



U.S. Department
of Transportation

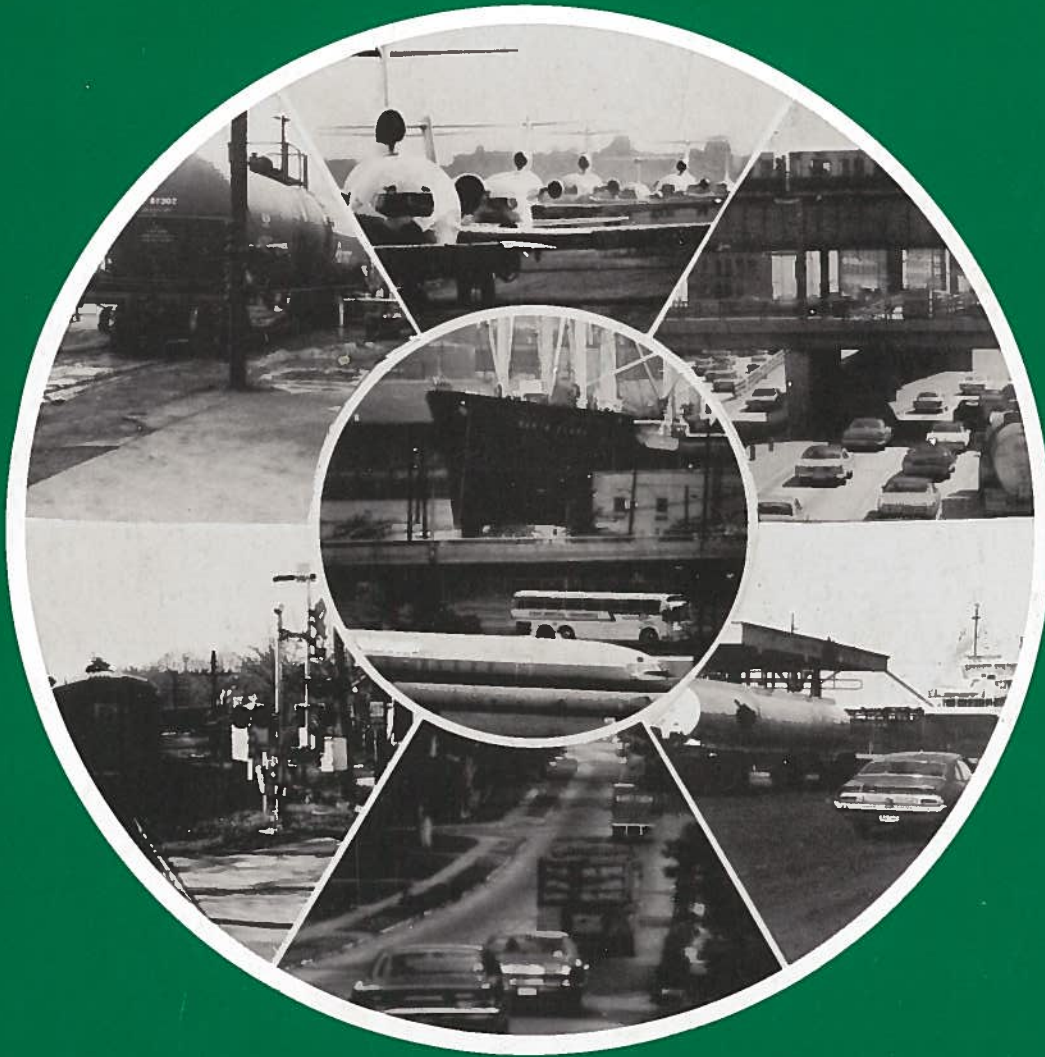
**Research and
Special Programs
Administration**

Transportation Safety Information Report

1984 Annual Summary

RETURN TO
DOT/TSC

TECHNICAL INFORMATION CENTER



Transportation Systems Center

1. Report No. DOT-TSC-RSPA-85-1	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle TRANSPORTATION SAFETY INFORMATION REPORT 1984 ANNUAL SUMMARY		5. Report Date April 1985	
7. Author(s) Marjorie Saccoccio		6. Performing Organization Code DTS-32	
9. Performing Organization Name and Address U.S. Department of Transportation Research and Special Programs Administration Transportation Systems Center, Center for Transportation Information, Cambridge, MA 02142		8. Performing Organization Report No.	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Research and Special Programs Administration Management Information Systems Washington, D.C. 20590		10. Work Unit No (TRAIS) RS509/R5505	
15. Supplementary Notes		11. Contract or Grant No.	
16. Abstract 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 on a monthly and quarterly basis for the current and preceding years. The report is based on data input to the Transportation Information Safety System (TRANSIS) by representatives in each of DOT's modal administrations and the National Transportation Safety Board. Featured in this report is the annual summary of modal safety hazards and safety program highlights for 1984, as well as summary charts detailing modal safety trends from 1974 to 1984. It should be noted that 1984 data are not yet available for selected tables and graphs.		13. Type of Report and Period Covered Final Report 1984	
17. Key Words Safety, Statistics, Transportation, Fatalities, Accidents, Injuries		14. Sponsoring Agency Code DMA-20	
19. Security Classif. (of this report) Unclassified		15. Supplementary Notes	
20. Security Classif (of this page) Unclassified		18. Distribution Statement Document is available to the U.S. public through the National Technical Information Service, Springfield, Virginia 22161	
19. Security Classif. (of this report) Unclassified		20. Security Classif (of this page) Unclassified	21. No. of Pages 140
19. Security Classif. (of this report) Unclassified		22. Price	

TABLE OF CONTENTS

	Page No.
TRANSIS REPRESENTATIVES AND MANAGEMENT	v
SUMMARY STATISTICS OF TRANSPORTATION SAFETY	1
SAFETY PERFORMANCE BY MODE	
Highway	9
Railroad	33
Rail Rapid Transit	45
Aviation	51
Marine	
Waterborne Transport	77
Recreational Boating	87
Materials Transport	
Pipelines	99
Hazardous Materials	99
NEW DOT SAFETY REGULATIONS	113
GLOSSARY	121

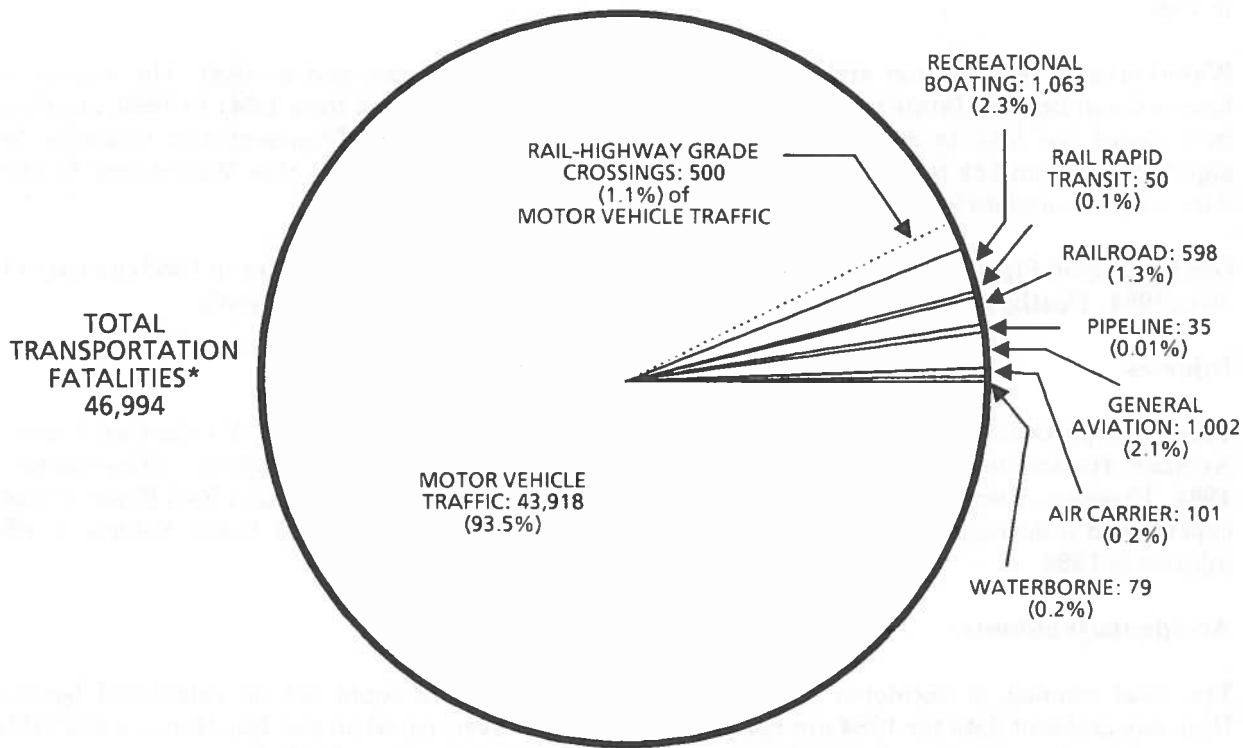
TRANSIS REPRESENTATIVES AND MANAGEMENT

AGENCY	ROUTING SYMBOL	TELEPHONE	ROOM
UNITED STATES COAST GUARD			
LCDR Tony Hart	G-MMI-3	426-6251	1404(TRPT)
Albert J. Marmo	G-BP-42	426-1070	4224(TRPT)
FEDERAL AVIATION ADMINISTRATION			
Charles J. Hoch	ASF-200	426-8256	333(10A)
FEDERAL HIGHWAY ADMINISTRATION			
Phyllis Young	HHS-22	426-2171	3409
FEDERAL RAILROAD ADMINISTRATION			
Bruce Fine	RRS-20	426-6144	8314
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION			
Grace B. Hazzard	NRD-33	472-7040	6201B
URBAN MASS TRANSPORTATION ADMINISTRATION			
Lloyd G. Murphy	URT-6	426-2896	6429
RESEARCH & SPECIAL PROGRAMS ADMINISTRATION			
Richard C. Stevens	DMA-20	426-4228	8409
NATIONAL TRANSPORTATION SAFETY BOARD			
Bernard Loeb	SP-10	382-6623	834(10A)
TRANSIS MANAGEMENT			
SPONSOR-RSPA/MANAGEMENT INFORMATION SYSTEMS			
Richard C. Stevens	DMA-20	426-4228	8409
TASK MANAGER/PROGRAM ANALYST			
William Gay	DTS-32	494-2450	1163(TSC)
Marjorie Saccoccio	DTS-32	(FTS 837-2450)	1162(TSC)

SUMMARY STATISTICS OF TRANSPORTATION SAFETY

- Total Transportation fatalities for 1984 rose to 46,994 compared with 45,894 in 1983, an increase of 2.4 percent.
- Motor Vehicle Traffic, Railroad, Air Carrier, Pipeline, and Rail-Highway Grade Crossing modes all experienced an increase in fatalities in 1984. Modes reporting a decrease in fatalities were General Aviation, Recreational Boating, Waterborne Transportation, and Hazardous Materials operations. The number of Rail Rapid Transit fatalities remained constant.
- Injuries increased in the following modes in 1984: Railroad, Air Carrier, General Aviation, Hazardous Materials operations, and Rail-Highway Grade Crossings. Motor Vehicle Traffic injuries remained unchanged; while Recreational Boating, Pipeline, Waterborne Transportation, and Rail Rapid Transit experienced a decrease in injuries.
- The total number of Motor Vehicle Traffic accidents was not available for 1984. However, accident data for Railroad, Recreational Boating, and Rail-Highway Grade Crossings showed an increase, while Air Carrier, General Aviation, Pipeline, Waterborne Transportation, Rail Rapid Transit, and Hazardous Materials all reported a decline.

CHART 1. TRANSPORTATION FATALITIES, 1984



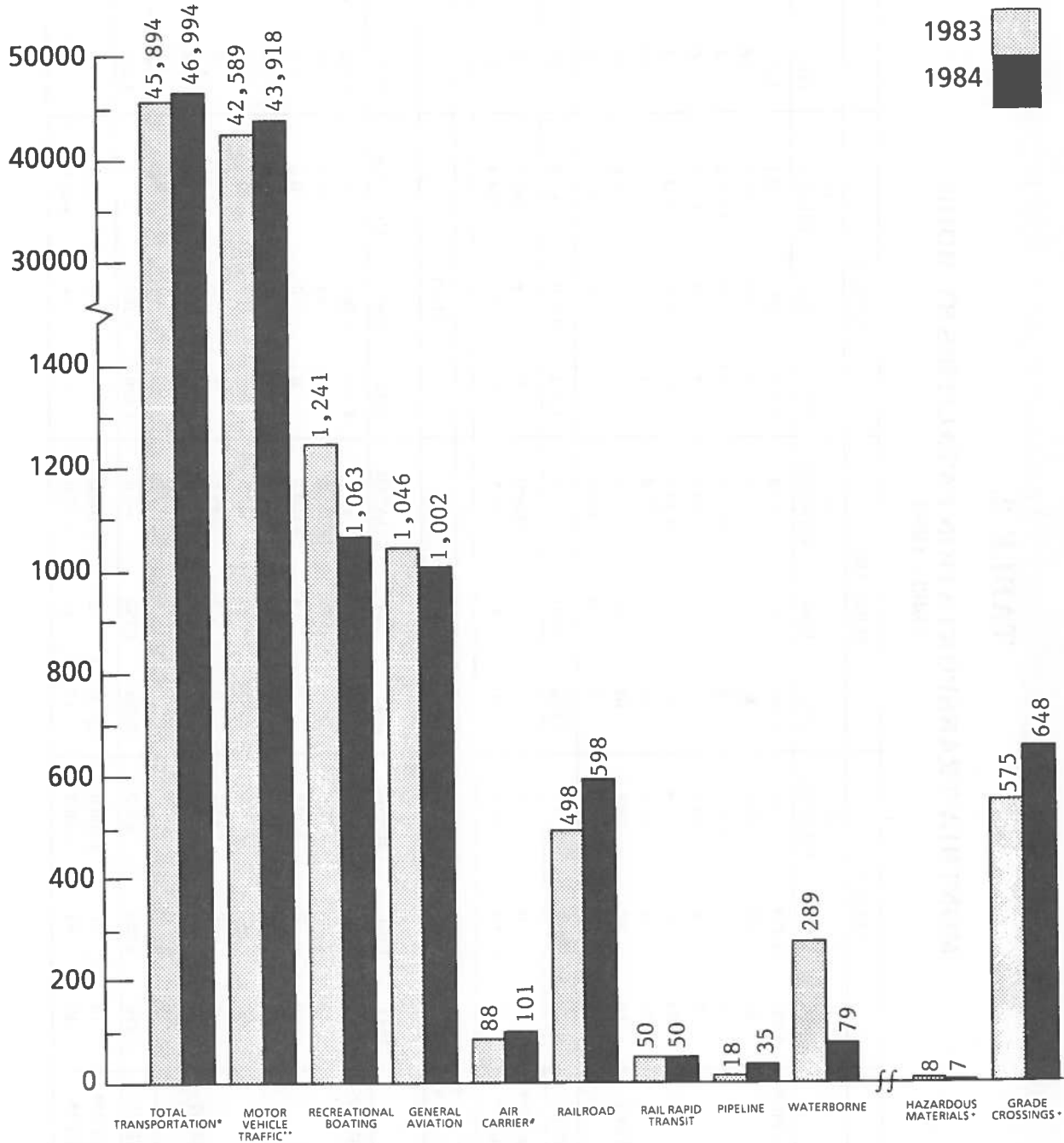
* Includes 148 Rail-Highway Grade Crossing fatalities which are not reported in Railroad figure

In 1984 three modes experienced an increase in reported accidents. Railroad accidents rose from 35,737 to 38,886, an 8.8 percent increase; and Rail-Highway Grade Crossing Accidents rose slightly from 7,161 to 7,276, a 1.6 percent increase; and Recreational Boating accidents increased from 5,569 to 5,700, a 2.4 percent increase.

In the other modes, Air Carrier and General Aviation accidents decreased, 4.4 and 2.7 percent, respectively. In 1984, there were 2,283 Waterborne Transportation accidents compared with 4,704 in 1983. Pipeline accidents fell 33.5 percent, and reported incidents involving transport of Hazardous Materials declined 5.7 percent in 1984. In addition, Rail Rapid Transit accidents dropped from 72 in 1983 to 38 in 1984.

CHART 2.

TRANSPORTATION FATALITIES BY MODE 1983 - 1984



- Note: Data for individual modes are shown in Table 1. 1984 Data are preliminary
- * Total Transportation includes 75 Rail-Highway Grade Crossing fatalities in 1983 and 148 in 1984 which are not reported in Railroad figure.
 - ** Traffic fatalities are NHTSA's estimates based on a 30-day definition. (see Glossary)
 - + These fatalities are included in other modes and Total Transportation.
 - * Air Carrier includes Commuter Carriers and Air Taxis.

TABLE 2. (Continued)

CLASSIFICATION	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		
	1983	1984	% CHANGE	1983	1984	% CHANGE	1983	1984	% CHANGE
MOTOR VEHICLE TRAFFIC*	3,987	4,117	+3.3	3,970	4,032	+1.6	3,552	3,713	+4.5
RAILROAD**	45	61	+35.6	45	52	+15.6	49	47	-4.1
RAIL RAPID TRANSIT +	1	2	+100.0	7	4	-42.9	4	4	0.0
AIR CARRIER + +	4	1	-7.5	13	3	-76.9	18	0	-1800.0
GENERAL AVIATION	98	93	-5.1	64	87	+35.9	118	70	-40.7
WATERBORNE#	16	4	-75.0	94	4	-95.7	25	10	-60.0
RECREATIONAL BOATING	88	80	-9.1	62	61	-1.6	44	44	0.0
PIPELINE***	1	5	+400.0	2	0	-200.0	3	7	+133.3
TOTAL TRANSPORTATION	4,240	4,363	+2.9	4,257	4,243	-0.3	3,813	3,895	+2.2
HAZARDOUS MATERIALS##	0	0	0.0	2	0	-200.0	0	0	0.0
GRADE CROSSING ONLY##	45	54	+20.0	64	56	-12.5	46	60	+30.4

CLASSIFICATION	FOURTH QUARTER TOTAL		TWELVE MONTH TOTAL			
	1983	1984	% CHANGE	1983	1984	% CHANGE
MOTOR VEHICLE TRAFFIC*	11,023	11,456	+3.9	42,589	43,918	+3.1
RAILROAD**	132	148	+12.1	498	598	+20.1
RAIL RAPID TRANSIT +	17	11	-35.3	50	50	0.0
AIR CARRIER + +	42	23	-45.2	88	101	+14.8
GENERAL AVIATION	252	259	+2.8	1,046	1,002	-4.2
WATERBORNE#	133	14	-89.5	289	79	-72.7
RECREATIONAL BOATING	143	134	-6.3	1,241	1,063	-14.3
PIPELINE***	8	10	+25.0	18	35	+94.4
TOTAL TRANSPORTATION	11,750	12,055	+2.6	45,894	46,994	+2.4
HAZARDOUS MATERIALS##	2	0	-200.0	8	7	-12.5
GRADE CROSSING ONLY##	171	179	+4.7	575	648	+12.7

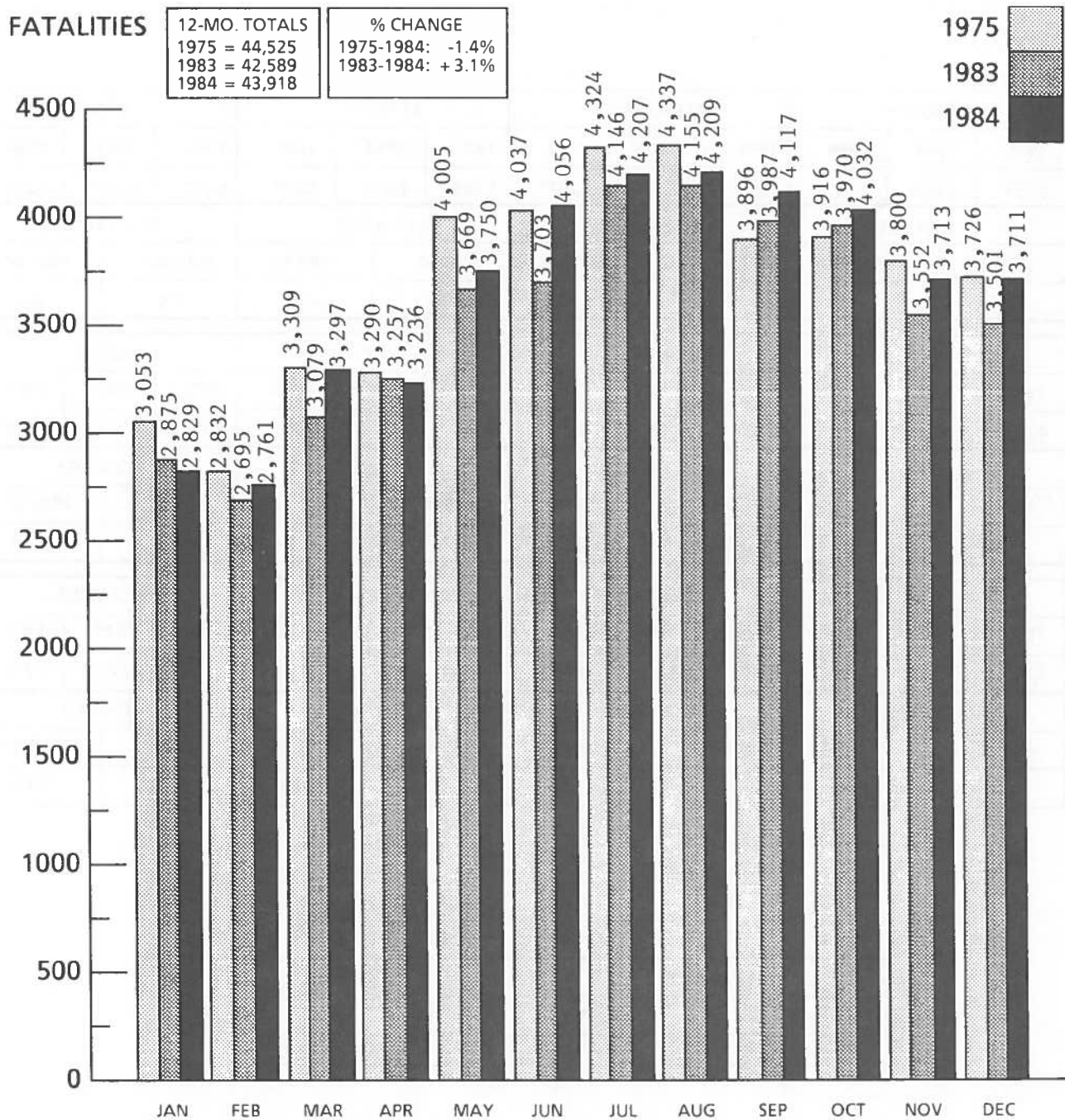
NOTE: 1984 data are preliminary.
 * Traffic fatalities are NHTSA's estimates based on a 30-day definition. Note that 1984 is a leap year which should increase the February count by about 3 percent.
 ** Fatalities resulting from train accidents, train incidents, and nontrain incidents. Train-related grade crossing fatalities are not included.
 *** Includes Gas and Liquid Pipelines.
 + Fatalities resulting from train and nontrain incidents.
 + Air Carrier includes Commuter Carriers and Air Taxis (see Glossary).
 # Waterborne data are for vessel casualties only. 1983 and 1984 data are preliminary.
 ## Highway-related grade crossing and hazardous materials fatalities are included in Total Transportation, but rail-related grade crossing fatalities are not included for monthly and fourth quarter. Twelve month total transportation figures include 75 Rail-Highway Grade Crossing fatalities in 1983 and 148 in 1984 which are not reported in railroad figure.

HIGHWAY

- During 1984, about 43,918 people died on the nation's highways. This represents more than a 3 percent increase over the total fatalities for 1983. From 1980 through 1983, the number of yearly fatalities has been declining. The 1984 figure is still 14 percent below the number of fatalities reported in 1980.
- Preliminary estimates of travel show a 4.5 percent increase during 1984. The resulting fatality rate decreased slightly to a value of 2.55 deaths per 100 million vehicle miles of travel -- the lowest value ever recorded.
- The number of licensed drivers increased 21 percent from 1975 to 1984, while the number of registered vehicles rose more than 26 percent during the same period.
- From 1983 to 1984, motor vehicle occupant fatalities increased nearly 4 percent, while pedestrian and pedalcyclist fatalities increased slightly -- less than one percent.
- In the fourth quarter of 1984, fatalities increased nearly 4 percent over the same period for 1983. There were 11,023 fatalities in 1983 versus 11,456 in 1984.
- Nearly half of all vehicle occupant fatalities could be avoided through the use of the safety belts, available in virtually all motor vehicles, and child restraints. A similar fraction of serious injuries could also be eliminated or reduced in severity. Child safety seat use has more than tripled and adult belt use has risen from 10 to 11 percent to 15 to 16 percent.
- The economic cost to society of motor vehicle crashes is estimated at \$57 billion annually; Federal government costs, e.g., welfare payments, are estimated at \$7.5 billion.

CHART 4.

MOTOR VEHICLE TRAFFIC FATALITIES BY MONTH 1975, 1983 AND 1984



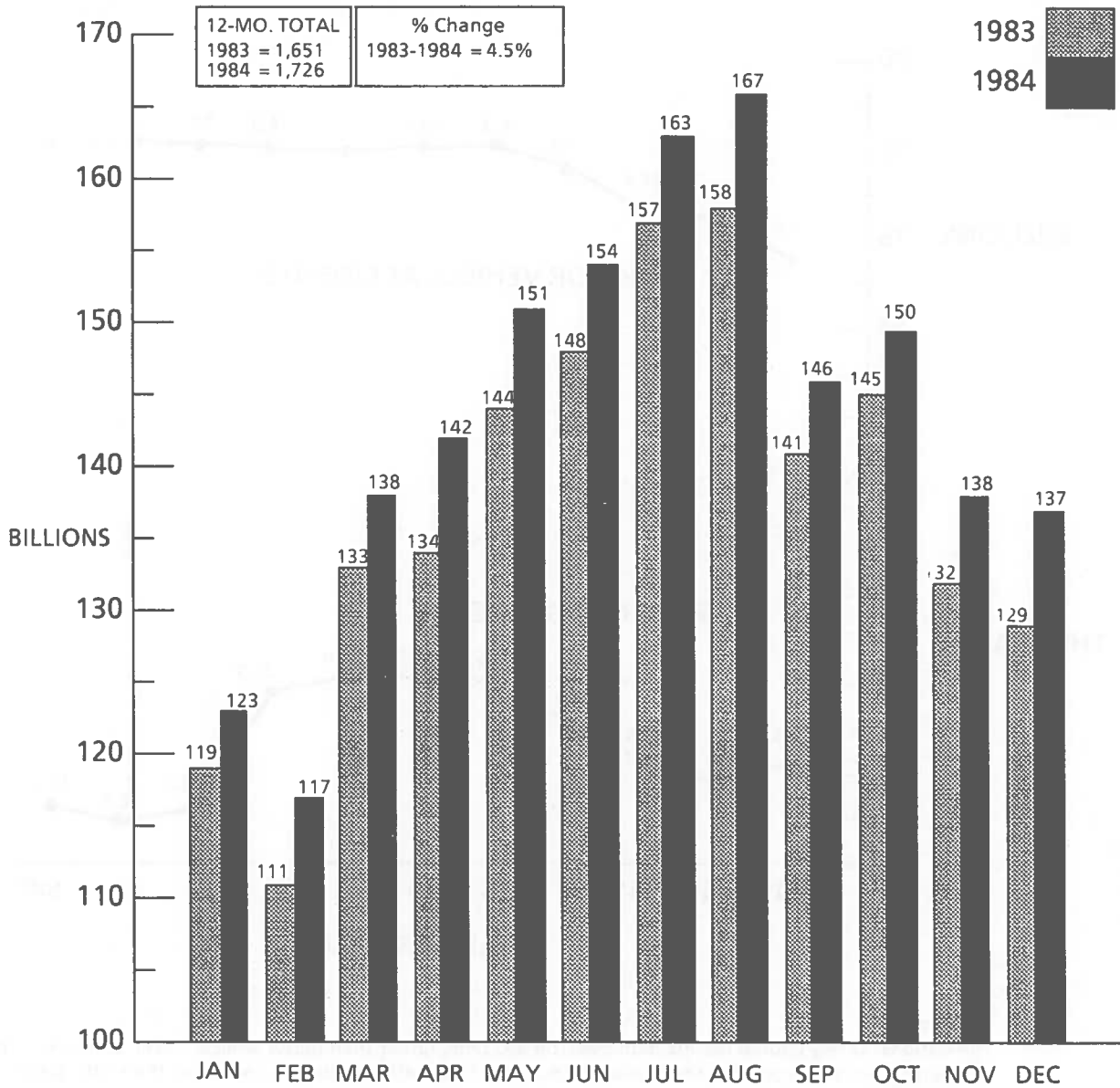
* 1984 is a leap year which should increase the February count by approximately 3 percent.

NOTE: Figures are based on 30-day fatality definition (see Glossary).
1984 Data are preliminary.
Data supplied as of 3/18/85.

SOURCE: 1975-1984 Data are from NHTSA's Fatal Accident Reporting System (FARS).

CHART 5.

MOTOR VEHICLE MILES OF TRAVEL, 1983 - 1984P

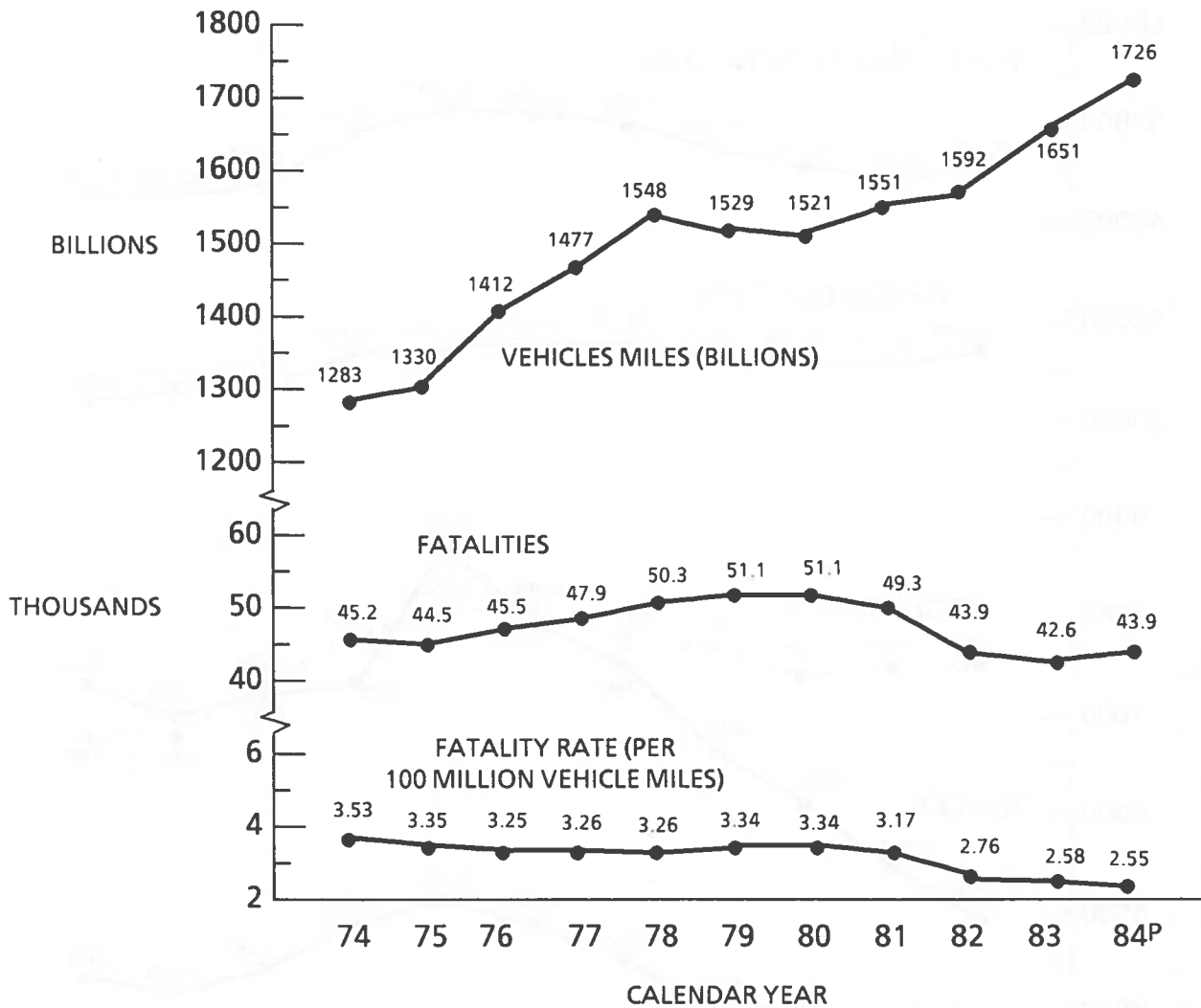


P = Preliminary.

SOURCE: FHWA, Office of Highway Safety, HHS-22.

CHART 7.

MOTOR VEHICLE TRAFFIC FATALITY RATES 1974 - 1984



P = Preliminary.

NOTE: Fatalities in this chart are based on a 30-day definition, and include 50 states and the District of Columbia. Data supplied as of 3/18/85.

SOURCE: 1973-1974 Fatalities, National Center for Health Statistics, HEW and State Accident Summaries (adjusted to 30-day definition).
 1975-1983 Fatalities, NHTSA, Fatal Accident Reporting System (FARS).
 Vehicle-Mile Data is from FHWA, Office of Highway Planning, HHP-44.
 Fatality Rate Data is from NHTSA, NCSA, NRD-33.

TABLE 5.

FATAL ACCIDENTS BY POSTED SPEED LIMIT, 1975, 1982-1984

	1975	1982	1983	1984*	Average Annual % Change 1975-84	% Change 1983-84
Under 55 MPH						
0-25 MPH	2,617	2,425	2,294	2,159	-1.91	-5.88
26-35 MPH	6,099	7,491	7,493	7,585	+2.20	+1.23
36-45 MPH	4,276	6,000	6,129	6,443	+4.18	+5.12
46-54 MPH	2,241	2,079	2,043	1,969	-1.29	-3.62
Total Under 55	15,233	17,995	17,959	18,156	+1.77	+1.10
55 MPH	16,093	18,707	18,519	19,032	+1.69	+2.77
Unknown	7,831	2,390	1,498	2,096	-12.35	+39.92
Total	39,158	39,092	37,976	39,284	+0.03	+3.44

* Preliminary.

Data supplied as of 3/18/85.

SOURCE: NHTSA, FARS.

TABLE 7.**MOTOR CARRIER* FATALITIES, ACCIDENTS, AND
INJURIES, BY TYPE OF CARRIER,
1976-1983**

CLASSIFICATION	1976	1977	1978	1979	1980	1981	1982	1983
Motor Carriers of Property								
Fatalities	2,520	2,983	2,998	3,072	2,528	2,810	2,479	2,528
Accidents	25,666	29,936	33,998	35,541	31,389	32,306	31,759	31,628
Injuries	26,794	31,698	32,757	32,126	27,149	28,533	25,779	26,692
Motor Carriers of Passengers								
Fatalities	62	87	68	60	74	95	76	67
Accidents	624	830	728	719	748	832	855	711
Injuries	1,723	1,929	1,917	1,977	1,711	2,041	1,970	1,827
All Motor Carriers								
Fatalities	2,582	3,070	3,066	3,132	2,602	2,905	2,555	2,595
Accidents	26,290	30,766	34,726	36,260	32,137	33,138	32,614	32,339
Injuries	28,517	33,627	34,674	34,103	28,860	30,574	27,749	28,519

* Includes only those motor carriers operating in interstate or foreign commerce.

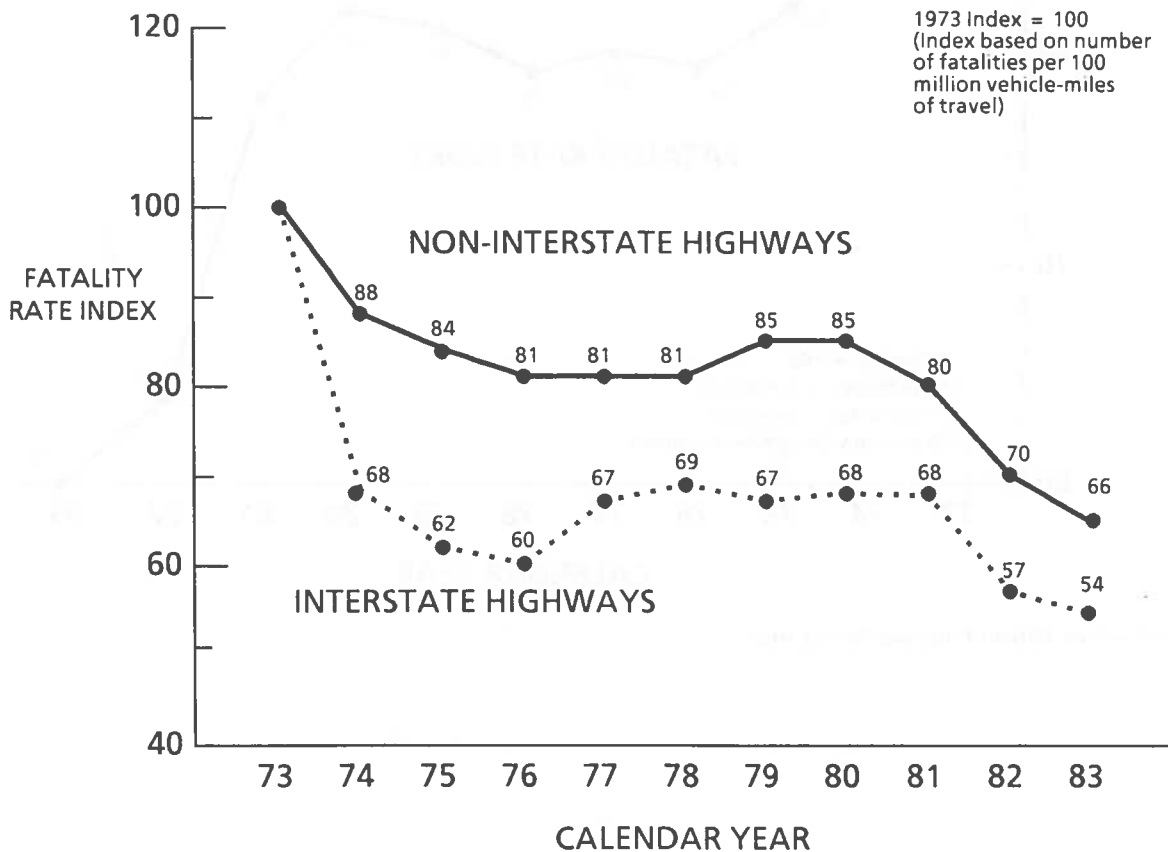
SOURCE: FHWA, Compliance Analysis Branch, BMCS, HMC-12.

Fatality and Injury Rate Trends

The rates shown in Figures 1 and 2 are based on a 1973 index. From 1973 to 1974, fatality and injury rates declined. From 1975 until 1980, the fatality rates remained fairly constant until 1981 when another downward pattern began and reached an all time low in 1983. There was a one-year drop of about 18 percent from 1981 to 1982 and in 1983 the fatality rate index declined further, by 6 percent. The injury rate index reflects a similar downward pattern (see Figure 2).

Enforcement of the 55-mph speed limit has been more intensive on the Interstate highway system, where speeds and traffic volume tend to be highest. Except for 1982 to 1983, Figure 1 shows the fatality rate has dropped much more sharply on the Interstate highways than on the non-Interstate roads since 1973.

FIGURE 1.
FATALITY RATE TRENDS, 1973 - 1983



SOURCE: FHWA, Office of Highway Safety, HHS-22.

MODAL SAFETY HAZARDS

Brake Study

Starting in 1941, the former Bureau of Public Roads (BPR) undertook a research program to determine, at periodic intervals, the brake performance levels of vehicles, especially trucks and tractor-trailer combinations operating on the Nation's highways. Studies were conducted in 1949, 1955, and 1963 by the BPR, and in 1974, by the Federal Highway Administration (FHWA).

In 1984, the FHWA completed an evaluation of the braking performance and brake adjustment of vehicles currently being operated on the highways. During the course of the study, information on several vehicle and service characteristics was collected, including age of vehicle and type of carriage in which each vehicle was being operated, e.g., exempt, private, or ICC certificated.

A total of 518 vehicles were tested in the states of California, Maryland, and Michigan. The research generally indicated (1) a lack of major improvement in the braking capability of commercial motor vehicles since 1974 and (2) the need for increased brake maintenance by motor carriers.

SOURCE: FHWA, BMCS, Evaluation and Analysis Branch, HMC-22.

Radioactive Material Surveillance by Highway

The FHWA's Bureau of Motor Carrier Safety has developed a national pilot program to be implemented in three regions beginning in Calendar Year 1985. The pilot program is to monitor and detect shipments of radioactive material and determine the carrier's compliance with applicable Federal regulations via the highway mode.

SOURCE: FHWA, BMCS, Field Programs Branch, HMC-11.

Ultrasonic Testing of Cargo Tanks

Technical procedures were developed for testing the metal thickness of cargo tanks at crucial points using an ultrasonic testing device. This procedure will be implemented by the motor carrier safety field staff during Calendar Year 1985 and will initially focus on cargo tanks transporting corrosive materials via highway to determine compliance with metal thickness requirements. This project will be expanded to include cargo tanks transporting other hazardous material as resources permit.

SOURCE: FHWA, BMCS, Field Programs Branch, HMC-11.

Alcohol Programs

Drunk driving remains a national tragedy. It is the single most common contributor to traffic fatalities and injuries. Among American teenagers, it is the leading cause of death. One-quarter of a million Americans have lost their lives in alcohol-related crashes during the past ten years, and untold millions of others have suffered serious injuries. The annual economic toll of drunk driving is at least \$21 billion.

Notwithstanding, progress has been and continues to be made in the war against drunk driving. During the first five years of this decade, the percentage of fatally-injured drivers who were legally intoxicated has steadily declined, from 50 percent in 1980 to 45 percent in 1984. Total traffic deaths

Four other student passengers were hospitalized; eight children escaped with minor injuries; two were unhurt.

The Safety Board determined that the probable causes of the accident were (1) the unsecure steering axle wheels of the towed car; (2) the car's swinging over the highway centerline into the path of the oncoming tractor-semitrailer; (3) the loss of control of the tractor-semitrailer; and (4) its entry into the opposing traffic lane.

Manufactured in 1979, the International Harvester-Wayne schoolbus was subject to three safety standards of NHTSA. These standards set criteria for schoolbus rollover protection, body joint strength, and passenger seating and crash protection.

The Safety Board reported that the Rehoboth schoolbus particularly demonstrated "vast improvement" over construction methods that were used before existing body joint strength standards took effect in 1977. The Safety Board had recommended such tightened regulations in 1970.

The Safety Board noted that, as in previous schoolbus accidents it has investigated, there was a small post-crash fire that could have ignited bus fuel and endangered accident survivors. The only fire extinguisher aboard the bus was inaccessible because it was in the heavily-damaged front end of the bus. The Board reiterated a prior recommendation to NHTSA that it require fire extinguishers at both the front and rear ends of schoolbuses.

SOURCE: NTSB News Digest, Vol. 4, No. 1, p. 2.

SAFETY PROGRAM HIGHLIGHTS

Motor Carrier Safety Act of 1984

Senate Bill S.2217 was a bill passed by the Congress on October 11, 1984 and signed into law by the President on October 30, 1984. Public Law 98-554, as it is now known, contains two titles. Title I, "Tandem Truck Safety Act," addresses length and width limitations for commercial motor vehicles. Title II, "Motor Carrier Safety Act of 1984," addresses the safe operation of commercial motor vehicles, the safety and health of motor carrier employees, and other safety matters as they relate to interstate or foreign commerce transportation by motor vehicles. Title II, Motor Carrier Safety Act of 1984, will be discussed in this article.

The Act establishes a five-year review period for State safety regulations. All State regulations pertaining to commercial motor vehicle safety are to be submitted to the Secretary of Transportation and a Safety Panel for review. After review by the Safety Panel, the Secretary is to initiate rulemaking to determine whether the State rules are less stringent than the Federal rules, have the same effect, or add to and are more stringent than the Federal rules. At the end of the 60-month period after enactment, State rules found to have the same effect as Federal rules may remain in effect; less stringent rules may be preempted, and additional more stringent State rules may remain in effect unless the Secretary determines that the State rule has no safety benefit, is incompatible with a Federal rule, or would unduly burden interstate commerce, in which case the State rule would be preempted.

The Act significantly amends the Federal Motor Carrier Safety Program. The Secretary is directed to reissue the Federal Motor Carrier Safety Regulations (FMCSR), to ensure the objectives of the Act, within 18 months.

SOURCE: FHWA, Development Branch, HMC-21.

Examination of Cargo Tank Manufacturers

An effort initiated in FY 1984 involves the monitoring and inspection of materials and processes utilized in the fabrication of cargo tanks to be used in the bulk transportation of hazardous materials by highway. The purpose of these examinations is to determine the manufacturer's compliance with applicable Federal regulations.

SOURCE: FHWA, BMCS, Field Programs Branch, HMC-11.

Cargo Tank Integrity

During 1984, the BMCS completed a 27-month research project involving a study of the integrity of the MC 330/331 cargo tanks. This effort, entitled "Integrity of MC 330/331 Cargo Tanks," evaluated fabrication practices, carrier practices, shipper practices, performed inspection and testing, and conducted an industry conference. Recommendations evolving from the research effort include:

1. Require design data be available in support of production practices;
2. Authorize use of aluminum baffles in ammonia service and require their secure installation;
3. Require annual visual and technical inspections;
4. As part of tank requalification, remove safety relief valves, pressure test valves and piping, requalify if in contaminated product service, code compliance for nondestructive examination personnel, and requalification by an authorized agency;
5. Require product test dates and tank markings be entered on shipping papers for each loading;
6. Require shippers to audit quality control records annually and report specification variances by dates or periods involved; and
7. DOT control and authorization of inspection and testing facilities.

Additionally, the major portion of the research effort evaluating the integrity of the MC 307/312 cargo tanks was completed. The integrity of these cargo tanks was assessed by conducting five tasks:

1. A literature review of incident/accident and cargo tanks inventory data;
2. Production practices of six fabricators were evaluated;
3. Maintenance and requalification practices of nine carriers were evaluated;
4. The compartment, product retention systems, and pressure release devices of thirty tanks (transports and bobtails) were tested;
5. An industry workshop was held; and
6. An ancillary task to evaluate product delivery hose failures is scheduled.

A final report detailing the results of this research effort is expected to be completed in 1985.

Motor Carrier Safety Assistance Program (MCSAP)

Section 402 of the Surface Transportation Assistance Act of 1982 authorized the Secretary of Transportation to provide grants to states for the development of programs for the enforcement of Federal and compatible State commercial motor carrier safety regulations. The objective of the program was to reduce truck and bus involvement in collisions by minimizing the hazards associated with large commercial motor vehicles on the Nation's highways. The Federal Highway Administrator was delegated the responsibility for the issuance of procedures and administration of the grants. The Congress appropriated \$8 million for this grant-in-aid program for FY 1984.

Forty-six States participated in the program during FY 1984, the first year of the program. Twenty-nine of the states were in the development phase and 17 States implemented new or enhanced existing motor carrier safety programs.

During FY 1984, the major emphasis was on recruitment, hiring, and training. Some 1,200 State enforcement officers from 13 States completed training in uniform roadside driver-vehicle inspection procedures and out-of-service criteria. Also 250 State enforcement officers received training in the safe transportation of hazardous materials, including the roadside inspection of cargo tanks.

Several States invested funds in computer equipment for the development of MIS to compile commercial vehicle accident statistics and roadside inspection and enforcement data. The computer equipment will be compatible with that used by the Federal Government and will ultimately be connected to the BMCS MIS for the exchange of truck safety information.

The Congress appropriated \$14 million of the grant-in-aid program for FY 1985. Most States that were in the implementation phase last year will now be in a position in FY 1985 to aggressively pursue programs to enforce the applicable commercial motor vehicle regulations through roadside driver-vehicle inspections. A few of the States will be able to conduct safety management audits at motor carriers' principal places of business and at terminals.

SOURCE: FHWA, BMCS, State Programs Branch, HMC-13.

Tractor-Trailer Driver Training

The Bureau of Motor Carrier Safety has now completed a multi-year, multiple-phase research program to develop "Proposed Minimum Standards for Training Tractor-Trailer Drivers." The trucking industry's response to these proposed standards has been universally excellent, with over 1,400 sets already requested and requests are continuing undiminished.

SOURCE: FHWA, BMCS, Evaluation and Analysis Branch, HMC-22.

Alcohol Safety Programs

More than one out of two Americans will be involved in an alcohol-related traffic accident in their lifetime. Over the last ten years, 250,000 Americans lost their lives in alcohol-related crashes. This figure represents 25,000 deaths each year; 500 every week; 71 every day; and one every 20 minutes.

In October 1982, Congress provided incentives for States/local communities to do more to combat drunk driving; States that meet the requirements are rewarded with an incentive grant under Section 408. Twenty-five applications for Alcohol Incentive Grants have been received and a number of other States are in the process of qualifying this year.

Mandatory Use Laws will begin saving lives immediately and instill belt use habits that will ensure that automatic restraints are used correctly.

Based on projected fatalities and injuries and using the range of effectiveness estimates and a range of automatic and manual seat belt usage, estimates were made of the incremental reductions in fatalities, Accident Injury Severity (AIS) 2-5 injuries (more severe), and AIS 1 injuries (least severe) for all automatic restraint systems (air bags without seat belts, air bags with lap belts, air bags with lap/shoulder belts and automatic belts) and for mandatory use laws if they are effective in all states. Estimates are provided across a broad range of usage (20-70 percent) for automatic belts and a narrower range (40-70 percent) for mandatory use laws because the precise level of future usage is uncertain. The major results of this analysis are shown in the following table.

These estimates are annual benefits assuming full implementation. The low, mid-point, and high estimates are based on the effectiveness ranges. The mid-points are shown only for illustrative purposes.

INCREMENTAL REDUCTION IN FATALITIES AND INJURIES

	Fatalities			AIS 2-5 Injuries			AIS 1 Injuries
	Low	Mid-Point	High	Low	Mid-Point	High	
Air Bags Only	3,780	6,190	8,630	73,660	110,360	147,560	225,770
Air Bags With Lap Belt (12.5% Usage)	4,410	6,670	8,960	83,480	117,780	152,550	225,770
Air Bag With Lap/Shoulder Belts (12.5% Usage)	4,570	6,830	9,110	85,930	120,250	155,030	225,770
<u>Automatic Belts</u>							
20% Usage to 70% Usage	520	750	980	8,740	12,180	15,650	22,760
	5,030	6,270	7,510	86,860	105,590	124,570	172,120
<u>Mandatory Belt Use (in all States)</u>							
40% Usage to 70% Usage	2,830	3,220	3,590	47,740	53,440	59,220	82,510
	5,920	6,720	7,510	100,430	112,410	124,570	172,120

SOURCE: NHTSA, Office of Occupant Protection, NTS-10.

RAILROAD

- Railroad accidents and the accident rate per million train miles reached a 10-year low in 1984. Railroad accidents declined nearly 64 percent since 1974 and the accident rate per million miles dropped more than 48 percent during the past decade. Preliminary data for 1984 indicate that train accidents decreased 0.4 percent in 1984 compared to 1983.
- In 1984, there was a 20 percent increase in fatalities; 598 fatalities were reported in 1984 compared with 498 in 1983. Rail-highway grade crossing fatalities also rose during the same period -- from 575 in 1983 to 648 in 1984. Of the total number of railroad fatalities reported in 1984, 52 percent occurred in a rail-highway grade crossing accident.
- The total number of railroad and grade crossing injuries increased nearly 11 percent when 1984 is compared to 1983. Injuries to railroad employees on duty accounted for 86 percent of the total number of injuries in 1984.
- In the fourth quarter of 1984 compared to the same period of 1983, train accidents decreased 18 percent -- from 938 to 769. The number of fatalities resulting from train accidents also fell from 13 to 2 during these quarters. However, there was a significant increase in the number of injuries reported. Injuries increased from 147 in the fourth quarter of 1983 to 376 in the fourth quarter of 1984.
- Rail-highway grade crossing incidents and injuries experienced declines in the fourth quarter of 1984 when compared to the fourth quarter of 1983; incidents fell from 2,218 to 1,929 and injuries decreased from 770 to 710, while fatalities increased from 171 to 179.

**TABLE 8. RAILROAD FATALITIES AND INJURIES,
BY TYPE OF PERSON, 1983-1984**

CLASSIFICATION	FATALITIES		INJURIES**	
	1983	1984	1983	1984
Employees on Duty	61	59	30,416	33,351
Employees Not on Duty	3	5	395	444
Passengers on Trains	4	13	502	1,000
Nontrespassers	527	574	2,728	2,882
Trespassers	472	588	683	773
Contractor Employees	6	7	95	108
Total Railroad and Grade Crossing	1,073	1,246	34,819	38,558
Railroad Only*	498	598	32,196	35,647
Grade Crossing Only	575	648	2,623	2,911

* Includes train and nontrain data.

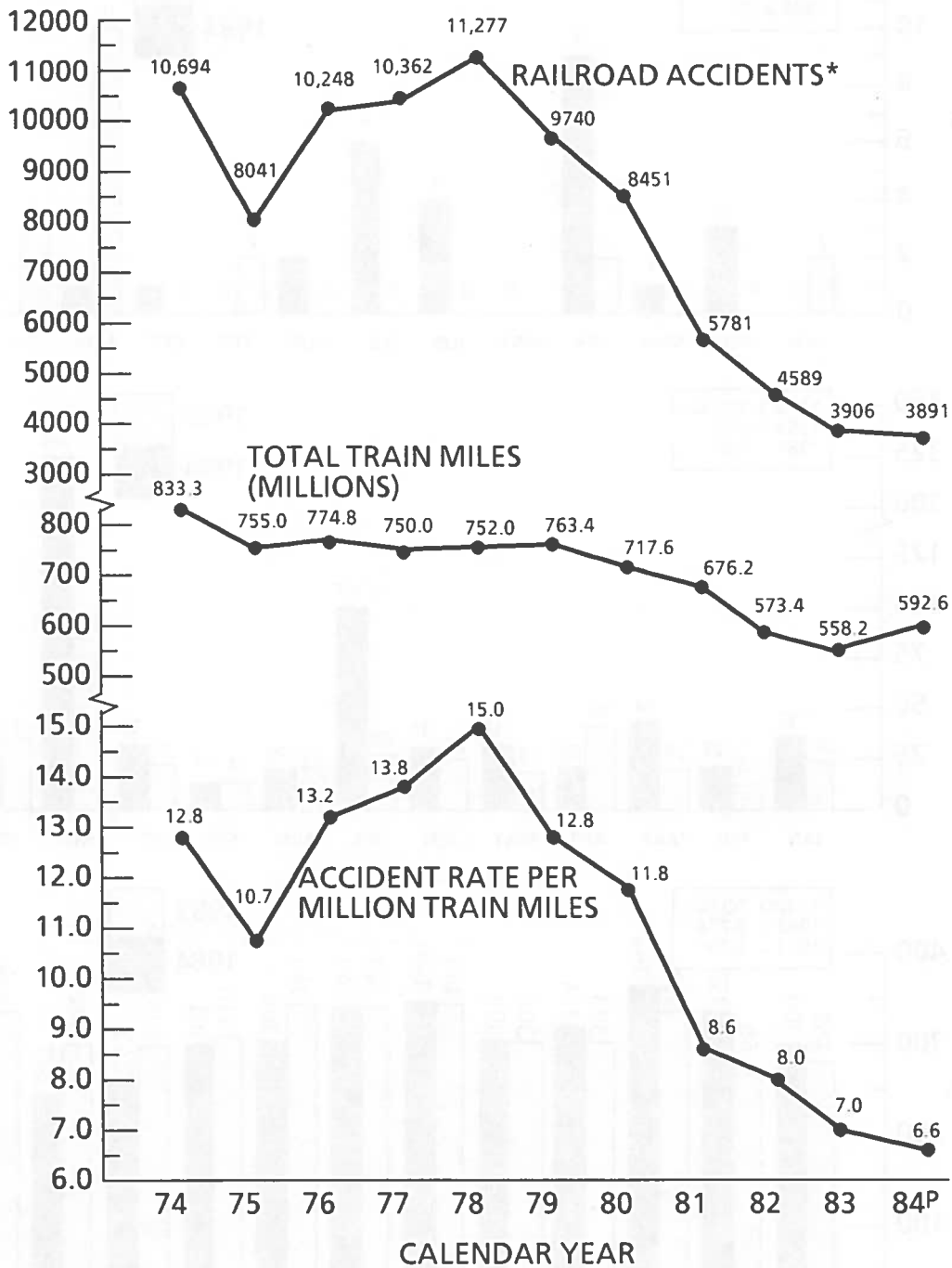
** Includes occupational illness.

Data supplied as of 4/22/85

SOURCE: FRA, Office of Safety Analysis, RRS-20.

CHART 11.

RAILROAD ACCIDENT RATES, 1974 - 1984



P = Preliminary.

* Train accidents only--also includes those Rail-Highway Grade Crossing accidents which have been classified as Train accidents.

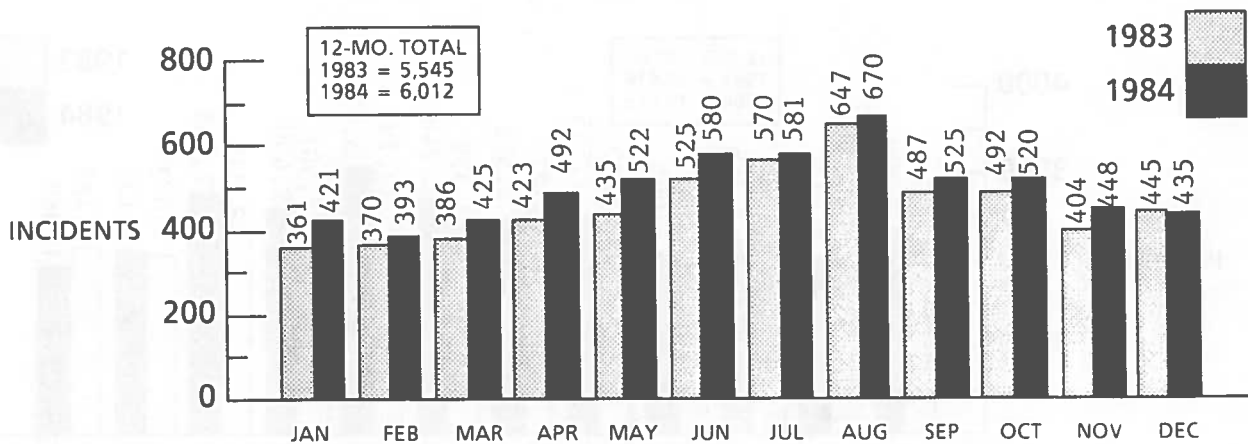
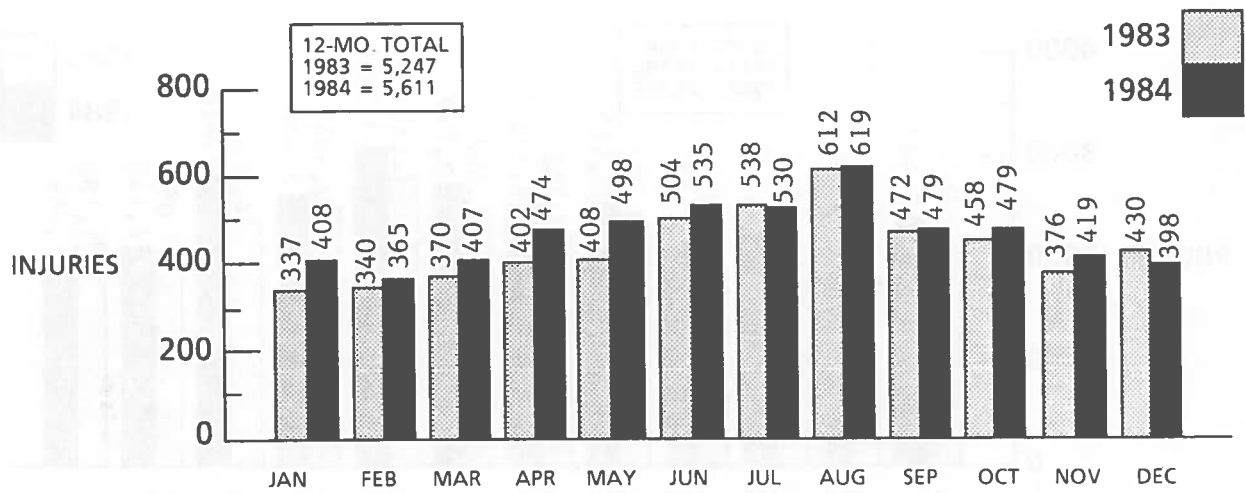
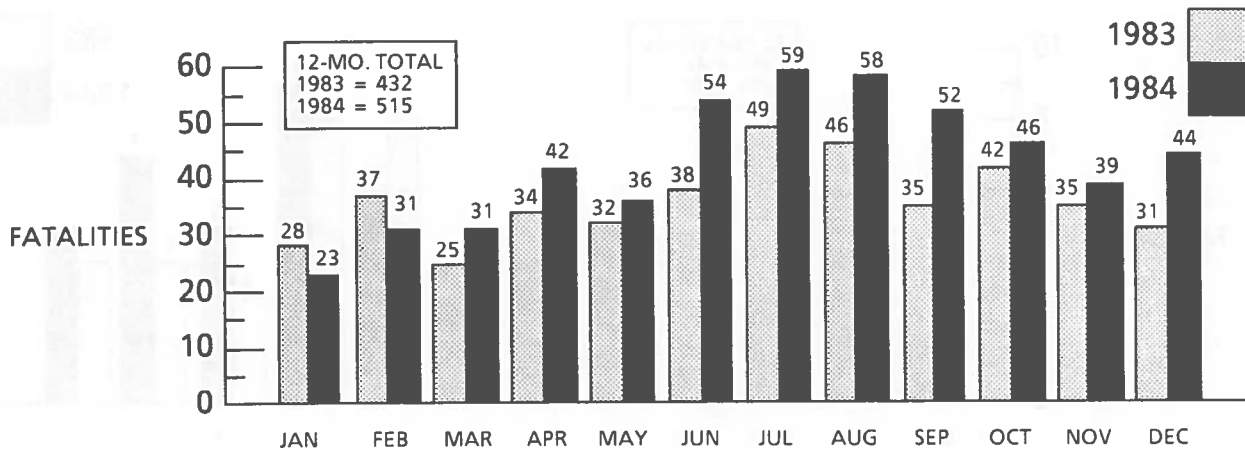
NOTE: Reporting threshold for Train accidents was raised from \$750 to \$1,750 in 1975, to \$2,300 in 1977, to \$2,900 in 1979, to \$3,700 in 1981, and to \$4,500 in 1983.

Data supplied as of 4/22/85.

SOURCE: FRA, Office of Safety Analysis, RRS-20.

CHART 13.

TRAIN INCIDENT* FATALITIES, INJURIES AND INCIDENTS, 1983 - 1984

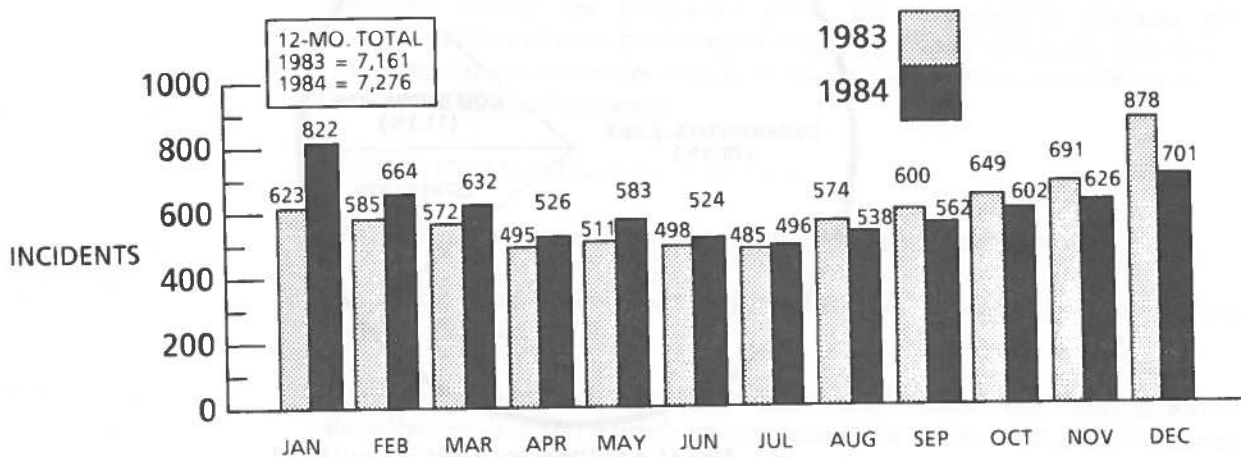
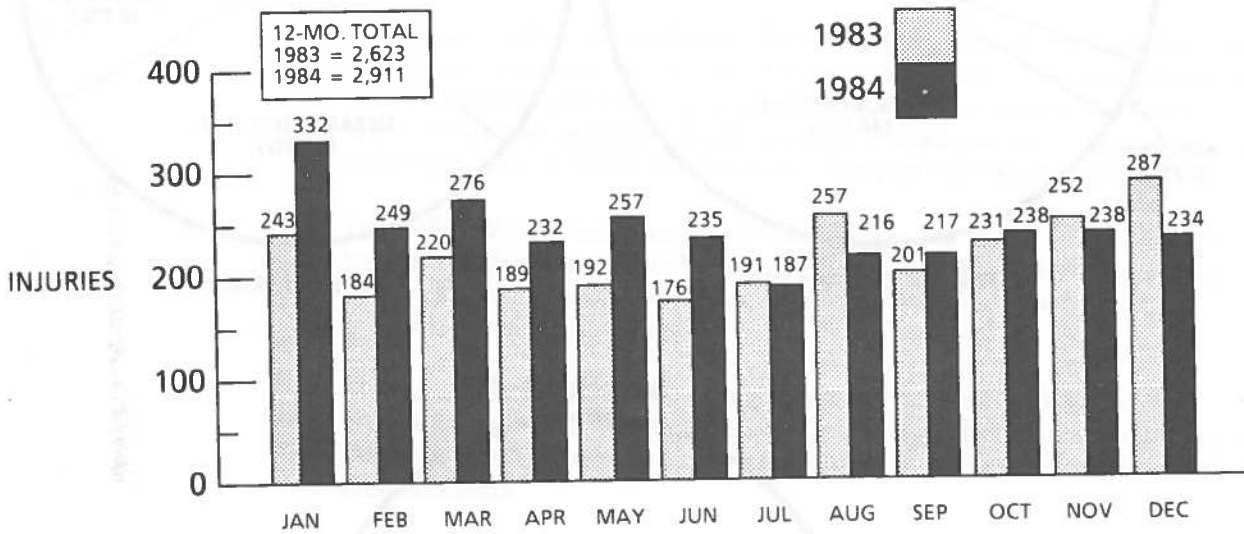
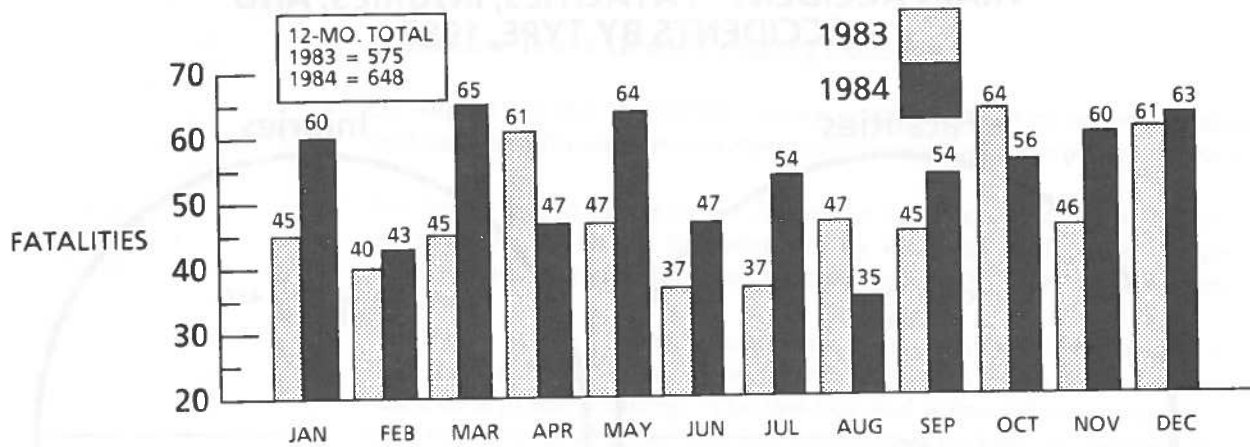


* See Glossary for Train Incident definition. This chart does not include Grade Crossings.
 NOTE: 1984 Data are preliminary.
 Data supplied as of 4/22/85.

SOURCE: FRA, Office of Safety Analysis, RRS-20.

CHART 15.

GRADE CROSSING* FATALITIES, INJURIES AND INCIDENTS, 1983 - 1984



* See Glossary for definition.
 NOTE: 1984 Data are preliminary.
 Data supplied as of 4/22/85.

SOURCE: FRA, Office of Safety Analysis, RRS-20.

In addition, any near misses that are reported are investigated by the FRA.

During the FRA investigations, all persons involved (including the railroad employee) or witnesses are extensively interviewed. In 1984, 217 accidents and 44 employee fatalities were investigated. Over the past five years, an average of 150 accidents and 60 employee fatalities per year have been investigated.

SOURCE: FRA, Office of Safety Analysis, RRS-20.

Major Accomplishments During 1984

- The FRA issued a Notice of Proposed Rulemaking on Alcohol and Drug Use in Railroad Operations. Alcohol and drugs impair the performance of operating employees, and such impairment has been implicated in a number of serious rail accidents. The FRA conducted four hearings during 1984. The hearings were held in Denver, Chicago, New Orleans and Washington, D.C. The final rule is expected to be issued in mid-1985.
- A Special Safety Inquiry to obtain information from the public to assist in evaluating possible future courses of action to enhance public safety at railroad-highway grade crossings was initiated in 1984. One public hearing was held in St. Paul in July 1984 and one additional hearing was held in January 1984 in Washington, D.C.
- On January 14, 1984, the FRA submitted to Congress its report on railroad passenger safety. In that report, the FRA concluded that rail passenger service in the United States has compiled a superior safety record attributable to the rail industry's operational and safety practices and the effect of FRA's safety regulations.
- A final rule was published January 17, 1984, concerning Commuter Track Rules. The existing Track Safety Standards were modified to include 384 mile of track used for commuter and other short haul passenger service.
- In FY 1984, three systemwide assessments were completed. The FRA will continue the systemwide assessment approach and three assessments will be conducted in FY 1985.
- Several management initiatives were taken to increase the on-board strength of the Federal inspection force. We now have 323 safety inspectors on-board against an authorized level of 325.

SOURCE: FRA, Office of Safety Analysis, RRS-20.

RAIL RAPID TRANSIT

- During the fourth quarter of 1984, there were four Rail Rapid Transit (RRT) revenue train accidents. Two of these accidents were the result of collisions with persons and two were the result of derailments. In the fourth quarter of 1983, fires were the predominant cause of revenue train accidents. Nine of the 20 train accidents (45 percent) resulted from fires during this quarter.

The following table summarizes train accidents by type.

	1983 FOURTH QUARTER	1984* FOURTH QUARTER
Collision with Other Train	3	0
Collision with Obstacle	0	0
Collision with Person	3	2
Derailment	5	2
Fire	9	0
Rail-Highway Crossing	0	0
Total	20	4*

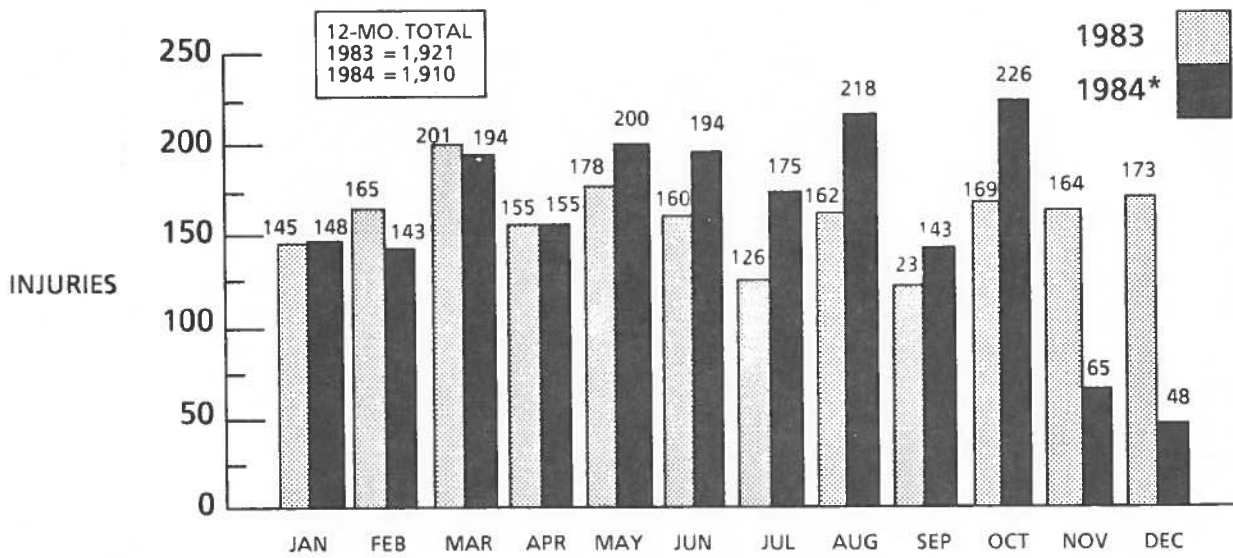
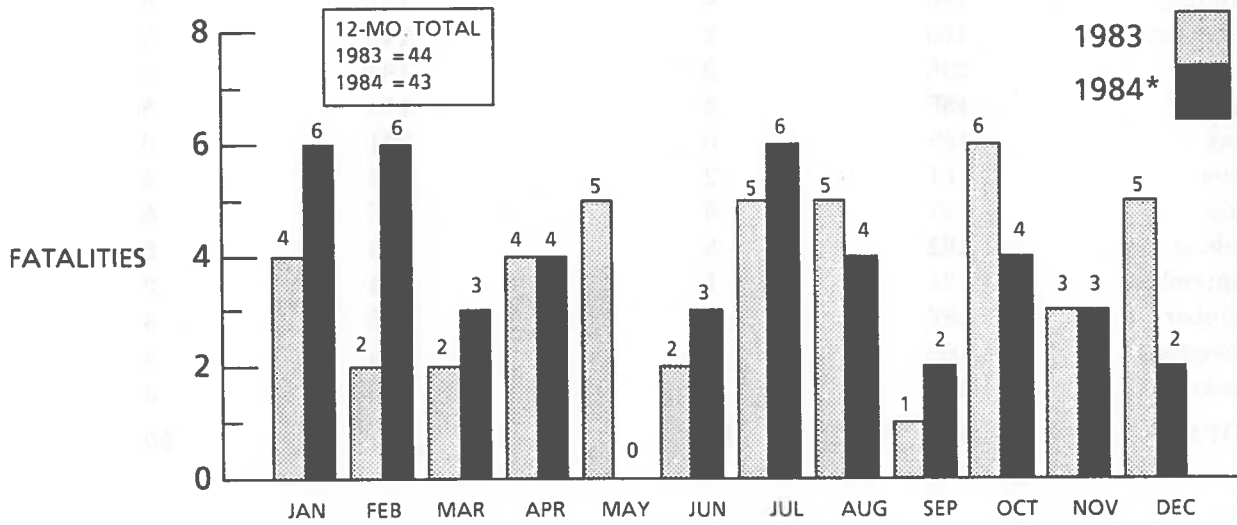
- Of the 352 RRT train and nontrain casualties (injuries and fatalities) reported in the fourth quarter of 1984, 112 resulted from slips and falls; while in the fourth quarter of 1983, 382 of the 538 casualties also resulted from slips and falls. This type of accident accounted for 32 percent of all casualties reported during the fourth quarter of 1984 and 71 percent in the same quarter of 1983.
- Derailments were the major cause of RRT revenue train accidents in 1984. Fourteen (37 percent) of the 38 train accidents reported in 1984 were the result of derailments.
- For the year 1984, the number of RRT train and nontrain fatalities remained unchanged when compared to 1983; there were 50 fatalities reported each year. However, injuries declined slightly -- from 1,977 in 1983 to 1,960 in 1984. Slips and falls were the predominant cause of fatalities and injuries in 1984 and 1983, 52 percent and 71 percent, respectively.

* Preliminary data prior to verification.

Source: TSC, Transit Safety and Security Division, DTS-65, SIRAS.

CHART 18.

RRT NONTRAIN FATALITIES AND INJURIES, 1983 - 1984



* Preliminary data prior to verification.

SOURCE: TSC, Transit Safety and Security Division, DTS-65, SIRAS.

MODAL SAFETY HAZARDS

From the preliminary data reported, the major cause of RRT revenue train accidents in 1984 was from derailments. Of the 38 train accidents in 1984, 12 were of this type -- 32 percent of the total train accidents. Eight of these derailments were caused by equipment in need of repair.

Fires, which had been the major cause of accidents in 1983, declined in 1984. Four of the 38 train accidents reported were caused by fires -- 11 percent of the total train accidents.

In any emergency situation, the major goal of the transit system is to minimize the effect or consequences of the emergency situation. To accomplish this, the transit system and emergency response personnel must be prepared to evacuate patrons from the hazardous areas. Patron evacuation and the timely response of emergency personnel is extremely important considering that transit systems operate in confined underground tunnels and on elevated structures. To insure that a transit system is prepared to respond to this need requires adequate planning, coordination, and the appropriate facilities and equipment. This emergency preparedness need is vital to the safety of the public.

It is the goal of current research to continue to decrease the likelihood of transit fires and to increase the effectiveness of all parties involved when emergency fire situations do occur, thus keeping any casualties and property damage to minimum levels.

SOURCE: TSC, Safety & Security Division, DTS-65.

SAFETY PROGRAM HIGHLIGHTS

Fire Safety

On August 14, 1984, the Urban Mass Transportation Administration (UMTA) published in the Federal Register, Recommended Fire Safety Practices for Rail Transit Materials Selection. These recommended fire practices address the flammability and smoke emission characteristics of materials used in the construction of rapid rail transit and light rail transit vehicles. Adoption of these recommended practices will help to minimize the fire threat in rail transit vehicles and, thereby, reduce the injuries and damage resulting from vehicle fires.

SOURCE: TSC, Safety & Security Division, DTS-65.

Emergency Preparedness

Recommended Emergency Preparedness Guidelines for Rail Transit Systems were finalized. These guidelines are designed to assist Rail Transit Systems in assessing, developing, documenting, and improving their capabilities for responding to emergency situations. They will also assist transit systems in coordinating their efforts with emergency response organizations in a manner which best protects the traveling public and transit system facilities and equipment.

Four major areas of emergency preparedness are addressed. The first area presents recommendations for Emergency Plan Development, including emergency response procedures, agreements with emergency organizations, and supporting documentation. The training area outlines recommended training for both transit system and emergency response personnel, as well as programs to promote

AVIATION

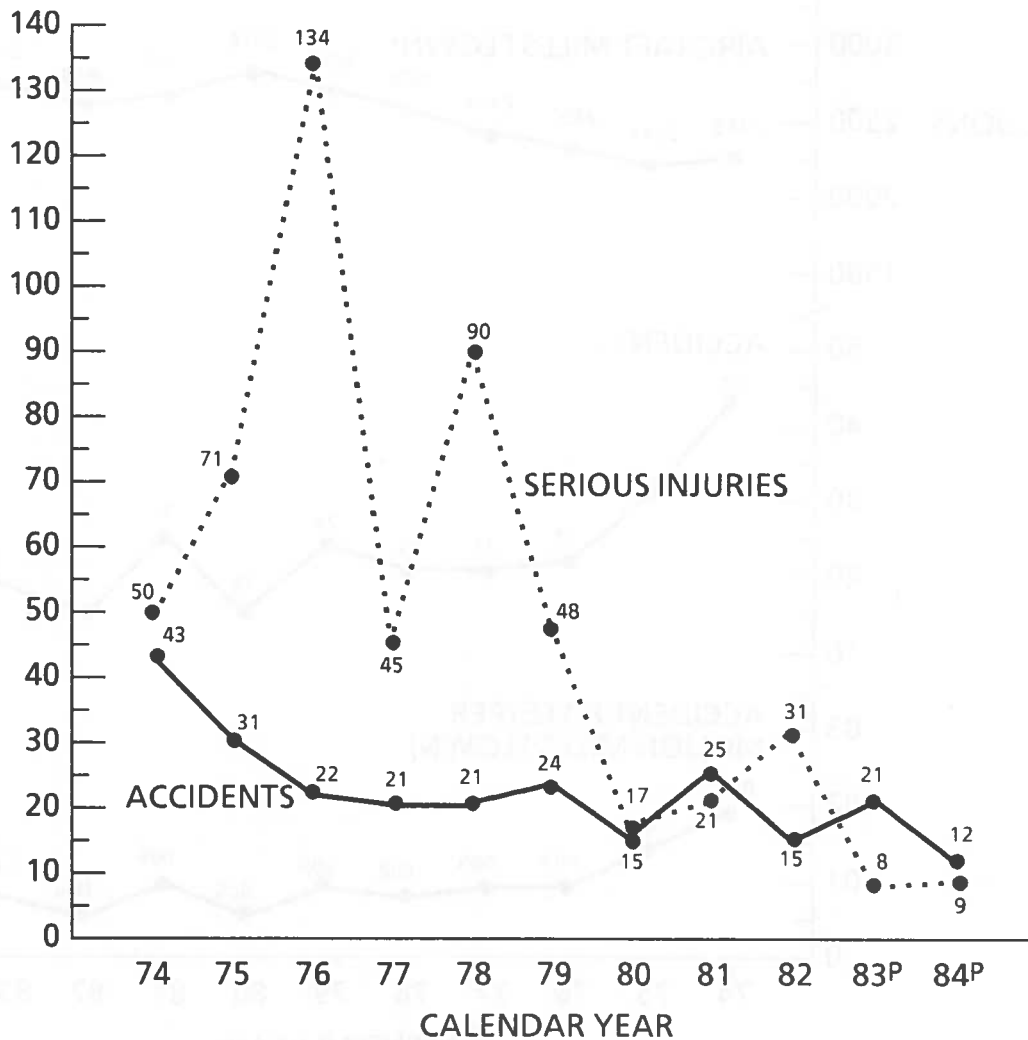
Beginning in January 1982, the National Transportation Safety Board began reporting aviation accident data according to the Federal Aviation Regulations under which the aircraft was operated at the time of an accident. Revenue operations of Air Carriers, Commercial Operators and deregulated All Cargo Carriers, using large aircraft, are conducted under 14 CFR 121. Commuter Air Carriers' (scheduled) and On-Demand Air Taxi Operators (unscheduled) revenue operations (using small aircraft) are conducted under 14 CFR 135. Accidents involving flights not being conducted under either 14 CFR 121 or 14 CFR 135 are grouped by the Safety Board into the "General Aviation" category. It is anticipated that classifying aviation accidents according to the operating rules will better serve aviation safety because they set the minimum levels of such safety-related areas as pilot experience, flight and duty time, and maintenance of aircraft. Further exposure data now obtained from the CAB will be obtainable in less and less detail until the CAB's demise, at which time much of this data will be obtained from the FAA. Therefore, it is appropriate to begin using FAA definitions of such terms as air carriers and general aviation.

AIR CARRIER

- In 1984, a record low total accident rate and a second-lowest fatal accident rate were achieved by U.S. airlines, according to preliminary statistics. Twelve accidents were recorded in scheduled airline service which resulted in one fatal accident. The fatal accident rate in 1984 was the lowest on record except for 1980, which was a fatality-free year for the airlines.
- Commuter carriers had 21 accidents in 1984, seven of them fatal accidents. This produced a rate of 0.78 total accidents in every 100,000 departures -- the rate most often used to measure commuter safety -- slightly higher than the 1983 rate. The corresponding fatal accident rate was 0.26. This was far above the record low 1983 rate of 0.09, but still was the commuters' third lowest fatal accident rate in a decade. Commuter carrier fatalities totalled 46 in 1984 compared with 11 in 1983.
- In 1984, on-demand air taxis recorded 140 accidents, of which 22 were fatal. The resulting rate of 4.21 total accidents in every 100,000 aircraft hours was a 25 percent reduction from 1983, and the rate of 0.66 fatal accidents per 100,000 hours was down 39 percent. Fatalities dropped from 62 in 1983 to 51 in 1984.
- In the fourth quarter of 1984, there were four U.S. air carrier accidents compared with 11 in the same period of 1983. No fatal accidents or fatalities were reported for this period in 1984, but two fatal accidents resulted in 11 fatalities during the fourth quarter of 1983.
- Commuter carriers experienced increases in fatalities, fatal accidents, and total accidents during the fourth quarter of 1984 compared to the same 1983 period; while on-demand air taxis recorded decreases for the comparable periods (see Tables 10 and 11).

CHART 20.

ACCIDENTS AND SERIOUS INJURIES FOR U.S. CARRIERS, OPERATING UNDER 14 CFR 121 ALL SCHEDULED SERVICE (AIRLINES*) 1974 - 1984



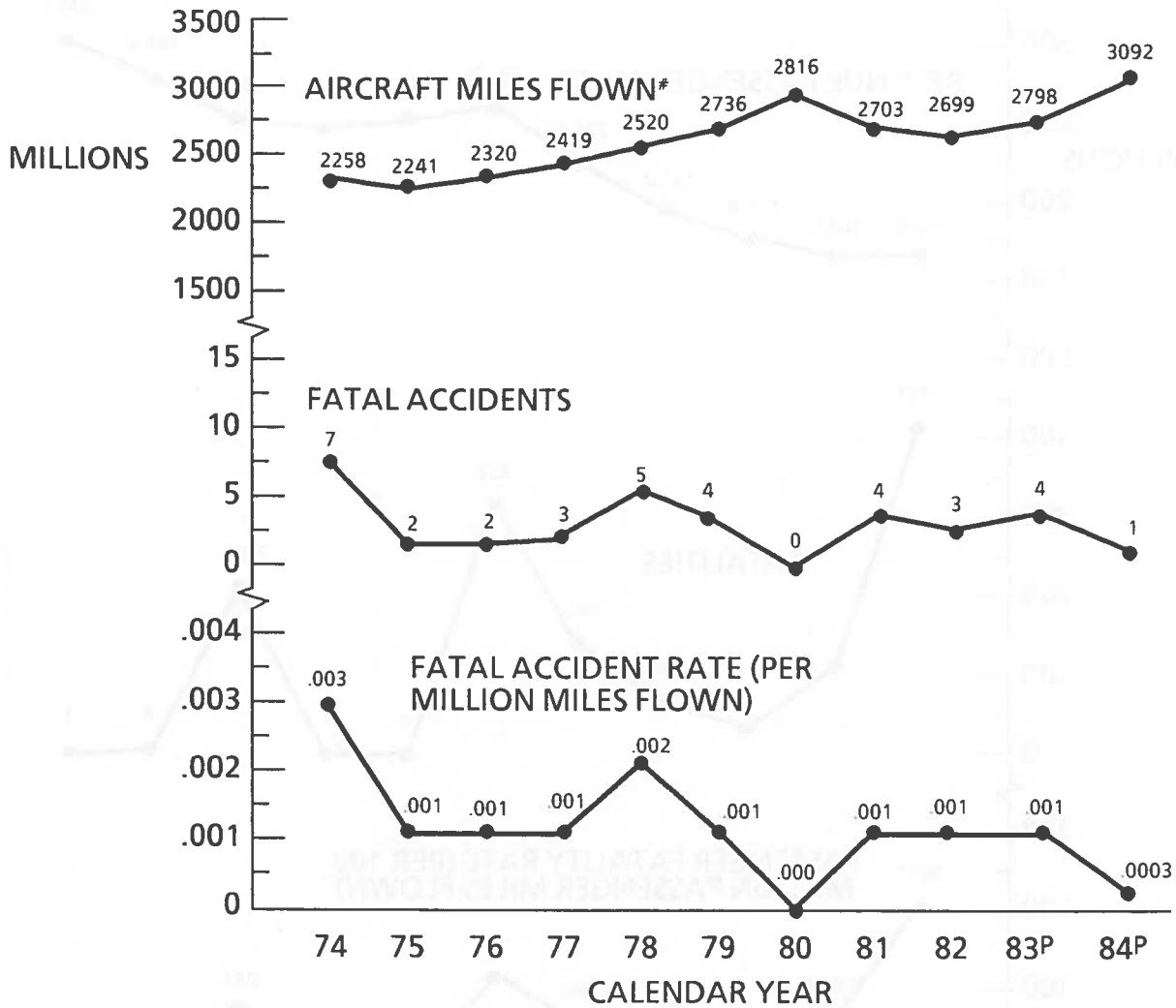
P = Preliminary.

* Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during scheduled 14 CFR 121 operations.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 22.

FATAL ACCIDENT RATES FOR U.S. AIR CARRIERS OPERATING UNDER 14 CFR 121 ALL SCHEDULED SERVICE (AIRLINES*) 1974 - 1984



P = Preliminary.

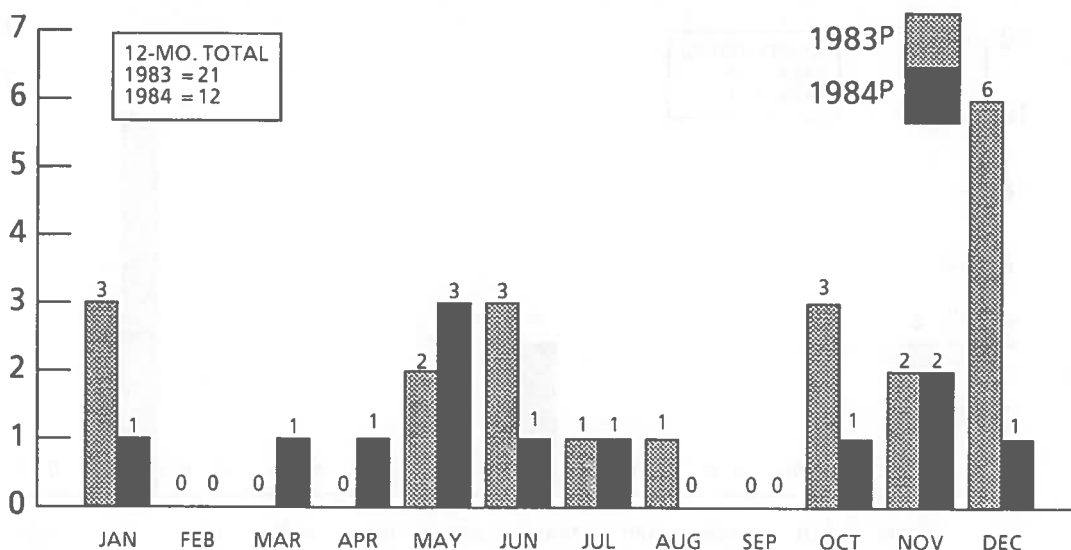
* Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during scheduled 14 CFR 121 operations.

Source of data: CAB.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 24.

U.S. AIR CARRIER ACCIDENTS*, 1983 - 1984



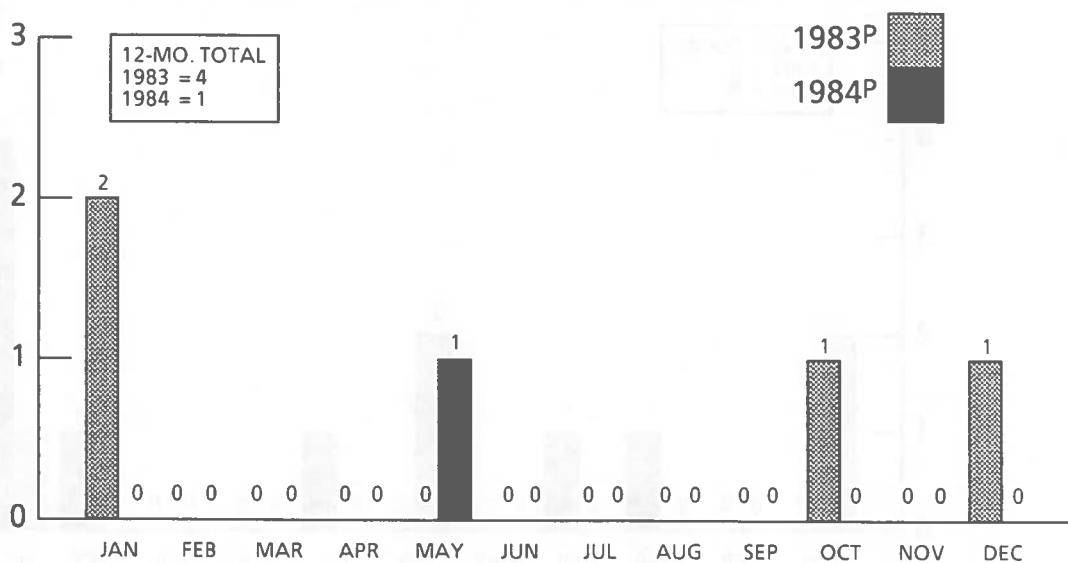
P = Preliminary.

* Large carriers operating under 14 CFR 121, all scheduled operations.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 25.

U.S. AIR CARRIER* FATAL ACCIDENTS, 1983 - 1984



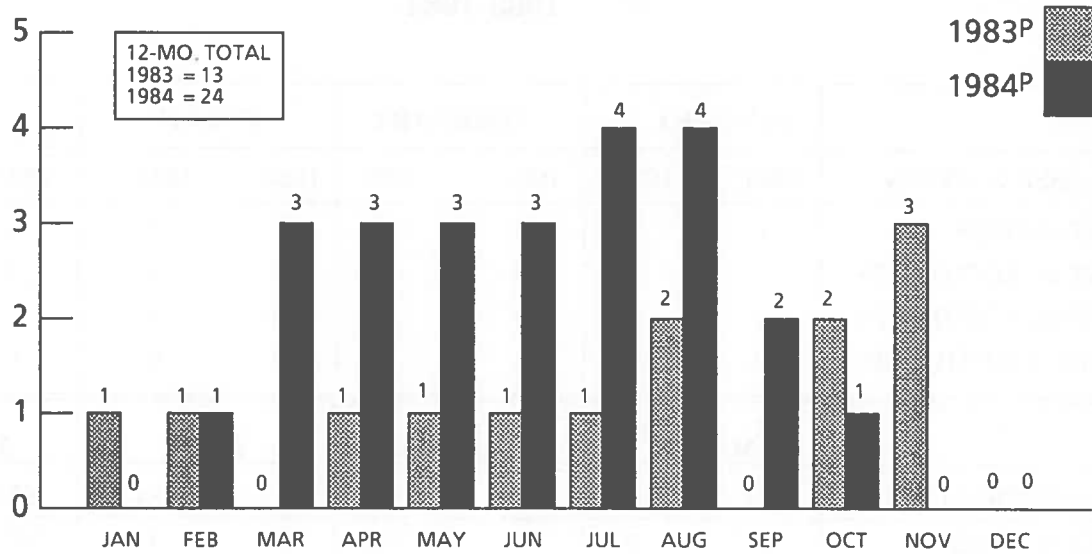
P = Preliminary.

* Large carriers operating under 14 CFR 121, all scheduled operations.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 28.

U.S. CIVIL AVIATION MID-AIR COLLISION ACCIDENTS*, 1983 - 1984



^P = Preliminary.

* Both aircraft airborne, includes General Aviation and Air Carrier.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

TABLE 11.

**ON-DEMAND AIR TAXIS* ACCIDENTS, FATALITIES AND INJURIES
1983-1984**

	JANUARY		FEBRUARY		MARCH		APRIL	
CLASSIFICATION	1983	1984	1983	1984	1983	1984	1983	1984
FATALITIES	4	5	2	1	7	5	0	5
FATAL ACCIDENTS	3	3	1	1	3	2	0	2
TOTAL ACCIDENTS	13	10	5	9	16	10	5	6
SERIOUS INJURIES	1	2	0	2	3	5	0	1

	MAY		JUNE		JULY		AUGUST	
CLASSIFICATION	1983	1984	1983	1984	1983	1984	1983	1984
FATALITIES	0	2	9	7	2	17	3	3
FATAL ACCIDENTS	0	1	4	3	1	6	2	1
TOTAL ACCIDENTS	11	9	11	18	13	19	13	10
SERIOUS INJURIES	6	2	3	2	5	7	1	1

	SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
CLASSIFICATION	1983	1984	1983	1984	1983	1984	1983	1984
FATALITIES	4	0	3	3	18	0	10	3
FATAL ACCIDENTS	2	0	2	1	5	0	5	2
TOTAL ACCIDENTS	11	13	9	13	13	9	23	14
SERIOUS INJURIES	6	9	1	3	1	6	2	1

	FOURTH QUARTER			12-MONTH TOTAL		
CLASSIFICATION	1983	1984	% Chg	1983	1984	% Chg
FATALITIES	31	6	-80.6	62	51	-17.7
FATAL ACCIDENTS	12	3	-75.0	28	22	-21.4
TOTAL ACCIDENTS	45	36	-20.0	143	140	-2.1
SERIOUS INJURIES	4	10	+150.0	29	41	+41.4

NOTE: 1983 and 1984 Data are preliminary.
* Non-scheduled service operating under 14 CFR 135.

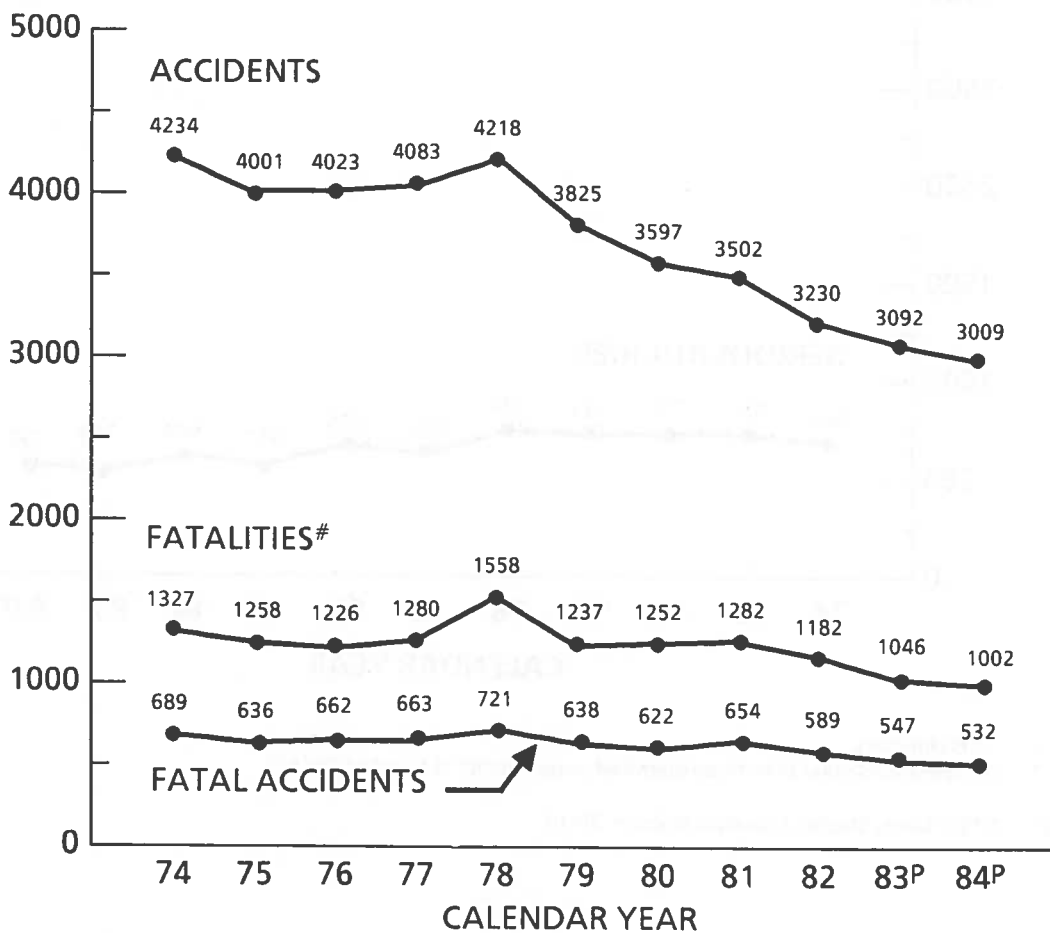
SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

GENERAL AVIATION

- In 1984, 3,009 General Aviation accidents and 532 fatal accidents occurred compared with 3,092 accidents and 547 fatal accidents in 1983. The total and fatal accident rates for every 100,000 aircraft hours were 9.9 and 1.7, respectively -- both approximately 2 percent lower than their 1983 rates.
- The number of General Aviation fatalities declined from 1,046 in 1983 to 1,002 in 1984, which represents a 4.2 percent reduction.
- In the fourth quarter of 1984, General Aviation accidents declined 3 percent when compared to the same 1983 period -- from 599 to 580, while the number of fatal accidents remained constant. However, there was a slight increase in the number of fatalities during the quarter -- fatalities rose to 259 from 252.

CHART 29.

**U.S. GENERAL AVIATION* ACCIDENTS, FATALITIES,
AND FATAL ACCIDENTS, 1974 - 1984**



P = Preliminary.

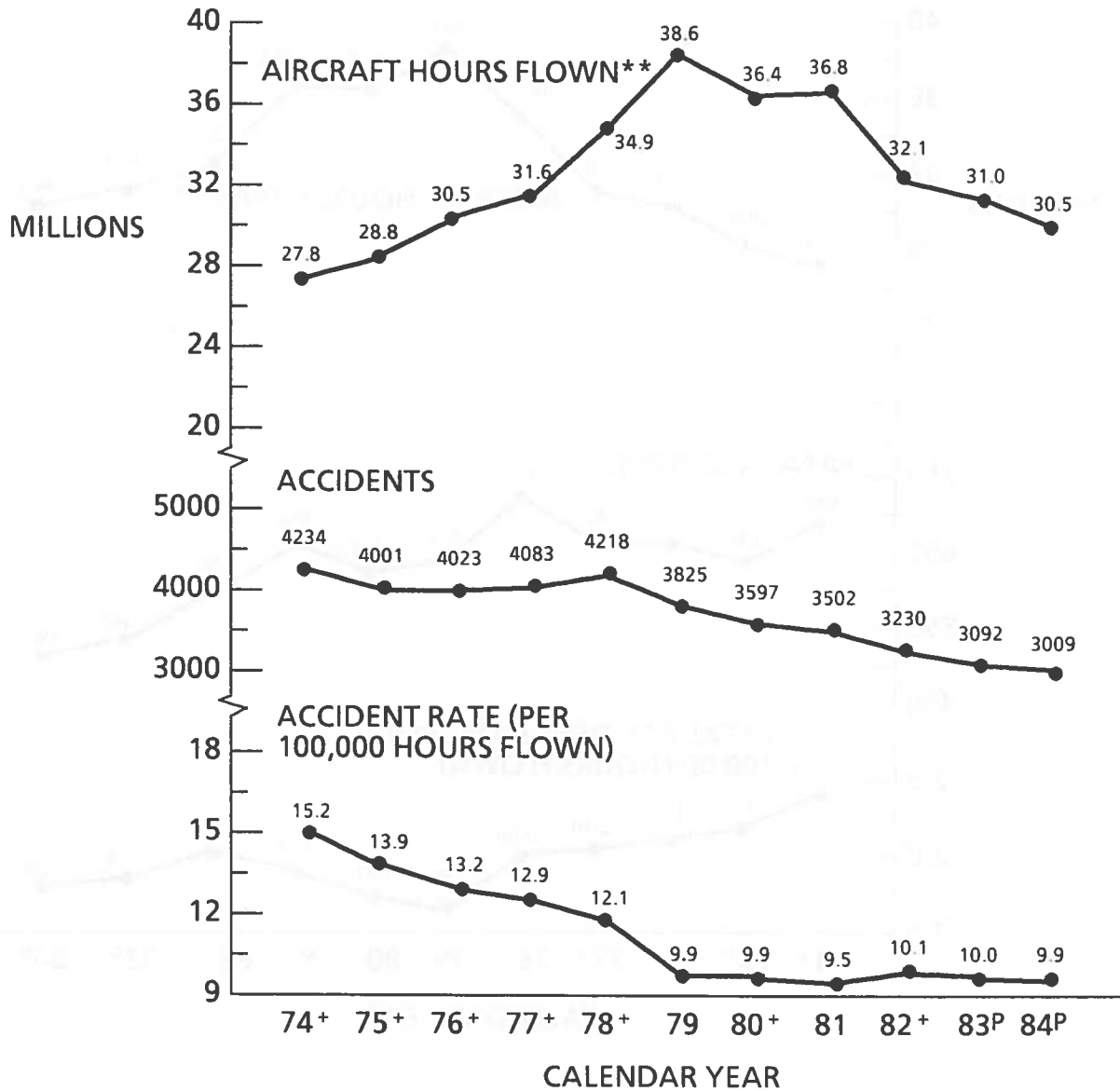
* All operations other than those operated under 14 CFR 121 and 14 CFR 135

Includes air carrier fatalities when in collision with General Aviation aircraft.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 31.

U.S. GENERAL AVIATION* ACCIDENTS AND RATES 1974-1984



P = Preliminary.

* All operations other than those operated under 14 CFR 121 and 14 CFR 135.

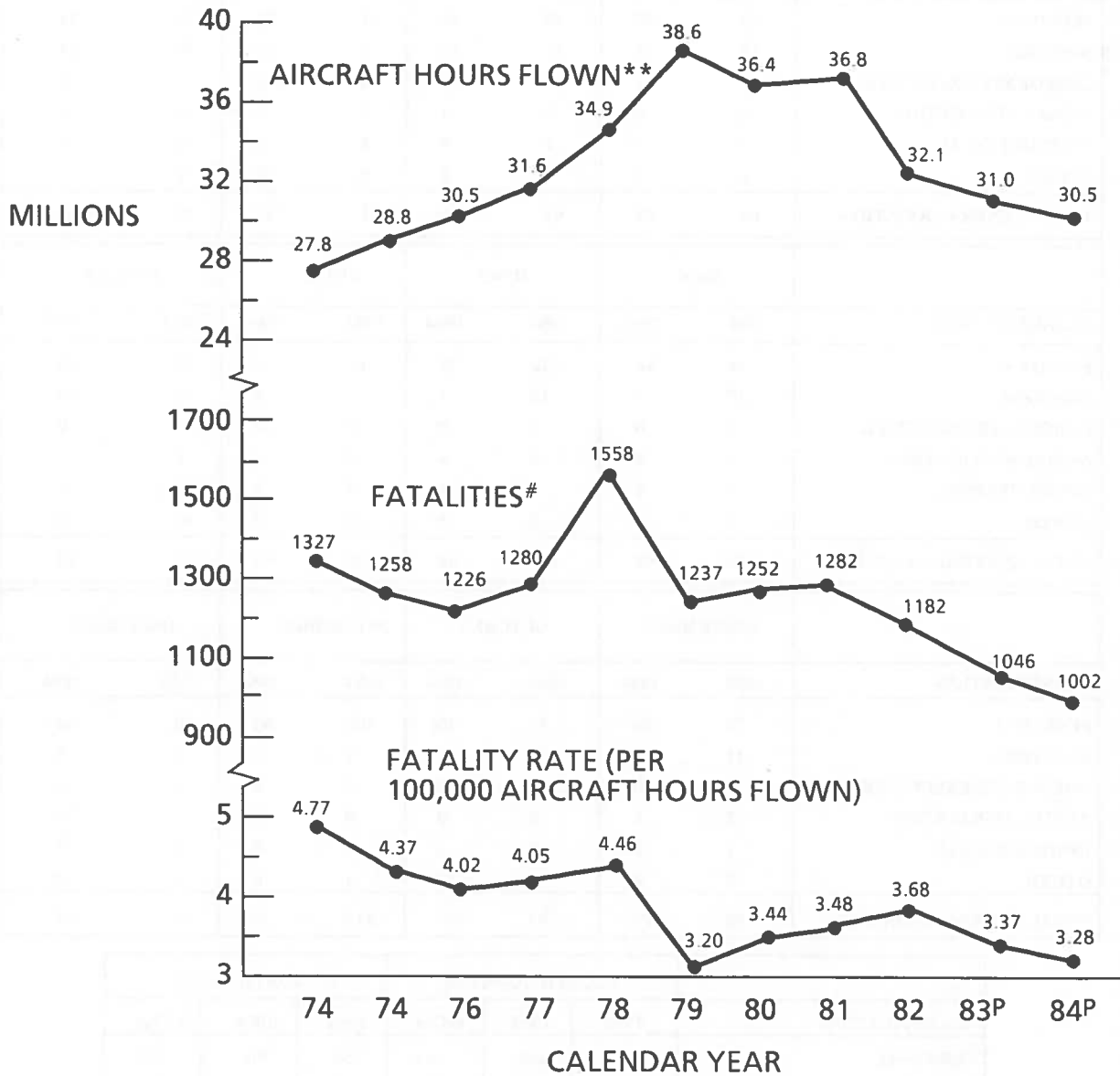
** Source of estimate: FAA.

+ Suicide/sabotage accidents included in all computations except rates (1974 - 2, 1975 - 2, 1976 - 4, 1977 - 1, 1978 - 2, 1980 - 1, 1982 - 3).

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 33.

U.S. GENERAL AVIATION* FATALITIES AND RATES 1974 - 1984



P = Preliminary.

* All operations other than those operated under 14 CFR 121 and 14 CFR 135.

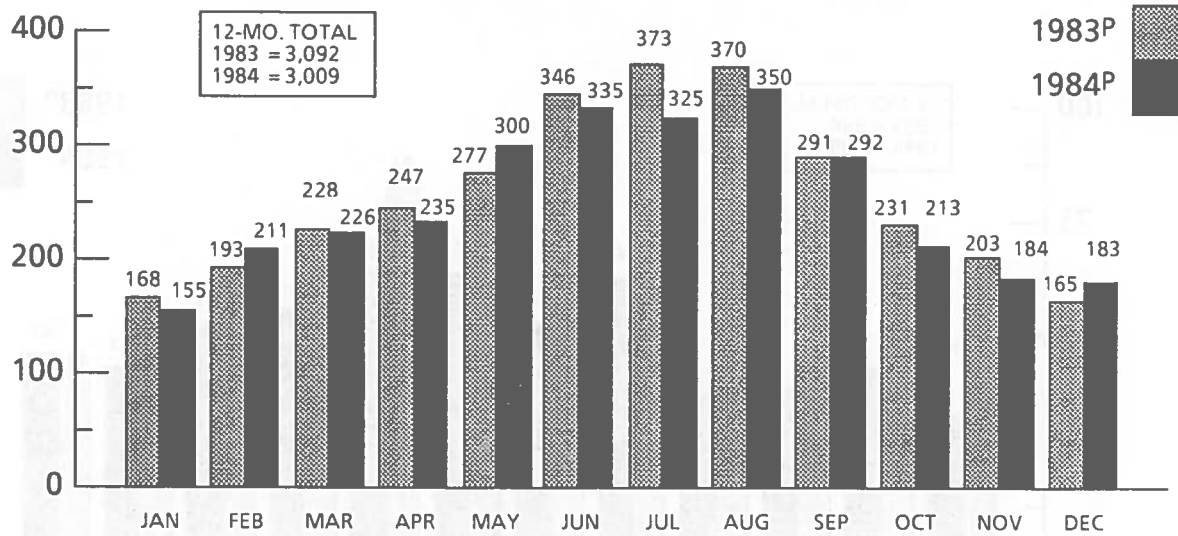
** Source of estimate: FAA.

* Includes air carrier fatalities when in collision with General Aviation aircraft.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

CHART 34.

U.S. GENERAL AVIATION* ACCIDENTS, 1983 - 1984



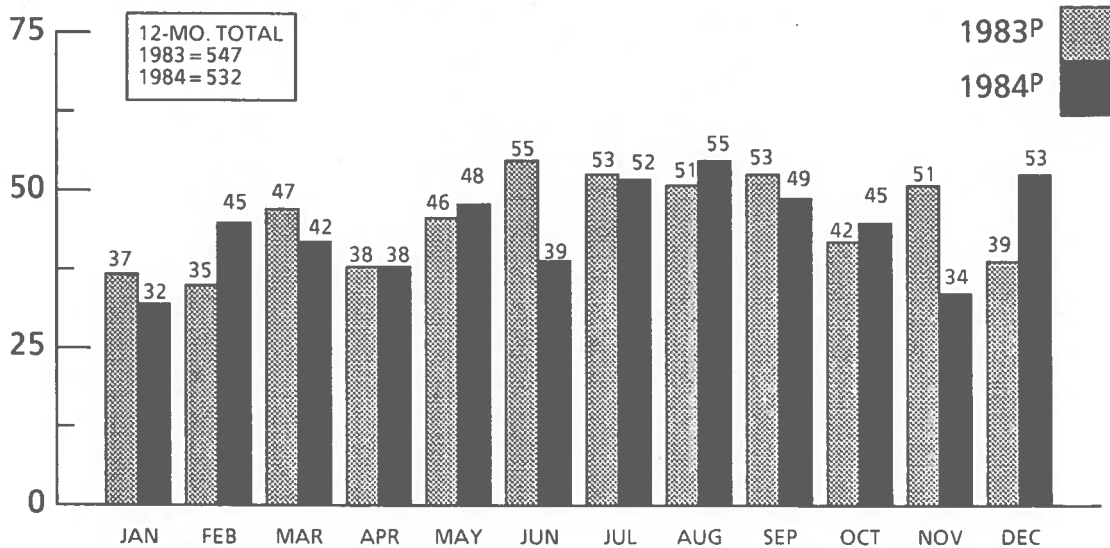
P = Preliminary.

* All operations other than those operations under 14 CFR 121 and 14 CFR 135.

SOURCE: NTSB, Safety Study & Analysis Division, SP-10.

CHART 35.

U.S. GENERAL AVIATION* FATAL ACCIDENTS, 1983 - 1984



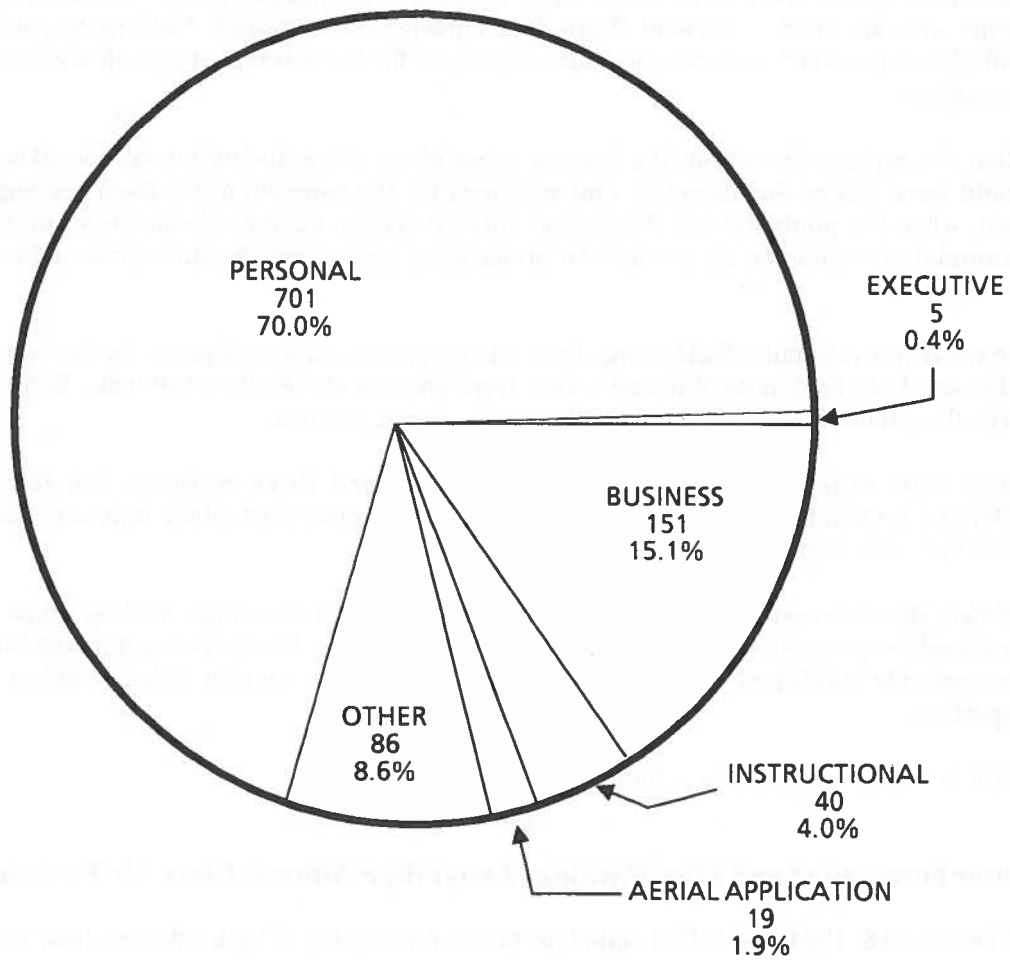
P = Preliminary.

* All operations other than those operations under 14 CFR 121 and 14 CFR 135.

SOURCE: NTSB, Safety Study & Analysis Division, SP-10.

CHART 37.

GENERAL AVIATION FATALITIES BY TYPE FLYING 1984



TOTAL FATALITIES: 1002

NOTE: 1984 data are preliminary.

SOURCE: NTSB, Safety Studies & Analysis Division, SP-10.

seriously, even though the captain had called for seat belts to be fastened about five minutes before the encounter. There were 160 persons aboard.

Three passenger service carts were hurled to the cabin ceiling, including one that a flight attendant had thought she had just secured to the floor. Three cabin crewmembers who were not seated and belted were thrown into the air; one incurred a serious back injury. Most of the injuries were in the rear cabin, where turbulence forces were greatest. The flight continued to its Toronto destination.

Safety Board investigation showed that the flight from Trinidad was less than 20 miles from thunderstorms when the accident occurred. The flight crew had expected to fly safely over the thunderstorms. There was no specific forecast of the clear air turbulence, and none would have been anticipated on the basis now used by the National Weather Service (NWS) for such forecasts.

The Board found that "in view of recent research and investigation experience, the criteria used by NWS is not entirely adequate." The Board said forecasts could be improved "by considering the interaction between jet stream velocity winds and thunderstorms which have the potential to produce clear air turbulence downstream of cumulonimbus clouds."

At the time of the accident, FAA's Jacksonville Air Route Traffic Control Center, which was controlling the Air Canada flight, was providing a Hazardous Inflight Weather Advisory Service (HIWAS). This places recorded hazardous weather information on a local navigation aid radio frequency as a continuous source of information for pilots, and as a means of lessening controller workloads.

HIWAS began a test program in the Jacksonville and Miami Centers in September 1981. In July 1983, it was commissioned there, and was to be inaugurated later at other centers nationwide. After the accident, however, Board investigators found that the Air Canada flight crew was unaware of it, as were all but one of 130 airline pilots and chief pilots, military and FAA pilots, and airline flight and station managers interviewed by the Board.

Nine of the airline pilots had been in the same sector as the Air Canada L-1011 at the time of the accident. All of those interviewed said they expected they would receive reports of hazardous weather from controllers once they were airborne, and did not know that under HIWAS, controller handbook requirements for broadcast of significant meteorological (SIGMET) alerts to pilots had been suspended.

The Safety Board's recommendations called for forecasters to be alert for mingling of jetstream or strong upper altitude winds with lines of developing or developed thunderstorms. The Board noted that the Air Force since 1974 has warned its flightcrews of turbulence 15 to 30 miles downwind of thunderstorms, and Northwest Airlines urges its pilots to stay one mile for each knot of wind in the lee of thunderstorm tops.

FAA's HIWAS concept "has much merit," the Board concluded, but must become known by all users of the airspace, including foreign flag carriers. The Board urged FAA to postpone expansion of the system until it employs a center communications frequency with remote antennas, not a single navigation station, thus significantly expanding the area within which pilots could receive latest recorded severe weather information.

The Board also suggested that Canadian authorities act to solve Air Canada's passenger service cart lock-down problem shown by the turbulence accident investigation.

SOURCE: NTSB News Digest, Vol. 3, No. 6, p. 1.

The physiological and psychological factors cited in the Board's probable cause included the fact that tests showed the captain to have been a recent user of marijuana. He also had been exposed to recent stress-producing situations, including a job change, the purchase of a new home, and his wife's expected birth of a child. Toxicological tests also indicated recent inhalation and possible use of marijuana by the co-pilot and his use of an over-the-counter drug which it is recommended not be used while flying. As to the use of marijuana, the Board said it was unable to draw a firm conclusion as to when the marijuana was used or whether, or not, marijuana was smoked on the airplane during the accident flight.

SOURCE: NTSB News Digest, Vol. 3, No. 5, p. 1.

SAFETY PROGRAM HIGHLIGHTS

National Air Transportation Inspection Program

The FAA has completed an indepth National Air Transportation Inspection (NATI) program which included the inspections of all air carriers operating under FAR Part 121 and commuter air carriers operating under FAR 135. The NATI program was conducted in two phases. Phase I required a generalized inspection of all Part 121 and 135 operations for 90 days. Phase II targeted individual operators which were identified in Phase I as those carriers which failed to meet FAA safety standards. Nearly 13,000 inspections were performed under Phase I and about 40 air carriers were identified as requiring Phase II inspection.

SOURCE: FAA, Safety Analysis Division, ASF-100.

Flight Service Station "Privatization" Study

The FAA is undertaking a study of the possible "privatization" of certain Flight Service Station functions in response to the Grace Commission proposed improvements in cost and efficiency of government operations. This study will address the benefits and cost of each function currently performed by the FAA versus the relative risk, benefits, and cost of those functions proposed to be performed by the private sector. This study is scheduled to be completed by May 30, 1985.

SOURCE: FAA, Safety Analysis Division, ASF-100.

Near Mid-Air Collisions

The FAA is developing a new program for the reporting and classification of near mid-air collisions. The new system would include all unplanned events in which aircraft come within 500 feet of each other during an operational error, pilot deviation, or events in which a report is voluntarily submitted by a crewmember. This new system would more completely address many important aspects of the collision hazard in the National Airspace System.

SOURCE: FAA, Safety Analysis Division, ASF-100.

MARINE

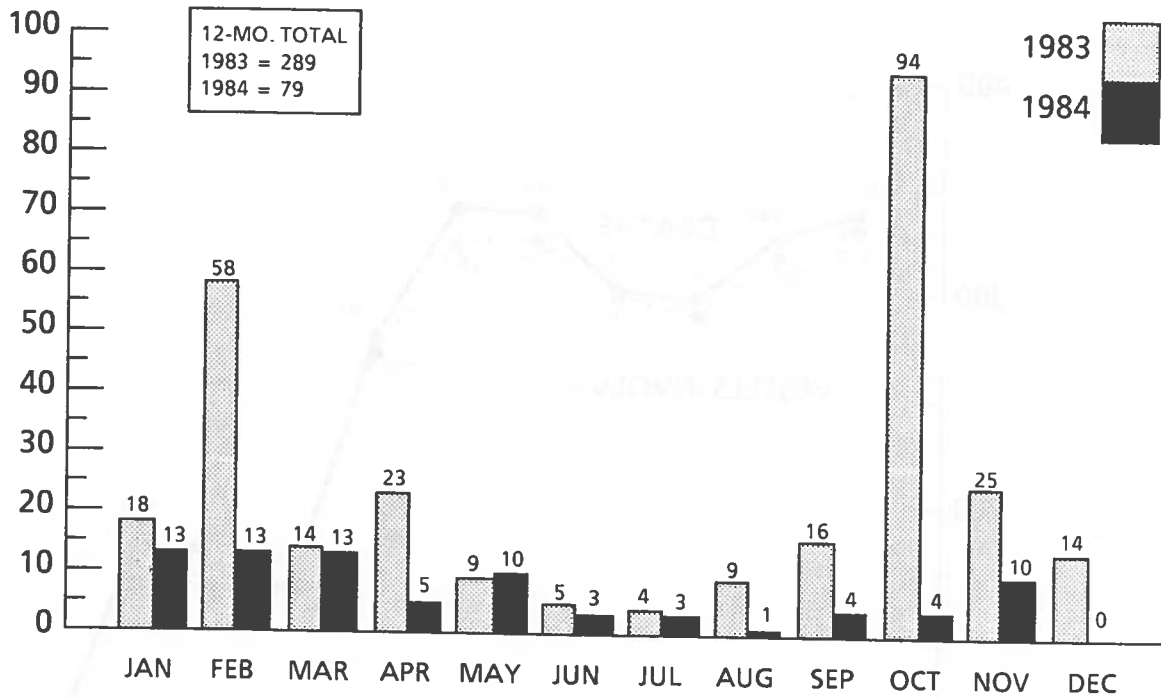
WATERBORNE

- There were two losses of major, ocean-going U.S. merchant vessels during 1984. The tankship **AMERICAN EAGLE** (20,520 G.T.) sank in the Gulf of Mexico on February 27, 1984, after an explosion in the cargo tank area. As a result of this casualty, five crewmen lost their lives, two remain missing and are presumed dead, and nine crewmen were injured. On October 31, 1984, the tankship **PUERTO RICAN** (20,295 G.T.) suffered an explosion in the cargo tank area while off the California coast. As a result of the explosion, the ship broke in two and the after section of the vessel later sank.
- Approximately 94 percent of all U.S. vessel losses were uninspected vessels. Fishing vessels accounted for 75 percent of the total number of losses. These proportions are not expected to change substantially when 1984 data are complete.
- Preliminary statistics for 1984 show that 79 fatalities resulted from vessel casualties. When 1984 casualty data are complete, total fatalities are expected to be below the number of fatalities that occurred in 1983.
- Preliminary 1984 data indicate that an additional 65 fatalities occurred on U.S. vessels due to accidents. Of these 18 (28 percent) resulted from falls overboard.



CHART 39.

WATERBORNE FATALITIES 1983-1984

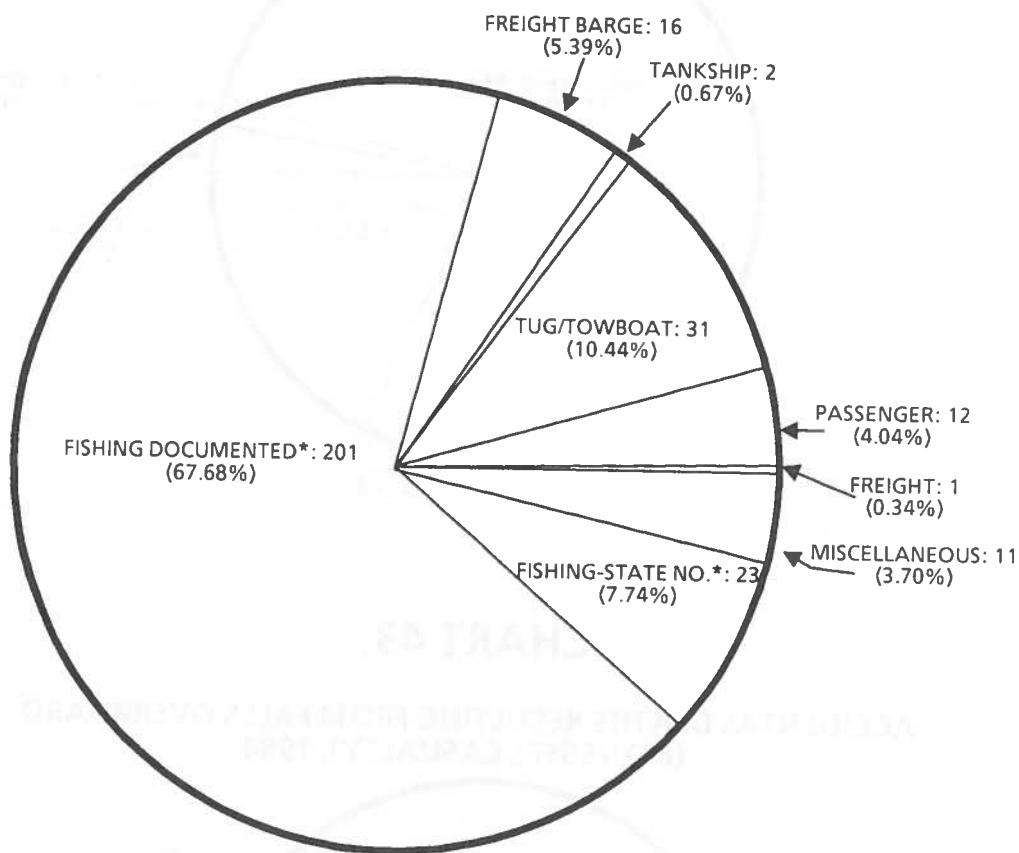


NOTE: 1983 and 1984 data are incomplete.

SOURCE: USCG, Marine Investigation Division, G-MMI.

CHART 41.

U.S. VESSELS TOTALLY LOST IN 1984



TOTAL VESSELS LOST: 297

* All commercial fishing vessels over 5 net tons are documented by the Coast Guard; if less than 5 net tons, commercial fishing vessels are registered in the state.

SOURCE: USCG, Marine Safety Evaluation Branch, G-MMI-3.

Data supplied as of 02/28/85.

MODAL SAFETY HAZARDS

F/V AMAZING GRACE

On November 14, 1984, the F/V AMAZING GRACE notified another fishing vessel that they had excessive water in the engine room from a wave which broke over their bow. This was the last reported communication with the AMAZING GRACE located approximately 60 miles offshore east-southeast of Cape May, New Jersey. The vessel had departed Hampton, Virginia, on November 5, 1984, on a 17-day fishing trip. The vessel owner reported that there were nine persons onboard.

SOURCE: USCG, Marine Safety Evaluation Branch, G-MMI-3.

Tankship PUERTO RICAN

On October 31, 1984, the tankship PUERTO RICAN was outbound from San Francisco with a cargo of various petrochemicals when an explosion occurred forward of the pilothouse. A section of the deck was blown back. Listing heavily, the vessel was towed out to sea. It later broke in two and the after section sank. As a result of this casualty, one of 29 persons onboard is missing and two others suffered burns.

SOURCE: USCG, Marine Safety Evaluation Branch, G-MMI-3.

More Sophisticated Radar on Passenger Vessels Plying Extended Coastal Routes Required

The National Transportation Safety Board urged the Coast Guard on August 7, 1984, to require more sophisticated radar for accurate navigation, and for tracking of other vessels, on certain passenger vessels plying extended routes in the nation's coastal waters.

The Board's recommendation was incorporated in a report on the collision of the 137-foot passenger vessel YANKEE and the 435-foot Liberian freighter HARBEL TAPPER in heavy fog on Rhode Island Sound July 2, 1983.

The Providence-Block Island ferry YANKEE, northeast-bound on its scheduled daily return trip from Block Island, collided with the HARBEL TAPPER three miles east of Point Judith, R.I. The freighter was southbound, en route from Fall River, MA to Newport News, VA.

Two of the ferry's 139 adult passengers were injured, although neither seriously. Both vessels were able to leave the accident scene under their own power. Total damage was \$51,000.

The Safety Board's investigation showed that the collision was inevitable; neither vessel slowed as they approached each other in the fog. The collision occurred in waters normally within a designated outbound traffic lane for ships southbound from Narraganset Bay into Rhode Island Sound, but the traffic separation scheme establishing the outbound and inbound lanes had been suspended because of trials for the America's Cup races in Rhode Island Sound.

The Safety Board determined that the probable cause of the accident was an "improper turn to the left" by the master of the freighter just before the collision.

Contributing factors, the Board held, were both masters maintaining "unsafe speed in fog," their failure to post proper bow lookouts and otherwise to comply with navigation rules, and their failure to

New Videotapes Show How To Deal With Hypothermia

Hypothermia is a significant factor in many outdoor injuries, including drownings. This condition, a dangerous lowering of the body core temperature, is often misdiagnosed and remains untreated.

Two videotape programs recently produced in connection with the Sea Grant Marine Advisory Program at the University of Maine examine the problem of hypothermia.

One program, "Hypothermia: Think Survival, Not Rescue," focuses on ways to survive sudden immersion in cold water. Key elements in the presentation are the victim's attitude and proper use of lifesaving gear such as survival suits, rafts, and distress signals.

The other program, "Hypothermia: The Chill That Not Need Kill," is designed primarily for those responding to accidents where hypothermia may be part of the picture. Emergency medical personnel, sheriff's patrols, firemen, ski patrols, and others who need to recognize and treat this condition might find this videotape a useful training tool.

Additional information about the cost and availability of the videotapes can be obtained from the Sea Grant College Program, Communications Office, 30 Coburn Hall, University of Maine, Orono, Maine 04469; tel.: (207) 581-1440.

SOURCE: Proceedings of Marine Safety Council, April 1984, p. 110.

RECREATIONAL BOATING

- The number of recreational boating fatalities and the fatality rate per 100,000 estimated boats were lower in 1984 than in any year since records have been kept. The number of fatalities decreased 14.3 percent to 1,063 from 1,241 in 1983. The previous low was 1,114 in 1962. The fatality rate fell to 6.8 fatalities per 100,000 estimated boats. Reasons for the decrease in fatalities, which occurred despite an increase in the number of accidents reported, are not readily apparent. Analyses will be performed to determine probable causes.
- The number of reported injuries fell by 7.0 percent from the record of 2,913 set in 1983 to 2,709, which is higher than the number of injuries in 1982.
- Non-fatal, non-injury accident reports increased by 14 percent, resulting in a record amount of reported property damage, \$19,193,000.
- The number of accidents and injuries reported in the fourth quarter of 1984 increased when compared to the fourth quarter of 1983 -- from 463 to 519 and from 155 to 194, respectively. However, the number of recreational boating fatalities decreased from 143 in the fourth quarter of 1983 to 134 in the same 1984 period.

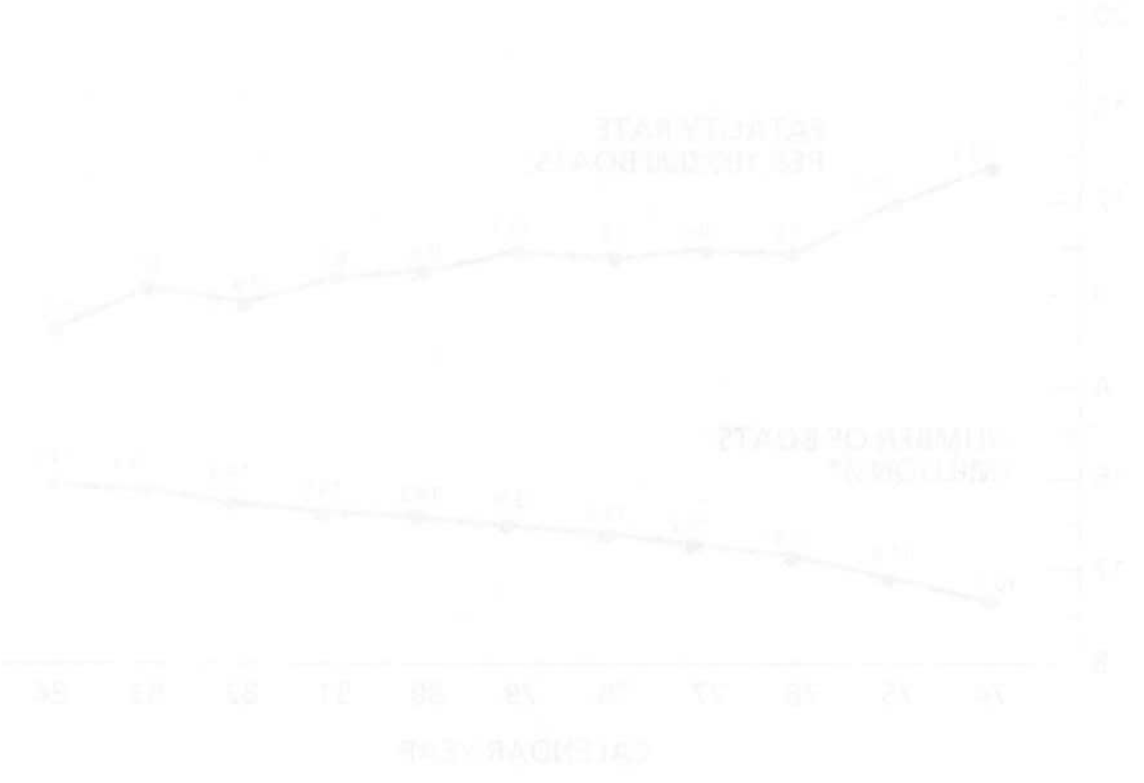
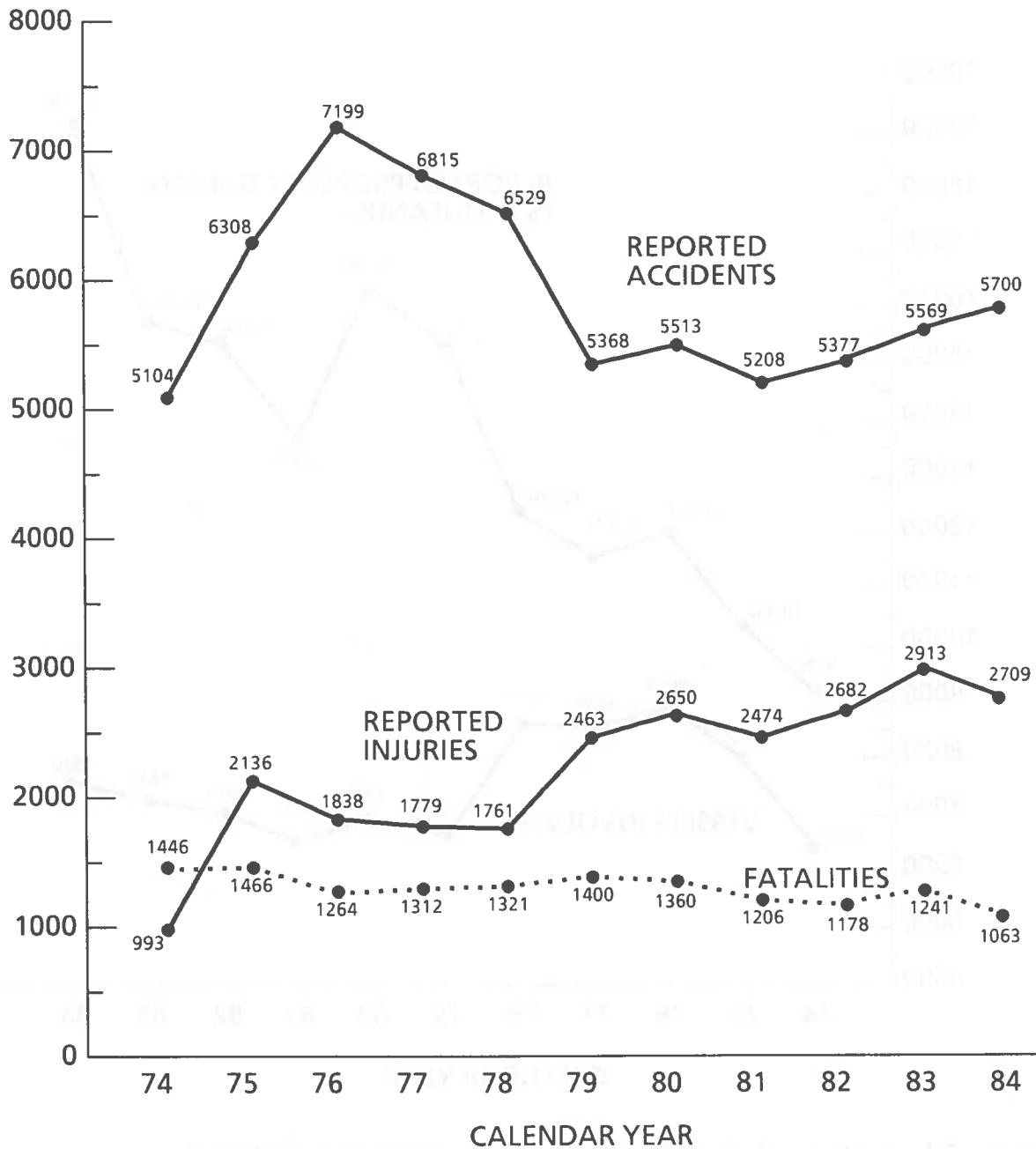


CHART 45.

RECREATIONAL BOATING FATALITIES, INJURIES, AND ACCIDENTS, 1974 - 1984



NOTE: Only a small fraction of property damages and non-fatal accidents are reported to the Coast Guard

SOURCE: BAR File, USCG, Office of Boating, Public, and Consumer Affairs, G-BP-1.

CHART 47.

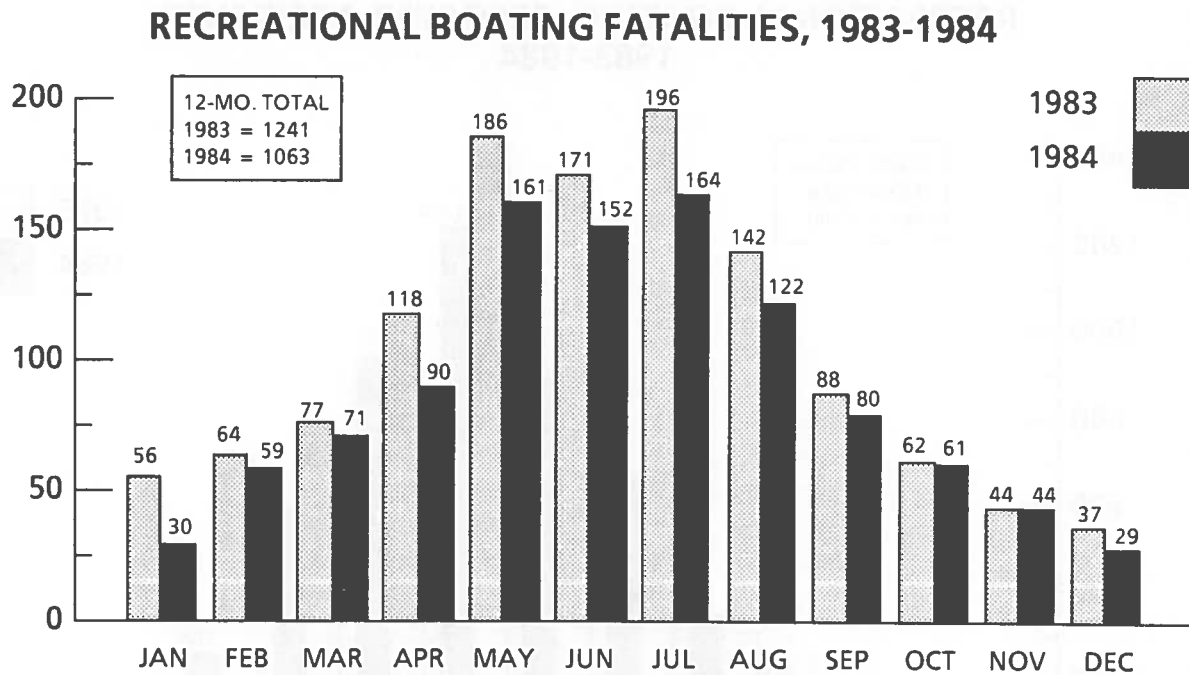
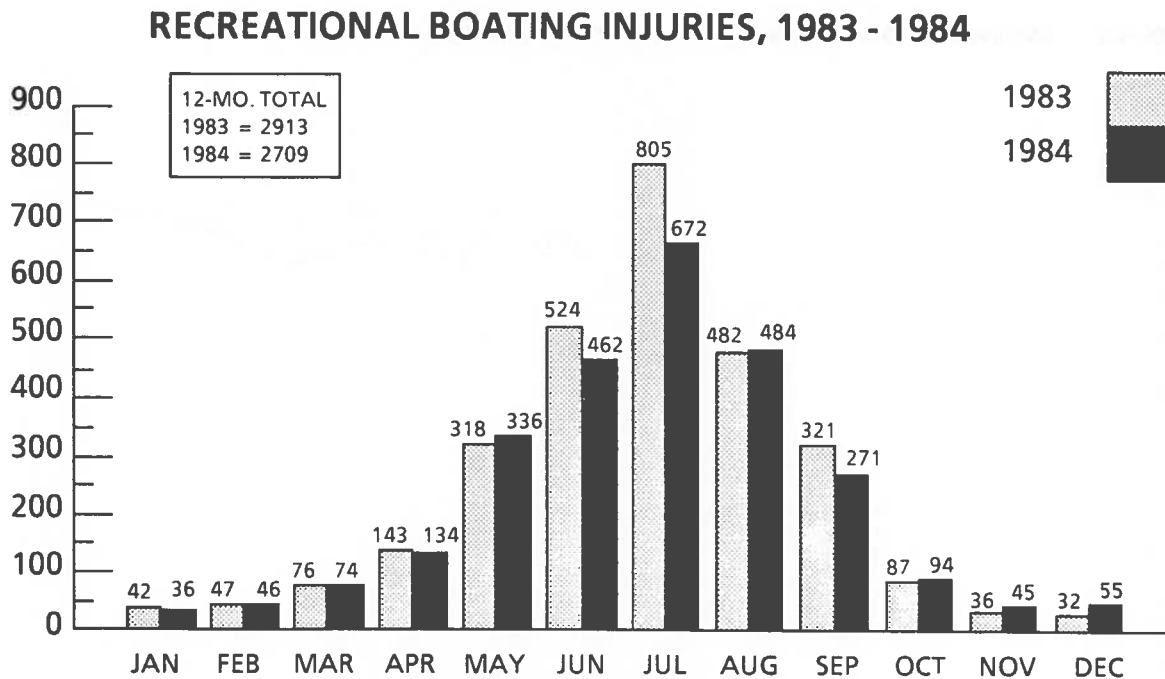


CHART 48.



SOURCE: BAR File, USCG, Office of Boating, Public, and Consumer Affairs, G-BP-1

MODAL SAFETY HAZARDS

Alcohol and Boating

On September 1, 1984, a 43-year-old man died while on a fishing excursion with his brother. The brother said that the victim had been sitting with his legs hanging overboard with the boat drifting when he apparently slipped over the side of the boat. He saw the victim in the water and was able to maneuver the boat in his direction. After lifting him into the boat, he motored to shore where he telephoned for help.

The ambulance crew that responded to the call reported that the victim had no pulse or respiration so they applied CPR. However, the victim was pronounced dead on arrival at the local hospital.

The coroner ruled that the victim died as a result of drowning. He apparently fell overboard because he was intoxicated. There was a good chance that he might have been saved if he had been wearing a Personal Flotation Device (PFD). A blood and urine test was conducted to determine if drugs and alcohol were involved. No drugs were found, but his blood alcohol level was 0.14 percent. In most states a person is considered intoxicated at a level of 0.10 percent.

SOURCE: USCG, Office of Boating, Public, & Consumer Affairs, G-BP.

Boating and Excessive Speed at Night

The large group had been celebrating from 9 p.m. on Saturday at a harbor restaurant and bar until closing at 2 a.m. The group then decided to go for a nighttime cruise on a boat owned by one of them. As they were returning from their cruise, the 20-foot boat slammed into a large unlighted mooring buoy. The hull broke apart on impact with the huge drum-shaped concrete buoy, killing five people and injuring four others in what authorities called the worst boating accident ever to occur in that State.

The accident report stated that four passengers were apparently trapped on board as the vessel sank. The fifth body was found underneath the sunken wreckage. None of the dead was wearing a PFD. Rescuers, alerted by a survivor who managed to reach shore, found the remaining three survivors clinging to debris. Investigators at the scene reported that the craft may have been traveling at a speed in excess of 20 knots, more than four times the posted speed limit of five knots. The role that alcohol may have played in this tragedy is being investigated.

SOURCE: USCG, Office of Boating, Public, & Consumer Affairs, G-BP.

Personal Flotation Devices

Many boating fatalities could be avoided if people simply used personal flotation devices (PFDs). Although victims may be only a few feet from safety, cold, shock, and panic too often take their toll, and too many individuals who fall in disappear from view and are never seen again alive. Wearing a PFD can mean the difference between life and death. Two examples of accidents that illustrate this are given below.

- While duck hunting, two men decided to retrieve their duck decoys when the weather suddenly changed -- it became cold and windy, the visibility decreased, and the river became choppy. A wave came over the bow of their skiff, and it sank several feet below the surface of the water. The

The Coast Guard Auxiliary has printed a card for distribution to the public that relates alcohol consumption to an individual's impairment level. The Auxiliary is also planning to incorporate information concerning the effects of alcohol on boat operators into its boating education courses for the public.

The Coast Guard is contracting for research to acquire data on the effects of alcohol on boating safety, to determine the availability and reliability of existing relevant data, and to propose specific research tasks to obtain missing data. The objective is to use the data obtained to structure a well-coordinated corrective program to reduce boating accidents and fatalities involving alcohol abuse.

SOURCE: USCG, Office of Boating, Public, & Consumer Affairs, G-BP.

Requirements for Recreational Boats

The Boating Education Branch of the Office of Boating, Public, and Consumer Affairs is producing a movie which will explain the regulations for safe recreational boating to the public. This comprehensive update will include changes in safety regulations during the last five years. The new movie will first be sent to Coast Guard units, Coast Guard Auxiliary units, and boating law administrations in each of the States. After the initial distribution, the movie will be available to the public on sale through the National Audio Visual Center.

This film will cover Federal equipment carriage requirements and several safe boating tips. These topics should help reduce accidents and fatalities if the information is heeded. Loss of stability in strong current, white water, and rapids was the leading cause of fatalities in 1983, followed closely by operator inattention or carelessness. Seamanship and recognition of dangerous waters are covered in the movie. Overloading was the third leading cause of fatalities in 1983. Regulations require a capacity plate to be placed near the operator's station on recreational boats, and this film will emphasize the importance of heeding its precautionary message.

SOURCE: USCG, Office of Boating, Public, & Consumer Affairs, G-BP.

Federal and State Cooperation

The cooperation between the Coast Guard and the States necessary to the success of the National Recreational Boating Safety Program, continued this past year as it has for many years in pursuit of mutual safety objectives. Provisions of the Deficit Reduction Act of 1984 re-authorized a recreational boating safety financial assistance program which derives its funding from Federal motorboat fuel taxes. Congress appropriated \$13.6 million from the Boat Safety Account of the Aquatic Resources Trust Fund in fiscal year 1985 for State recreational boating safety programs; \$12.5 million had been appropriated in fiscal year 1984. The Coast Guard administers the funding. In order to be eligible for funding, State recreational boating safety programs must include adequate education and enforcement activities, marine casualty reporting and vessel numbering systems, and a cooperative boating safety assistance program with the Coast Guard. Fifty-five of fifty-seven States and U.S. territories and possessions are participating in the assistance program.

SOURCE: USCG, Office of Boating, Public, & Consumer Affairs, G-BP.

The Coast Guard expects the impact of these changes to be minimal due to the small number of recall campaigns conducted for boats and motors with substantial risk defects.

SOURCE: USCG Boating Safety Circular 60, January 1985, p. 3.

MATERIALS TRANSPORT

PIPELINES

- Fatalities resulting from incidents involving pipelines transporting natural gas increased slightly, from eight in the fourth quarter of 1983 to 10 in the fourth quarter of 1984. No liquid pipeline fatalities were reported in the fourth quarter of 1983 or 1984. There was a significant increase in gas pipeline fatalities -- from 12 to 35 -- for the entire year when compared to 1983; however, liquid pipeline fatalities decreased from six in 1983 to zero in 1984.
- The number of gas pipeline leaks/failures and injuries decreased during the fourth quarter and for the entire year. During the fourth quarter of 1984, there were 97 leaks/incidents and 70 injuries compared to 447 leaks/failures and 86 injuries in the same period of 1983. Gas Pipeline leaks/failures decreased to 967 for the year compared with 1,575 in 1983. Injuries also decreased when 1984 is compared with 1983 -- to 229 from 242.
- Liquid pipeline leaks/failures and injuries fell from 45 and five in the fourth quarter of 1983 to 37 and one in the fourth quarter of 1984, while the number of liquid pipeline leaks/failures increased to 188 in 1984 from 161 in 1983 and injuries rose to 19 from nine for the same periods.

HAZARDOUS MATERIALS

- In the fourth quarter of 1984, Hazardous Materials fatalities, injuries, and incidents all experienced decreases when compared to the fourth quarter of 1983. Fatalities and injuries both decreased slightly, from two to zero and from 43 to 42, respectively; and incidents fell from 1,242 to 1,001.
- The number of Hazardous Materials incidents declined from 5,845 in the year 1983 to 5,512 in 1984. Fatalities also dropped slightly during the same periods -- from eight to seven. However, there were 242 injuries reported in 1984 versus 193 in 1983.

CHART 51A. GAS PIPELINE FATALITIES, 1983*-1984

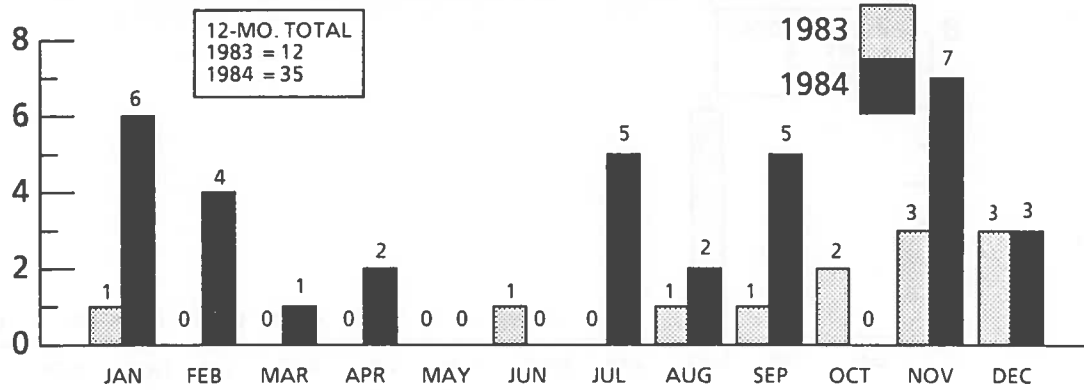


CHART 51B. GAS PIPELINE INJURIES, 1983*-1984

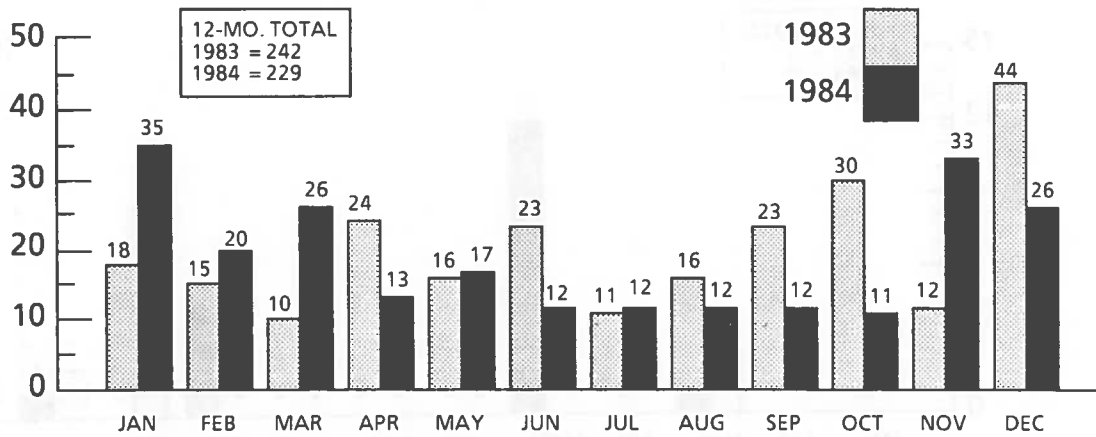
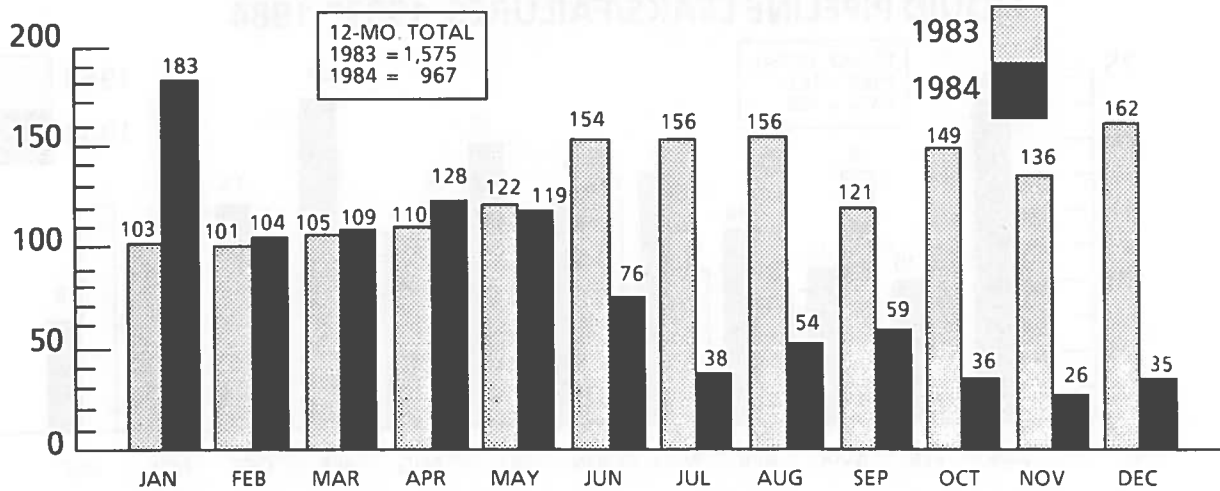


CHART 51C. GAS PIPELINE LEAKS/FAILURES, 1983*-1984



* Beginning with 1983 data, Pipeline Incidents are credited to the year in which they occurred, not the year in which the report was received.
NOTE: 1984 Data are preliminary.

Data supplied as of 01/01/85

SOURCE: Gas Pipeline: DOT F 7100.1 and F7100.2.
RSPA, Hazardous Materials Information Systems, DMT-63.

CHART 53A.

HAZARDOUS MATERIALS INCIDENTS, 1974 - 1984*

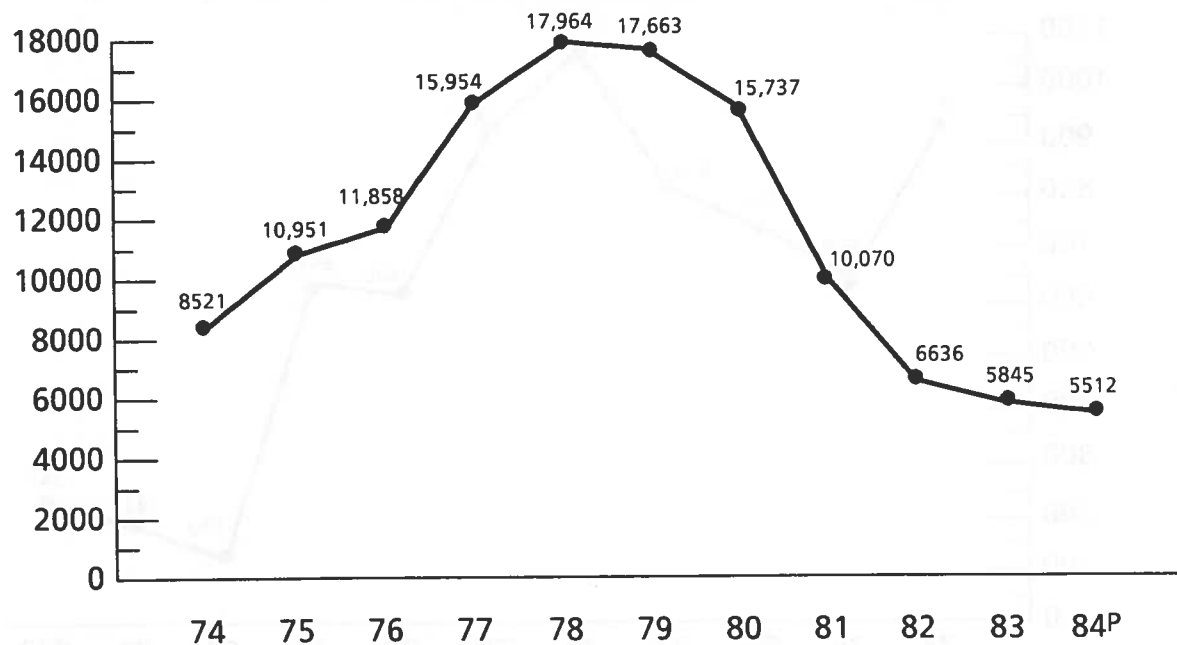
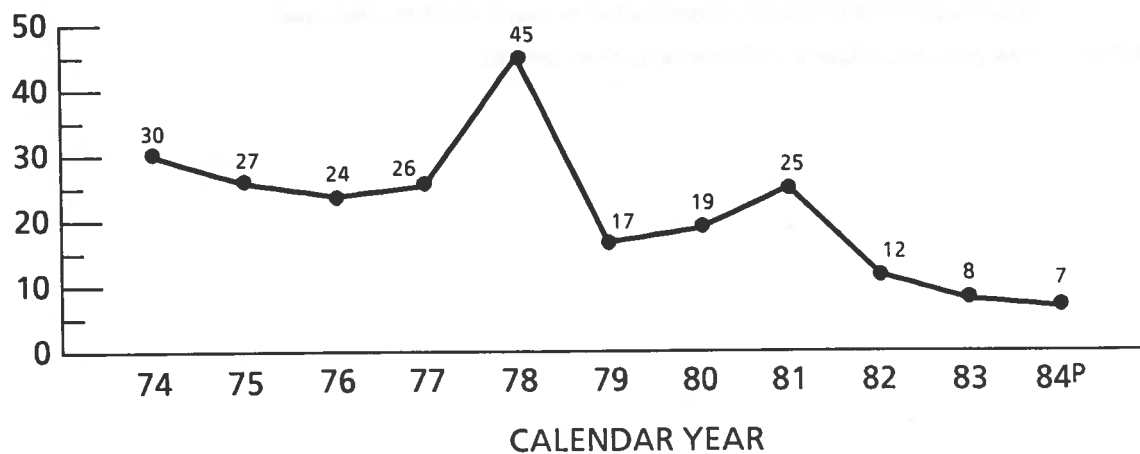


CHART 53B.

HAZARDOUS MATERIALS FATALITIES, 1974 - 1984



P = Preliminary.

* Effective January 1, 1981, the reporting requirements were changed to exclude incidents involving consumer commodities, wet electric storage batteries, or paint, enamel, lacquer, stain, shellac, etc., in packaging of 5 gallons or smaller unless the incident results in death, injury or property damage over \$50,000; the material is being transported by air or the material is classified as a hazardous waste.

NOTE: Data supplied as of 01/01/85.

Hazardous Materials incidents are reported in the year in which they occurred.

SOURCE: RSPA, Hazardous Materials Information Systems, DMT-63.

CHART 54A.

HAZARDOUS MATERIALS FATALITIES, 1983 - 1984^P

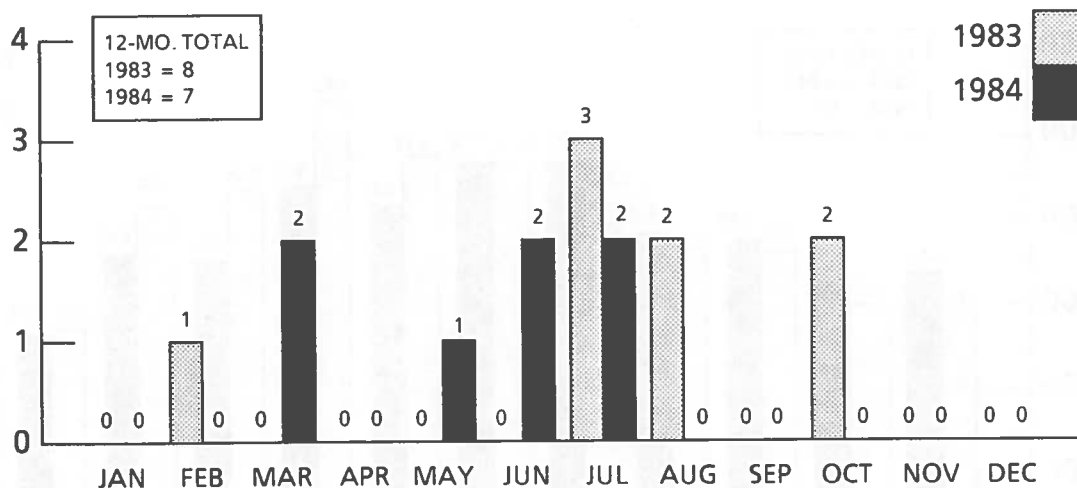
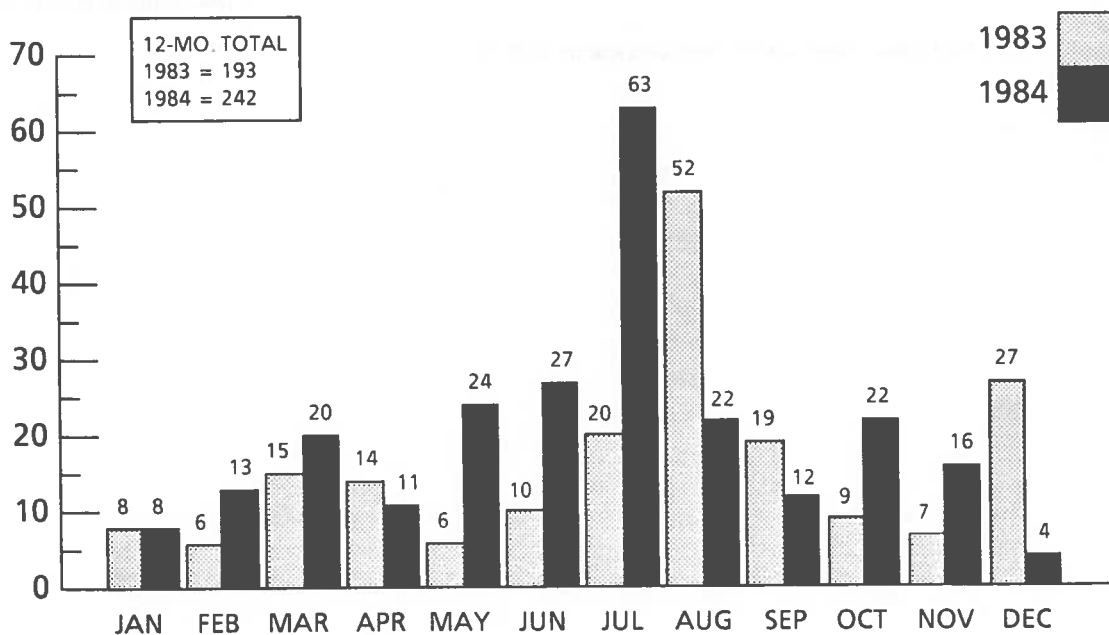


CHART 54B.

HAZARDOUS MATERIALS INJURIES, 1983 - 1984^P



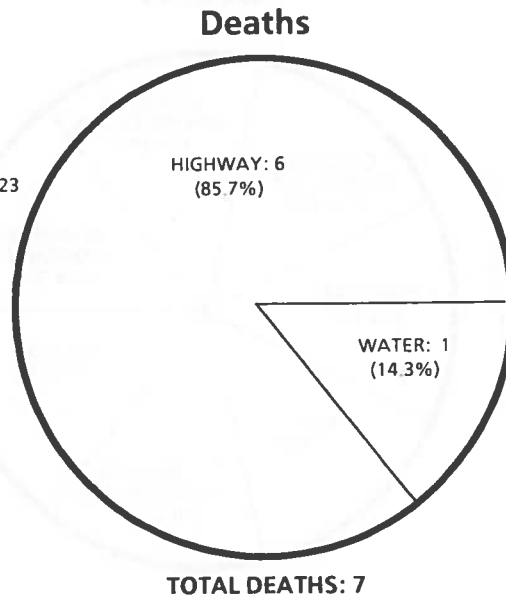
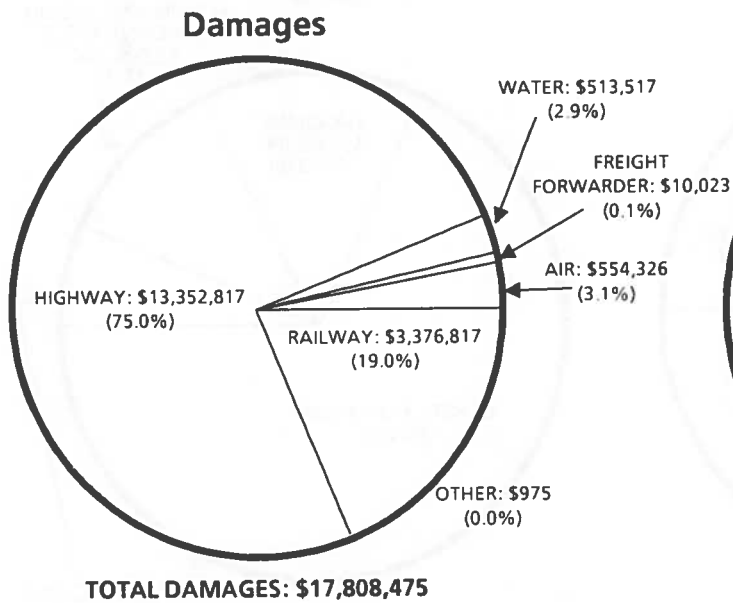
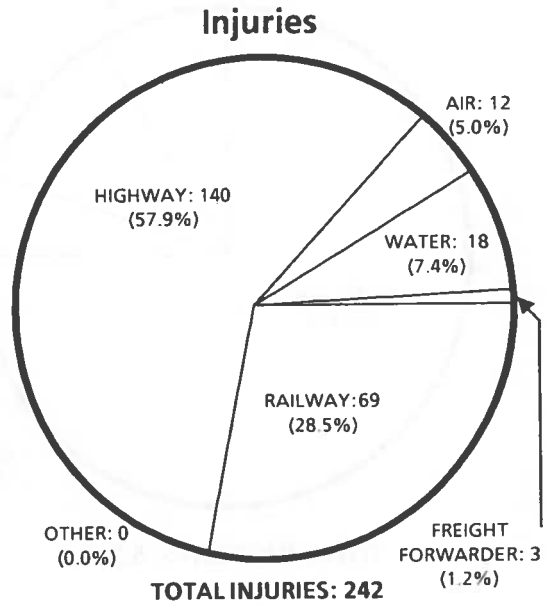
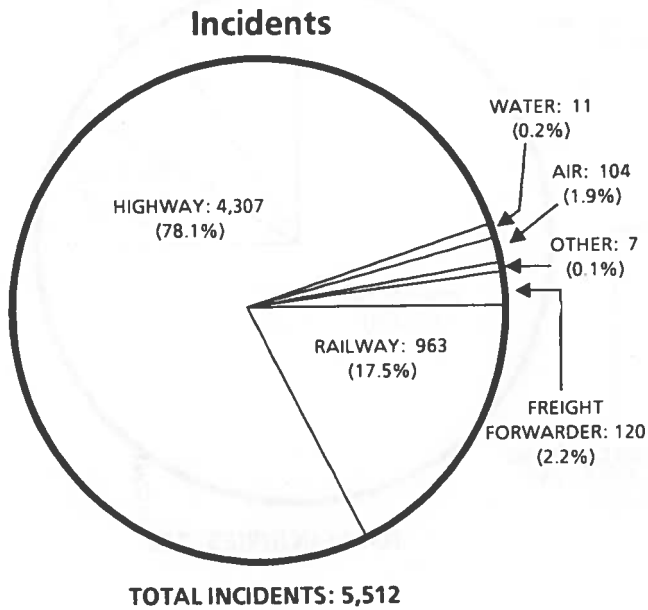
P = Preliminary.

Data supplied as of 01/01/85

SOURCE: RSPA, Hazardous Materials Information Systems, DMT-63.

CHART 55.

HAZARDOUS MATERIALS INCIDENTS, INJURIES, AND DAMAGES BY MODE, 1984P



P = Preliminary.

Data supplied as of 01/01/85

SOURCE: RSPA, Hazardous Materials Information Systems, DMT-63.

MODAL SAFETY HAZARDS

Boston, MA, Explosion and Fires

On October 19, 1984, the National Transportation Safety Board (NTSB) concluded that the explosion and series of fires in East Boston on September 23, 1983, resulting from overpressure in natural gas lines was caused by the use of oversize weights in a monitor gas regulator and failure to properly and adequately test the regulator system involved.

In addition to the use of oversize weights that blocked the complete closure of the backup gas-pressure control device, the Board said the Boston Gas Company failed to test the "monitor regulator for operation with normal appurtenances in place" and failed to test adequately that the primary regulator's vent system in the vault at Porter and Breman Streets was watertight.

There were no fatalities or injuries as a result of the accident which affected a square-mile section of the city.

The monitor regulator, the Board's investigation showed, had not been tested with its pressure balancing weights in place on the diaphragm plate. The diameter of the weights in use at the time of the accident extended beyond the border of the plate and blocked its complete closure when the monitor reacted to the overpressure.

A break in a nearby water main had caused flooding of the regulator vault. Water entered the regulator vent system and caused the primary regulator to fail. The primary regulator was designed to operate under water if its vent system remains watertight.

As a result of its investigation the Board had issued three recommendations concerning the use of balance weights, the maintenance of watertight regulator vents, and maintenance of pressure recording equipment. The Board said these recommendations met with an "acceptable" response by the Boston Gas Company.

In issuing its report, the Board made two other recommendations dealing with inspection and maintenance of Boston Gas equipment and called upon the company to emphasize to its emergency response personnel the need to communicate information that might reflect emergency conditions within the gas distribution system.

SOURCE: NTSB News Digest, Vol. 3, No. 6, p. 4.

Herndon, VA, Gate Station Explosion and Fire

The NTSB reported on August 9, 1984, that the Washington Gas Light foreman who died in the Herndon gate station explosion and fire in Fairfax County last October 13, 1983, could have prevented the accident if his inspection of work done by his unsupervised crew before he arrived had detected that a critical valve had been left open.

In addition to that causal factor, the foreman's use of a nonsupervisory member of his crew to direct the work, and the lack of written company procedures detailing the work to be done, were contributing factors in the accident, the Safety Board found.

Pipe Joint Break, Failure to Stop Gas Flow and Prevent Ignition All Led to Clear Lake, Iowa Explosion

The non-fatal natural gas explosion and fire that destroyed an apartment building in Clear Lake, Iowa, July 12, 1983, was caused by the failure of a substandard joint between lengths of plastic pipe that had been connected a year earlier, the NTSB concluded on June 14, 1984.

The failure in the 2-inch plastic pipeline occurred at a point where, when service was extended to a new apartment building in a development, pipe was added to the end of an existing line.

The accident also involved the failure of personnel working for Interstate Power Company, the gas supplier, to locate and rapidly shut off the source of gas, although several options to accomplish this existed, and to eliminate sources of ignition.

Extending the pipe length was accomplished through a butt heat-fusion joint. The process involves joining the ends of two pipe segments in a device that holds a heater element square to the ends of the piping, compresses the heated ends together, and holds the joined pipe in proper alignment while the plastic hardens.

The Board report said that although the joint had a physical appearance consistent with proper butt fusion, and had passed a pressure test before being put into service, post-accident testing showed evidence of a "cold weld" in which insufficient heat or pressure is applied, or the curing is not continued long enough. This "substandard" joint subsequently failed.

During the course of its investigation the Safety Board recommended to the Interstate Power Company that it immediately instruct its employees in the gas company's procedures for responding to emergencies, emphasizing the need for rapid evacuation of the public from areas exposed to potential danger from leaking gas, for prompt shutoff of gas to failed facilities, and for prompt analysis of leak severity.

In adopting its determination of probable cause, the Board also urged Interstate to review with its pipe fitters all elements of its procedures for fusion of plastic pipe to assure proper fusion joints and to review with its gas district clerks procedures for the immediate recording of leak complaints and the ensuing response activity.

A recommendation to the American Gas Association (AGA) sought dissemination of the findings of this accident report and the urging of member companies to reevaluate their plastic pipe fusion procedures and to check that responsible personnel are explicitly following the procedures. A second recommendation asked the AGA to urge its members to reemphasize measures to be taken following a gas leak, including shutting down failed gas facilities, evacuating residents, ventilating buildings, and eliminating sources of ignition.

SOURCE; NTSB News Digest, Vol. 3, No. 4, p. 4.

SAFETY PROGRAM HIGHLIGHTS

First Joint Meeting of Liquid and Gas Technical Committees

The first joint meeting of Liquid and Gas Technical Committees was held on October 31, 1984. In addressing the joint committee, Cynthia Douglass, Administrator of the Research and Special Programs Administration, noted that this historic meeting brought together pipeline industry experts from government, private and public sectors at the national, state, and local levels. The

MAJOR DOT SAFETY REGULATIONS

OCTOBER 1, 1984 - DECEMBER 31, 1984

The actions below are summarized from the final rules and regulations published in the Federal Register (FR) during the period covered by this report. These regulations amend the designated titles and sections of the Code of Federal Regulations (CFR).

U.S. COAST GUARD

46 CFR Parts 107, 108 and 109 -- Updates of References to 46 U.S.C. in 46 CFR Subchapter IA

Numerous general maritime shipping laws related to vessels and seamen were recently codified and enacted into positive laws as Subtitle II of Title 46, United States Code (46 U.S.C. 2101 through 13110). The purpose of this final rule is to amend the authority citations and references in 46 CFR Subchapter IA to conform with the changes to Title 46 U.S.C. Effective date October 4, 1984. (49 FR 39161, October 4, 1984.)

33 CFR Parts 181 and 183 -- Certification, Safe Loading and Flotation Standards

This rule amends the Certification Regulations in Subpart B of Part 181 and the Safe Loading and Flotation Standards in Subparts C, E, G and H of Part 183 of Title 33, Code of Federal Regulations. The Coast Guard undertook a review of its regulations governing construction standards which apply to the manufacture of recreational boats in an effort to reduce the burden of existing regulations without sacrificing safety. Based upon the review effort, several sections have been determined to no longer be necessary, or have limited value in improving boating safety. These amendments revise or remove these sections of the Certification regulations and the Safe Loading and Flotation Standards to relieve the regulatory burden upon recreational boat manufacturers. Changes in the actual weights of currently manufactured outboard motors are reflected in the table used to determine safe loading capacities and the amount of required flotation material and require the installation of additional flotation material in some boats. Effective date April 3, 1985. (49 FR 39327, October 5, 1984.)

46 CFR Parts 33, 35, 75, 78, 94, 97, 161, 167, 180, 185, 192, and 196 -- Lifesaving Equipment for Great Lakes Vessels, Emergency Position Indicating Radio Beacons

These rules require that small passenger vessels, other inspected Great Lakes vessels, as well as certain coastwise vessels operating on the Great Lakes, be equipped with Emergency Position Indicating Beacons (EPIRB). The purpose of these beacons is to provide a radio signal that will alert potential rescuers to a casualty and to provide a beacon to assist in locating the casualty. The need for this action arises from several Great Lakes vessel casualties in which such a beacon would probably have prevented some of the loss of life. Effective date March 29, 1985. (49 FR 40407, October 16, 1984.)

33 CFR Part 144 -- Exposure Suits; Requirements for Mobile Offshore Drilling Units

These rules revise the areas where exposure suits are required for personnel on board mobile offshore drilling units, including foreign flag units, engaged in activities on the Outer Continental Shelf of the United States. Units operating in waters where the water temperature does not present a severe threat of injury due to exposure will continue to be exempted from the requirements, but the boundaries where that exemption applies were changed by recent legislation. This document conforms the regulations to the statutory limitations. Effective date December 30, 1984. (49 FR 50722, December 31, 1984.)

14 CFR Parts 25 and 121 -- Floor Proximity Emergency Escape Path Marking

This amendment establishes new performance standards for floor proximity emergency escape path marking to provide visual guidance for emergency cabin evacuation when all sources of cabin lighting more than 4 feet above the aisle floor are totally obscured by smoke. This amendment makes the standards applicable to future type certifications of transport category airplanes and, after November 26, 1986, to airplanes type certificated after January 1, 1958, and operating under Part 121. These standards represent a significant improvement in aircraft cabin safety and are in addition to the emergency lighting standards currently in the regulations. Effective date November 26, 1984. (49 FR 43182, October 26, 1984.)

14 CFR Parts 25, 29, and 121 -- Flammability Requirements for Aircraft Seat Cushions

These amendments establish new flammability requirements for seat cushions used in transport category aircraft certificated under Part 25 and Part 29 and require that the cushions in transport category airplanes type certificated after January 1, 1958, and operating under Part 121 comply with these new requirements after November 26, 1987. These new requirements are in addition to the present flammability requirements contained in the Federal Aviation Regulations and represent a significant advancement in aircraft fire safety. Effective date November 26, 1984. (49 FR 43188, October 26, 1984.)

14 CFR Parts 1, 27, 29, and 91 -- Rotorcraft Regulatory Review Program; Amendment No. 2

This rule adopts new airworthiness standards for type certification of normal and transport category rotorcraft. New standards are necessary because of the phenomenal growth of the rotorcraft industry and the recognition by both government and industry that the updated standards are needed. This rule changes those sections of Parts 1, 27, 29 and 91 of the Federal Aviation Regulations which apply to rotorcraft flight characteristics, systems, and equipment. Effective date December 6, 1984. (49 FR 44422, November 6, 1984.)

14 CFR Part 43 -- Anti-Misfueling: Tank Filler Opening Adapters

This amendment to Appendix A of Part 43 of the Federal Aviation Regulations (FAR) classifies the installation of fuel tank filler opening adapters as preventive maintenance when certain conditions are met. Several accidents have occurred as the result of misfueling aircraft and have resulted in numerous deaths and injuries. Installation of these adapters will significantly reduce accidents due to fueling aircraft which require gasoline with jet fuels. Effective date November 7, 1984. (49 FR 44602, November 7, 1984.)

14 CFR Part 39 -- Airworthiness Directives; Boeing Model 747 Series Airplanes

This amendment adds a new airworthiness directive (AD) which requires structural inspections and repairs or replacements, as necessary, on certain high time Boeing Model 747 series airplanes to ensure continued airworthiness. The incidence of fatigue cracks on these airplanes is expected to increase as they approach and exceed the manufacturer's original design life goal. This AD is prompted by a structural reevaluation which has identified certain significant structural components in which cracks, if allowed to grow undetected, would result in a loss of structural integrity. Effective date November 23, 1984. (49 FR 44890, November 13, 1984.)

49 CFR Parts 391 and 392 -- Qualifications of Drivers and Driving of Motor Vehicles; Drugs

The FHWA is amending the Federal Motor Carrier Safety Regulations (FMCSR) to incorporate into the driver qualifications rules and the driving rules, prohibitions in the transportation, possession, and use of drugs and other substances listed in Schedule I of the Drug Enforcement Administration's Schedules of Controlled Substances (SCS). This action is being taken because these substances degrade psychomotor performance which in turn degrade driving skills. At present many of these substances are not prohibited under the rules. The addition of Schedule I drugs and other substances to the rules will enable the motor carrier industry to reduce the risk of driver intoxication or deviant behavior caused by the use of dangerous substances, such as marijuana, heroin, and mescaline. Effective date December 5, 1984. (49 FR 44210, November 5, 1984.)

FEDERAL RAILROAD ADMINISTRATION

49 CFR Part 225 -- Adjustment of Monetary Threshold for Reporting Accidents/Incidents

This rule increases the reporting threshold from \$4,500 to \$4,900 for railroad accidents/incidents involving property damage that occur during calendar year 1985. This action is needed to insure that the FRA reporting requirements reflect cost increases that have occurred since the reporting threshold was last computed in 1982. In addition, FRA is amending six sections in 49 CFR Part 225 to make very minor technical improvements in the regulation. Effective date January 1, 1985. (49 FR 48938, December 17, 1984.)

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

49 CFR Part 571 -- Federal Motor Vehicle Safety Standards; Lamps, Reflective Devices and Associated Equipment

The purpose of this notice is to amend the corrosion test requirements and procedures in Motor Vehicle Safety Standard No. 108 applicable to semi-sealed replaceable bulb headlamps and lens/reflector components of such headlamps.

The bulb removal corrosion test adopted in this notice was proposed on September 30, 1983 (48 FR 44866). In essence, it requires that the bulb be removed from the lamp and the test chamber at the end of the required 23-hour period of exposure to salt spray, for the final hour of eight of the ten 24-hour test cycles. This notice also adds motorcycles to the categories of vehicles allowed to be equipped with semi-sealed replaceable bulb headlamps. A revised bulb connector test is also adopted herein. Effective date December 13, 1984. (49 FR 44699, November 13, 1984.)

49 CFR Part 571 -- Federal Motor Vehicle Safety Standards; Lamps, Reflective Devices, and Associated Equipment

This rule adopts changes in rear yellow turn signal photometrics, license plate lamp requirements, minimum headlamp mounting heights, and test grids for stop, turn, parking, and tail lamps. The primary purpose of the amendments is to bring the requirements in Federal Motor Vehicle Safety Standard No. 108 closer to those of the Economic Commission for Europe of the United Nations (ECE). The amendments will permit cost savings without adversely affecting safety. A notice of proposed rulemaking on this subject was published on August 1, 1983. Effective date December 26, 1984. (49 FR 46386, November 26, 1984.)

49 CFR Part 571 -- Federal Motor Vehicle Safety Standards; Lamps, Reflective Devices, and Associated Equipment

This notice amends Safety Standard No. 108 to allow motor vehicles to be equipped with a new four-lamp rectangular sealed beam headlamp system smaller than that currently allowed. A notice of proposed rulemaking ("NPRM") on this subject was published on April 30, 1984 (49 FR 18321).

The system, to be known as Type F, consists of two lamps which produce lower beam light and two lamps which produce upper beam light. The system will not utilize the supplementary upper beam from the lower beam headlamp as is the practice in current four-lamp systems.

Type F headlamps, though mechanically aimable, do not incorporate traditional lens-mounted aiming pads, and a special aimer adapter has been designed for the system. Because the aiming and seating planes are identical, the minimum amount of required horizontal aim is reduced from plus or minus 4 degrees to plus or minus 2-1/2 degrees.

The weight and volume of Type F headlamps are about half those of headlamps used in current four-lamp rectangular headlamp systems and the new system therefore offers the prospect of improved fuel economy through lighter vehicle weight and more aerodynamic front end design.

This notice completes initial rulemaking action implementing the agency's grant of petitions for rulemaking by General Motors Corporation, which developed the system, and American Motors Corporation. A second notice of proposed rulemaking on issues of simultaneous use of Type F headlamps, co-aiming and optional availability of an auxiliary filament will be published shortly. Effective date July 1, 1985. (49 FR 50176, December 27, 1984.)

RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION

49 CFR Parts 173 and 179 -- Specifications for Tank Cars; Response to Positions

The Materials Transportation Bureau (MTB) received petitions for reconsideration of the final rule in Docket No. HM-175 from the Association of American Railroads (AAR), Dow Chemical Company, and Mallard Transportation Company. MTB and the Federal Railroad Administration (FRA) thoroughly reviewed the arguments raised in the petitions for reconsideration and conclude that the petitions should be denied. (49 FR 43963, November 1, 1984.)

49 CFR Parts 173, 177, 178, and 179 -- Cryogenic Liquids; Corrections and Revisions

This document makes additional corrections and clarifying revisions to a final rule published under Docket HM-115 which amended the Hazardous Materials Regulations (49 CFR Parts 171-179) by establishing requirements for the transportation of certain cryogenic liquids (49 FR 27674, June 16, 1983; 48 FR 50440, November 1, 1983, 49 FR 24306, June 12, 1984). This document corrects typographical errors, omissions, discrepancies, and provides answers to questions of general interest received by MTB with respect to those publications. Also, an alternate configuration for the pressure relief device system on cargo tanks used in atmospheric gas (except oxygen) and helium service is authorized. The final rule under HM-115 carries an effective date of October 1, 1984. Effective date October 1, 1984. (49 FR 42733, October 24, 1984.)

"Property Damage" refers to the estimated cost to repair or replace damaged property (vehicles, equipment, right-of-way, etc.) to a state equivalent to that which existed prior to the accident. Property damage does not include the cost of clearing wreckage.

B. Train Derailments

1. Rail transit train derailments which result in \$5,000 or greater property damage.

C. Fires/Explosions

1. Fires/explosions which involve the participation of the local fire department in the fire fighting, and/or which cause the evacuation of passengers onto the system right-of-way.

D. Exclusions

1. Accidents (collisions, derailments or fires/explosions) occurring in yards and non-revenue service areas which do not involve revenue trains; accidents (collisions, derailments or fires/explosions) which involve only work trains and servicing equipment; and collisions between train cars resulting from coupling operations which do not involve passenger casualties are excluded.

RRT Casualty - is any casualty which satisfies the following threshold levels:

A. Employee Casualties

Employees who are on-duty and who are killed or sustain lost workdays resulting from reportable train accidents.

"Lost workday" means any full day or part of a day (consecutive or not) other than the day of the injury, that an employee is away from work because of the injury. The day of the reportable train accident is not to be reported as a lost workday even though the injured employee does not complete the work assignment that day.

B. Passenger and Other Casualties

Casualties involving passengers or other personnel (off-duty employees, contractors, etc.) which occur at or in exclusive approaches to or from faregates, or equivalent, or within the normal "paid" area, and which result in:

A. Fatalities, or

B. Personal injuries which require immediate medical treatment beyond first aid.

"Medical treatment" means treatment requiring the attention of a physician or registered professional medical personnel. "Medical treatment" as used here, does not refer to minor first aid treatment (one-time treatment), precautionary measures such as tetanus shots, or subsequent observation of minor scratches, cuts, bruises or splinters.

C. Exclusions

Assaults, attempted suicides, and suicides are excluded.

AVIATION

Air Carrier - beginning with 1975*, air carriers comprise three operational categories:

- (1) **Certificated Route Air Carrier** - one of a class of air carriers holding a certificate of public convenience and necessity issued by the Civil Aeronautics Board to conduct scheduled services over specified routes and a limited amount of nonscheduled charter operations.
- (2) **Supplemental Air Carrier** - one of a class of air carriers holding operating certificates issued by the Civil Aeronautics 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.

Commuter Carrier - any operator who performs, pursuant to published schedule, at least five round trips per week between two or more points (see Paragraph 298.2 of FAR 38).

Air Taxi - any use of an aircraft by the holder of an air carrier operating certificate authorized by the certificate, or carries mail on contract (see Paragraph 298.3 of FAR 38).

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

General Aviation Flying:

- o **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.
- o **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.
- o **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.
- o **Instructional** - any use of an aircraft for the purposes of formal flight instruction with or without the flight instructor aboard.
- o **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.
- o **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.

*Prior to 1975, air carriers did not comprise commercial operators.

- o Injury - refers to an injury requiring medical treatment other than on site first aid.
- o Fatality - is a death resulting from the escape of liquid.
- o Accident - is a release of the commodity transported as presented in 49 CFR Section 195.50.

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