part 223 establishes minimum safety requirements for glazing materials in the windows of locomotives, passenger cars and cabooses. The purpose of this notice is to amend Part 223 to resolve problems with interpretations of the existing language of two sections and to add a new appendix which sets forth the schedule of civil penalties that are applicable to any violation of this Part. Effective date: July 30, 1980. (45 FR 49269, July 24, 1980.)

49 CFR Part 225 -- Railroad Accidents/Incidents; Biennial Adjustment of Reporting Threshold

The purpose of this rule is to require railroads to report to FRA only those accidents/incidents that result in damages of more than \$3,700. The effect of the rule is to increase the reporting threshold from \$2,900 to \$3,700 for railroad accidents/incidents that occur during the calendar years 1981 and 1982. This action is needed to ensure that the reporting requirements reflect increases in the cost of labor and materials since the reporting threshold was last computed in 1978. Effective date: January 1, 1981. (45 FR 72664, November 3, 1980.)

some of the test requirements for final-stage manufacturers. Many of these small manufacturers do not have the sophisticated test devices of major vehicle manufacturers. The agency concludes that the weight at which vehicles are tested can be lessened while providing an adequate level of safety for vehicles such as light trucks and while ensuring that compliance with these standards does not increase their aggressivity with respect to smaller vehicles. Effective date: April 3, 1980. (45 FR 22044, April 3, 1980.)

49 CFR Part 571 -- Federal Motor Vehicle Safety Standards; Child Restraint Systems; Seat Belt Assemblies

This notice responds to five petitions for reconsideration and petitions for rulemaking concerning Standard No. 213, *Child Restraint Systems*. In response to the petitions, the agency is changing the labeling requirements to permit the use of alternative language, modifying the minimum radius of curvature requirement for restraint system surfaces and extending the effective date of the standard from June 1, 1980, to January 1, 1981. In addition, several typographical errors are corrected in Standard No. 209, *Seat Belt Assemblies*. Effective date: May 1, 1980. (45 FR 29045, May 1, 1980.)

49 CFR Part 571 -- Heavy Duty Vehicle Brake Systems

This notice amends Standard No. 121, Air Brake Systems, to require trucks, buses and trailers equipped with air brakes to have service brake systems acting on all wheels. This amendment is being made in response to reports from several manufacturers that some trucks and trailers were soon to be constructed without front axle brakes. The agency concludes that such a change would result in a serious downgrading of existing brake systems and accordingly issues this amendment to prevent this from happening. Effective date: July 24, 1980. (45 FR 38380, June 9, 1980.)

49 CFR Part 571 -- Lamps, Reflective Devices, and Associated Equipment

This notice amends Motor Vehicle Safety Standard No. 108 to allow an optional method of measuring side marker lamp light output for all vehicles less than 30 feet in overall length, regardless of width. This option currently applies to all vehicles less than 80 inches in overall width, regardless of length. This amendment is in response to a petition for rulemaking submitted by Chrysler Corp. The effect of the amendment is to remove a restriction on vehicles which are normally built in versions less than 80 inches in overall width but which have derivatives that exceed this dimension. Effective date: July 3, 1980. (45 FR 45287, July 3, 1980.)

In response to comments, MTB has made certain changes to that final rule. The most significant changes: (1) permit the use of any force on a specimen lateral joint that initiates failure; (2) permit tensile testing at ambient temperature and humidity; (3) more clearly define the criteria for test specimen acceptance or failure; (4) permit joining of pipe and fittings manufactured before July 1, 1980, in accordance with existing procedures; (5) permit alternative test methods for qualifying persons to make heat fusion, solvent cement, or adhesive joints; and (6) redefine and limit the conditions under which a person must requalify to make plastic pipe joints. Effective date: July 1, 1980. (45 FR 9931, February 14, 1980.)

49 CFR Parts 107, 172, 173, and 175 -- Shipments of Hazardous Materials by Air; Miscellaneous Amendments

The Materials Transportation Bureau is amending the regulations pertaining to the shipment of hazardous materials by aircraft. The amendments involve package orientation marking requirements, package inspection requirements, and exceptions from certain regulatory requirements for such items as inflatable evacuation slides, transport incubators, aircraft tires and dry ice. Also included are requirements for informing air passengers of hazardous materials restrictions and certain minor and editorial changes to the regulations.

These amendments have the effect of eliminating two exemptions and responding to fourteen petitions for rulemaking. Effective date: September 1, 1980. (45 FR 13087, February 28, 1980.)

49 CFR Parts 173 and 175 -- Requirements for Transportation of Radioactive Materials

The purpose of this final rule is to amend the Hazardous Materials Regulations pertaining to the transportation of radioactive materials aboard aircraft by: (1) reducing the maximum and average radiation level in a passenger compartment of a passenger-carrying aircraft by increasing the separation distance required between the passenger compartment and any package(s) bearing a Radioactive Yellow-II or Radioactive Yellow-III label, and by reducing the maximum allowable transport index (T.I.) from 10.0 to 3.0 for any package of radioactive materials carried in any single compartment on a passenger-carrying aircraft; (2) providing for a system of predesignated areas ("spacing out") for stowage of radioactive materials packages aboard passenger-carrying aircraft based on the size and configuration of the particular aircraft involved; (3) increasing the allowable amount of radioactive materials aboard cargo-only aircraft when carried in accordance with specified loading requirements; and (4) establishing specific marking, labeling and T.I. limitations for radioactive materials packages combined in overpacks. The amendments are based primarily on a study conducted by the U.S. Atomic Energy Commission which recommended a reduction in the level of radiation exposure to passengers aboard aircraft. Effective date: October 1, 1980. (45 FR 20097, March 27, 1980.)

49 CFR Part 193 -- Liquefied Natural Gas Facilities; Reconsideration of Safety Standards for Siting, Design, and Construction

Final rules were issued on the siting, design, and construction of Liquefied Natural Gas (LNG) facilities on January 30, 1980. In response to petitions for reconsideration, MTB is amending several sections of the final rules. These amendments are: (1) To clarify that any subsequent changes in "existing LNG facilities," as defined by the Pipeline Safety Act of 1979, including expansion of capacity, if made pursuant to an application for approval filed before March 1, 1978, would not be subject to Part 193 siting requirements; (2) to provide that the Director will respond within 90 days to a petition for finding or approval unless the petitioner is otherwise notified; (3) to exclude "pipeline facilities" of the operator from thermal radiation protection requirements; (4) to clarify the vaporization rate for a design spill from a transfer line that penetrates an LNG storage tank below its liquid level; (5) to require the Director's approval for siting LNG storage tanks in certain areas of high seismic activity; (6) to modify the criteria for identification of a high seismic area, where the Director's approval for siting an LNG storage tank is required; (7) to make only impounding systems for LNG storage tanks subject to requirements relating to penetration by wind borne missiles; (8) to establish a 200 mph wind speed as an upper limit in designing for wind forces; (9) to clarify that any ultraviolet decay of insulation must not be detrimental to the insulation; (10) to clarify that only valves for use in controllable emergencies must have powered local and remote operating capabilities; (11) to clarify the dimensions required for dikes; and (12) to provide that only LNG storage tanks must meet the protection requirements for shared impoundment. MTB has also amended the scope of Part 193 to be consistent with the siting provisions of the memorandum of understanding with the U.S. Coast Guard, amended the definition of "LNG facility" to be consistent with the definition of this term in the Pipeline Safety Act of 1979; and changed the title and scope of Subpart B to refer to "Siting Requirements." Effective date: August 28, 1980. (45 FR 57402, August 28, 1980.)

49 CFR Part 195 -- Testing Highly Volatile Liquid Pipelines

This final rule provides that onshore "interstate pipeline facilities" (as that term is defined in the Hazardous Liquid Pipeline Safety Act of 1979) constructed before January 8, 1971, may not transport highly volatile liquids (HVL) unless they have been hydrostatically tested in accordance with Subpart E of Part 195 or do not operate at a pressure that exceeds 80 percent of any test or operating pressure which has been held for four continuous hours. This rule reduces the potential for severe HVL pipeline accidents caused by latent material and construction defects. Effective date: October 8, 1980. (45 FR 59161, September 8, 1980.)

49 CFR Parts 171 through 177 -- Identification Numbers,
Hazardous Wastes and Substances, International Descriptions,
Improved Descriptions, Forbidden Materials, and Organic Peroxides

The purpose of this final rule is to dispose of petitions for reconsideration of the final rules published in the May 22, 1980, Federal Register (45 FR 34560) and to make a number of corrections and clarifications to those rules regarding the following subjects:

(1) A numerical identification system for hazardous materials transported in commerce;

(2) Regulations pertaining to the transportation of hazardous wastes;

(3) Regulations pertaining to the identification of, and discharge notifications for, hazardous substances;

(4) Identification of certain forbidden materials by name and revisions to the general criteria applicable to forbidden materials;

(5) Proper shipping names for organic peroxides; and

(6) A requirement for entering on shipping papers the technical names of certain hazardous components of materials covered by n.o.s. entries.

Effective date: November 20, 1980. (45 FR 74640, November 10, 1980.)

railroad on-track equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, or pedestrian, at a rail/highway grade crossing.

Train Incident - is a collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment, which results in a reportable death, injury, or illness, but involves less than \$2,900 in damages to railroad on-track equipment, signals, track, track structures, or roadbed. Prior to 1979, this threshold stood at \$2,300; prior to 1977, at \$1,750; and prior to 1975, at \$750.

Nontrain Incident - is any event arising from the operation of a railroad, but not from the movement of equipment, which results in a reportable death, injury or illness.

Fatality -

- (1) The death of any person from an injury within 365 days of the accident/incident;
- (2) The death of a railroad employee from occupational illness within 365 days after the occupational illness was diagnosed by a physician;

Injury -

- (1) Injury to any person other than a railroad employee that requires medical treatment;
- (2) Injury to a railroad employee that requires medical treatment or results in restriction of work or motion for one or more workdays, one or more lost workdays, termination of employment, transfer to another job, or loss of consciousness; or
- (3) Occupational illness of a railroad employee, as diagnosed by a physician.

Nontrespassers - are persons who are lawfully on that part of railroad property which is used in railroad operation and persons adjacent to railroad premises and injured as the result of the operation of a railroad.

Trespassers - are persons who are on that part of railroad property used in railroad operation, and whose presence is prohibited, forbidden, or unlawful. A person on a rail-highway grade crossing is classified as a trespasser if the crossing is protected by gates or other similar barriers which were closed when the person entered the crossing. He is also a trespasser if he attempts to pass over or under trains or cars at the crossings.

WATERBORNE TRANSPORTATION

Waterborne Transportation - is the transport of freight and/or people by commercial vessels under USCG jurisdiction.

Casualty - casualties involving commercial vessels are required to be reported to the Coast Guard whenever the casualty results in the following:

- a. Actual physical damage to property in excess of \$1500.
- b. Material damage affecting the sea-worthiness or efficiency of a vessel.

Board, authorizing them to perform passenger and cargo charter services supplementing the scheduled service of the Certificated Route Air Carriers.

- (3) Commercial Operator (of large aircraft) - one of a class of air carriers operating on a private for-hire basis, as distinguished from a public or common air carrier, holding a commercial operator certificate, issued by the Administrator of the Federal Aviation Administration (pursuant to Part 45 of the Civil Air Regulations) authorizing it to operate (large) aircraft in air commerce for the transportation of goods or passengers for compensation or hire.

General Aviation - refers to all civil aircraft operations except those classified as air carrier operations.

General Aviation Flying:

- Personal - any use of an aircraft for personal purposes not associated with business or profession, and not for hire. This includes maintenance of pilot proficiency.
- Business - any use of an aircraft, not for compensation or hire, by an individual for the purposes of transportation required by a business in which he is engaged.
- Commuter operator - any operator who performs, pursuant to published schedule, at least five round trips per week between two or more points, or carries mail on contract.
- Executive - any use of an aircraft by a corporation, a company or other organization for the purposes of transporting its employees and/or property not for compensation or hire and employing professional pilots for the operation of the aircraft.
- Air Taxi - any use of an aircraft by the holder of an air taxi operating certificate which is authorized by that certificate.
- Instructional - any use of an aircraft for the purposes of formal flight instruction with or without the flight instructor aboard.
- Aerial Application - any use of an aircraft in agriculture to discharge material in flight and to perform activities such as antifrost agitation, agitating fruit trees, chasing birds from crops, checking crops, restocking of fish, animal and other wildlife, etc.
- Other - any use of an aircraft not specified in the preceding uses. It includes research and development, demonstration, sport parachuting, ferry flight, and industrial/special.

Aircraft Accident - is an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage.

Fatal Injury - is any injury which results in death within 7 days of the accident.

HAZARDOUS MATERIALS

Incident - refers to any unintentional release of hazardous material while in transit or storage.

Fatality - the information received indicated that the death was due to the hazardous material involved.

Injury - the information received indicated that the injury required professional medical treatment and was due to the hazardous material involved.

NOTES