TWENTIETH ANNUAL REPORT

Fiscal Year 1986

U.S. Department of Transportation
Office of the Secretary of Transportation

U.S. DEPARTMENT OF TRANSPORTATION

20th Annual Report
Fiscal Year 1986

Contents

Summary

Summary

The U.S. Department of Transportation (DOT) establishes national transportation policy. DOT includes nine administrations whose responsibilities include: highway planning, development and construction; urban mass transit; railroads; aviation; and the safety of waterways, ports, highways, and oil and gas pipelines. The Department develops policies and programs to provide safe, rapid, secure, and accessible transportation.

The Department's most important endeavors of fiscal 1986 implementing these functions are summarized below. More detailed accounts follow in the **Progress Reports.**

Regulatory Reform

The Department continues to assess regulatory reform of the airline, truck, rail, and bus industries. In 1986, DOT urged removal of all remaining Interstate Commerce Commission (ICC) regulation of trucking. A working group, convened to reassess discrepancies in the data on trucking accidents since deregulation, gathered by the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA), proved that the number of truck accidents had in fact declined since deregulation, although DOT believes this decline is due to improved safety enforcement.

Toward a Drug-Free Workplace

The Department implemented the first regulation in the United States addressing alcohol and drug abuse by railroad employees. On February 10, 1986, the Federal Railroad Administration (FRA) began to implement regulations that addressed alcohol and drug use in railroad operations, prohibiting railroad workers from using or possessing alcohol or drugs, or being under the influence of the same. The intent was to promote voluntary prevention programs, while simultaneously providing the necessary testing to remove alcohol or drugs from railroad operations.

Safety Regulations

The Federal Aviation Administration (FAA) crafted regulations to enhance aviation safety, including criteria that aircraft with radar beacon transponders operate them in all controlled airspace; a Minimum Equipment List specifying what must be in working order on air carrier flights; rules that airlines carry emergency medical kits on each aircraft to treat passengers who might face medical problems in flight; tougher flammability criteria for materials used in airline cabins; requirements for shoulder harnesses on newly-manufactured aircraft having nine seats or less; and a ruling that a pilot's refusal to submit to alcohol testing might cause decertification action.

Transportation Safety

The fatal accident rate for general aviation improved for the fourth consecutive year, and the fatal accident total (466) was a modern low. In 1986, 46,056 persons died in traffic accidents, and the fatality rate only rose from 2.47 deaths per hundred million vehicle miles traveled in calendar year (CY) 1985 to 2.51 the next year. Alcohol abuse remains the basic highway safety problem. Also, failure to use safety belts available in nearly every passenger car and light truck results in about twice the front-seat occupant fatalities and damages as might have been the case. Calendar year 1986 was the safest year in history for the railroad industry, as both the number of accidents and the accident rate declined, extending a trend begun in the early 1980s. There were 2,761 rail accidents in CY 1986, a decline of approximately 20 percent from 1985. A total of 331 gas pipelines failed in CY 1985, a decline of 67 percent from 1984. One hundred and six injuries resulted from these failures, down 54 percent from the prior year. Liquid pipeline accidents also dropped from 203 in 1984 to 183 in 1985, down one percent. Hazardous materials incidents increased by 208 from 1984 to 1985, increases on highways and freight forwarders more than offsetting decreases by rail.

International Transportation

The Department took part in meetings to discuss the role of international civil aviation in suppressing illicit drug trafficking, the involvement of human factors in air safety, and the unique problems of elderly and disabled passengers.

DOT provided technical assistance to resolve transport problems in Africa and the Caribbean and was broadly engaged in providing cost-reimbursable technical assistance to individual nations and regions, primarily in the areas of aviation, marine, highway, and transport system planning.

To prevent a recurrence of the Korean Air Lines incident, the United States and Japan joined the Soviet Union in locating a voice link among the nations in the Northern Pacific.

Marine Transportation

Coast Guard Search and Rescue (SAR) teams took over 58,000 calls for aid in 1986, saved over 6,800 lives and helped over 135,000 others. The Search and Rescue Satellite-aided Tracking System (SARSAT) was crucial in over 650 rescues.

The Coast Guard detained 147 vessels for narcotics trafficking and impounded over 1.8 million pounds of marijuana and almost 7,500 pounds of cocaine.

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According to the Maritime Administration (MARAD), by the end of fiscal year 1986, the privately-owned, deep-draft, U.S.-flag merchant fleet numbered 570 ships with a total capacity of 23 million deadweight tons (dwt). The U.S.-flag fleet ranked 6th in the world in carrying capacity and 13th in the number of ships. In 1986, mercantile cargos transiting the Saint Lawrence Seaway grew by 7 percent to 37.5 million metric tons. Leading the rise were bulk cargos, primarily U.S. exports of stone, salt, chemicals, fertilizers and scrap iron. On the other hand, grain exports declined slightly, as did the export of iron ore.

Aviation

The FAA completed the General Aviation Safety Audit (GASA), producing 27 safety recommendations, 18 of which were implemented. The GASA saw the FAA probe about 6,900 operators, pilots and on-demand air taxis.

FAA established 87 Airport Radar Service Areas (ARSAs) to provide extra safety and efficiency. ARSAs are 2-tiered blocks of airspace, generally circular, in which pilots are requested to remain in radio contact with the control tower.

Responding to the midair disaster over Cerritos, California, the FAA convened a Terminal Control Area Review Task Group to make recommendations to improve airport safety in congested airspace. FAA also announced that it would modernize the Traffic Alert and Collision Avoidance System (TCAS) aboard commercial aircraft.

Revised annually since December 1981, the National Airspace System (NAS) Plan outlined goals to improve air traffic control (ATC) and air navigation systems by investing in technology. Successes in 1986 include: progress toward installing the Host Computer System (HCS); delivery of new Flight Data Input/Output (FDIO) equipment to Air Route Traffic Control Centers and their adjunct terminals; critical design reviews completed for revising ARTS II, which provides automated radar services for air traffic control at smaller airports; and, in a bid to combat wind shear, FAA joined the National Weather Service in building the Next Generation Weather Radar (NEXRAD), a Doppler system able to "see" inside storms. The FAA NEXRAD design will be altered for terminal use to show wind shear at airports.

Highways

Obligations for Federal-aid highway programs rose to $14.2 billion. The FHWA spent $208.2 million on hazard abatement; $151.9 million on rail-highway safety crossing programs; and $9.9 million for traffic engineering aid, highway design, and upkeep.

The total Interstate System open to the public increased by 191 miles to over 41,600 miles, or over 97 percent of the System.

Railroads

1986 was the safest year on record for the nation's railroads, partly because economic conditions improved on the railroads and partly because FRA put greater emphasis on safety, placing 325 inspectors throughout the country to monitor the railroad industry.

Urban Mass Transportation

Notable developments at the Urban Mass Transportation Administration (UMTA) in 1986 include use of full-funding contracts on major capital investments, a vigorous search for privatization projects through outreach programs, employment of minorities, and a series of technical assistance activities to help the transit industry counter terrorism, deal with drug and alcohol abuse, or prepare for a national emergency.

Research and Special Programs

The Research and Special Programs Administration (RSPA) provides research and analysis to all DOT Administrations, OST, and other Federal agencies. The Transportation Systems Center (TSC) focuses on problems of safety, security, and modernization. The Transportation Safety Institute (TSI) conducts over 350 classes and training courses on safety and security. RSPA also works closely with the Federal Emergency Management Agency (FEMA) through the Office of Emergency Transportation (OET).

Progress Reports

Office of the Secretary

The Office of the Secretary (OST) provides professional staff support for the Secretary and establishes and maintains the activities of the various Administrations within the Department.

Major Initiatives

Drug-Free Workplace Program. Pursuant to Executive Order 12564, the Secretary of Transportation drafted a drug policy for DOT employees which includes detailed drug awareness and education policy, employee drug testing, and counseling and rehabilitation services in all areas of transportation.

DOT implemented the first regulation in the United States addressing alcohol and drug abuse by railroad employees. The FRA provided aid for a model voluntary alcohol and drug program called "Operation Red Block."

Maritime Policy. Between June 1985 and June 1986, owners of three large, modern tankers repaid $105.8 million in building subsidies in accord with a Departmental Final Rule, intended to welcome newer, more efficient tankers into the Alaska crude oil trade.

The Department developed and reviewed a wide range of maritime policy initiatives, including reorganizing the maritime Operating Differential Subsidy (ODS) program to increase operational flexibility of maritime companies receiving federal assistance.

The Assistant Secretary for Policy chairs the Administration's Interagency Maritime Policy Group, which examines international maritime issues. Maritime talks continue with several foreign states, including Brazil, Japan, the Soviet Union, and China. The Department led the U.S.-Consultative Shipping Group (CSG) talks in April 1986. Here, the United States opted to sign no formal agreement, but did sign a joint statement avowing that the United States and the CSG members would seek to expand the amount of cargo subject to competitive access, to resist acts by third parties restricting cargo access, and to continue regular consultation.

Transportation Regulatory Reform. The Department continues to assess regulatory reform of the airline, truck, rail, and bus industries, and it reports to Congress in oversight hearings. Further, the Department helped ensure passage of legislation that will complete economic deregulation of freight forwarders.

The Administration proposed additional trucking deregulation legislation, which would have erased all Interstate Commerce Commission (ICC) regulation of trucking. Due to concern about trucking deregulation and safety, DOT convened a Working Group on Truck Safety Data to review data from NHTSA and FHWA to resolve alleged differences in data collections. This review established that the number of reported truck accidents had in fact declined since deregulation, although DOT believes this was due to improved safety enforcement. The study found no link between truck safety and economic regulation.

International Cooperation Program. Highlights of DOT participation in international organizations include continued representation in councils, committees, and working groups, such as the European Conference of Ministers of Transport (ECMT), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO), and the Road Research Program of the Organization of Economic Cooperation and Development (RRP/OECD). A major success at RRP/OECD was the DOT initiative testing the capability of safety belt programs in participating countries.

Aviation Programs. Control of the Essential Air Service Program progressed smoothly in 1986. The main subsidy supporting this service was down from 1985 to $25.4 million, but essential services were maintained at eligible points.

DOT policy to conduct fitness analyses of new entrant carriers continues to function smoothly. The Department made major progress upgrading the program to monitor the continued fitness of carriers already holding authority. The number of carrier selection proceedings and merger applications increased substantially in 1986 over 1985. DOT was able to settle these cases within time periods set by statute.

International Aviation. The Department continues to play a key role in devising U.S. international aviation policy. DOT representatives took part in numerous bilateral and multilateral negotiations, and reached agreements providing openings for both U.S. and foreign-flag airlines with France, Switzerland, and Spain.

Highway and Transit Legislation. The "Surface Transportation Reauthorization Act of 1986" proposes a four-year authorization period providing about $57 billion. User fees would supply funds. A new feature of the Act is merging highway and transit programs into block

grants so that states and localities might have a greater role in funding their high priority projects.

Truck Size and Weight. DOT prepared and issued two working papers on the impact of a nationwide network for longer combination vehicles (LCVs). These supplement the Secretary's Report to Congress on "The Feasibility of a Nationwide Network for Longer Combination Vehicles," weighing the effects on truck traffic and transportation costs on the one hand and financial impacts on railroads on the other. The major views are that starting a nationwide LCV network will cause a loss in the gross revenue of the railroad industry, as freight traffic would switch to trucks, and, in the process, vehicle-miles by intercity trucking would increase slightly due to large diversions of traffic from rail.

Airport Studies for Congress. Work continues on a study mandated by Congress directing the Secretary to submit ". . . a report on whether, and to what extent, those airports which have the ability to finance their capital and operating needs without Federal assistance should be made ineligible to receive Federal assistance for airport development and airport planning." The study includes the ability of airports to raise revenue from sources now open to them, the view of airport managers about airport defederalization, and the efficacy of a passenger facility charge, often called a head tax.

Transportation for Handicapped Persons. DOT issued a comprehensive change of interim final regulations amending public mass transit guidelines assuring no discrimination against handicapped persons. The rule assures that transportation provided disabled persons is equivalent to that accessible to the general transit user. The rule contains a cost ceiling, reduces administrative spending, and keeps local control and flexibility over producing programs to meet the needs of handicapped persons. In addition, DOT provides over $29.7 million to help transit agencies purchase 1,432 vehicles for transporting elderly and disabled persons.

Transit Revenue Ratio Study. A Study of Transit Operating Revenue/Cost Ratios responded to a congressional mandate that DOT assess the policy import and technical feasibility of requiring transit properties to meet a minimum operating revenue-cost ratio as a condition for receiving Federal operating assistance. The study was tentative, but claimed the standard a federal intrusion into an area that should be locally controlled.

Coal Exports. The Department helped develop reports to Congress for the Federal Coal Export Commission on: (1) transportation and other regulatory issues affecting coal exports; (2) coal export financing; and (3) employment productivity and adjustment issues.

American Pacific Islands Transportation Problems. DOT finished a report to Congress on the Special Transportation Problems of the American Pacific Islands. The report gave the outcome of DOT discussions with the island governments in gathering data and reporting the transportation needs of American Samoa, Guam, the Northern Marianas, Micronesia, and Hawaii.

Historic Preservation. The Department held the second Biennial Awards Program for Outstanding Public Service to Transportation and Historic Preservation in May 1986. The program recognized 15 transportation projects demonstrating creativity in historic preservation. Recipients of the awards include individuals and associations at the national, state, and local levels in the private and public sectors.

Department-Wide Accounting and Financial Information System (DAFIS). DOT had Price Waterhouse handle a cost-benefit survey and evaluation of commercially available software packages, prototyping tools, and the FAA's Uniform Accounting System (UAS). The study defined the options for producing and implementing DAFIS and found them viable, including UAS.

Cash Management. The Department made genuine progress in efforts to enhance cash management, naming likely nominees for the shift to the Treasury's Lockbox Network, gaining sound annual interest savings, and increasing the number of civilian and military employees receiving their salary through the Direct Deposit/Electronic Funds Transfer (DD/EFT) System to 45.4 percent. DOT gained $11.9 million in aggregate cash management savings in 1986.

Departmental Headquarters Telecommunications System. In July 1986, DOT completed installation of its telecommunications system. supporting its three Headquarters buildings, including 11,000 voice lines, replacing all cable facilities, telephone instruments, and a management system to compile reports, directory, and inventory.

Departmental Women's Program. DOT improved chances for women, increasing by 600 the number of women in grade 13 rank and above positions; inspiring over 570 to seek new or different careers through the Cooperative Education Program, the Upward Mobility Program, and the FAA's Air Traffic Controller Cooperative and Predevelopment Program; locating over 200 women in the Professional Exchange Program; and giving over 570 women a chance to attend the Seminar for Prospective Women Managers. Also, the percentage of women in the DOT permanent workforce rose to twenty-two.

Departmental Management and Productivity Improvement. DOT aggressively pursued many initiatives to enhance overall management and productivity by forming a uniform DOT-wide Performance Management and Recognition System for supervisors and managers at grade 13 levels and up, and a like Performance Manage-

ment System for DOT's General Schedule employees. In addition, the Department completed a test of Departmental audit follow-up, including advice to improve DOT-wide execution of these functions by increasing the employment of automated follow-up systems and producing a coordinated site evaluation with the Inspector General, including standard vulnerability assessments and evaluation guidelines. DOT administered one of the first Federal agency "Productivity Improvement Workshops," after the President's Productivity Program focused on targeting and measuring program functions for productivity improvement. In concert with the Mail Cost Reduction Program, DOT reduced or avoided $2,065,983 effected by lowering classes of mailing and by close watch of all mail service areas.

Small and Disadvantaged Business Utilization

In 1986, the Office of Small and Disadvantaged Business Utilization:

- issued competitive Requests for Proposals (RFPs) for Bonding Assistance Program contractors to provide surety bonds to Disadvantaged Business Enterprises (DBEs) throughout the United States, Puerto Rico and the Virgin Islands to help these firms participate successfully in transportation-related contracts;
- conducted national technical competition for Program Management Centers (PMCs) contracts among 8(a) contractors which provided outreach, marketing referral and technical assistance to DBEs, enabling them to obtain contracts emanating from. Federal financial assistance and direct contracting programs of the Department, the first time the Department had conducted this kind of competition among 8(a) firms; and
- signed a grant agreement with the city of Cleveland for a demonstration project, focusing on women-owned business enterprises (WBEs) in the professional service areas.

Commercial Space Transportation

Following the Challenger tragedy, the President removed the business of launching routine foreign and commercial satellites from the shuttle. This decision was later incorporated into U.S. Space Launch Strategy calling for a space transportation system composed of both expendable launch vehicles (ELVs) and the shuttle. Factors contributing to this strategy include: a serious backlog of payloads, a markedly reduced flight rate, new operating rules imposed by the Presidential Commission on the Space Shuttle Challenger Accident, and the cost of orbiter design and replacement. Revised space launch strategy emphasizes that the shuttle fleet will be used for missions requiring its unique capability and that the commercial expendable launch vehicle industry will handle the bulk of government and industry needs.

Supplementing government policy aimed to create a positive environment for commercial ELVs, the Office of Commercial Space Transportation (OCST) gave regulatory guidance and set interagency relationships to support this important initiative. OCST staff met domestic launch firms, satellite manufacturers, and owners and operators to determine the potential effect of various public policy options on their business operations.

The Department worked with other agencies to develop a transition plan for payloads that would no longer fly aboard the shuttle. DOT chaired an Economic Policy Council Working Group subcommittee on insurance to identify impediments to space commercialization. DOT representatives met members of the financial community to explain the government's commitment to commercialize space. It evaluated the availability of private sector launch insurance and third-party liability insurance and their effect on space commercialization.

OCST devotes much of its effort devising a framework for regulating commercial launch activities. To manage a useful program, DOT develops precise managerial procedures, licensing practices, mission and safety review procedures, and information needs, with 13 other agencies, including the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), and the Nuclear Regulatory Commission (NRC), as well as agencies directly involved in the space program.

Inspector General (IG)

Detecting and preventing bid-rigging in DOT-funded building programs remain the IG's highest priority inspection effort. In 1986, 22 states reported collecting $62.5 million from bid-rigging overcharges, of which $11 million was returned to the FHWA as the Federal share. At the end of the fiscal year, the Office of the Inspector General (OIG) was pursuing inquiries in 23 states and Puerto Rico.

The OIG issued 1,827 audit reports during 1986, containing advice to improve the thrift, efficiency, and skill of DOT plans and operations having a potential impact of $957 million. The OIG questioned $74 million in claims by Federal-aid recipients. Solution of current and past years, counsel produced commitment by management to seek recoveries of $997 billion and to use assets more effectively. The OIG continues work to resolve seven cases over six months old, which contain debatable costs of $8 million.

The OIG opened 196 reactive investigative cases in 1986 and closed 173. Judicial dispositions resulted in 95 indictments, 56 convictions with fines of $2 million, 45 years sentence, and 119 years probation. Administrative action included debarment and suspension of 127 construction companies or individuals and 107 other administrative actions, like resignations, reprimands, recoveries, and terminations. In addition to fines, OIG inquiries netted an additional $12.6 million in recoveries and cost avoidance as a result of investigative efforts.

The OIG provided numerous management advisory services to the Department. Examples include judging air traffic controller data by the FAA, rating the sufficiency of control measures of a $25 million police communications system acquired by the New York City Transit Authority, and figuring the competence of the Supportive Services Program in aiding DBEs in one FHWA region.

United States Coast Guard

The mission of the United States Coast Guard (USCG) is to enforce or help enforce Federal laws on the high seas and waters subject to U.S. jurisdiction. These laws govern navigation, shipping, other maritime use, and the related protection of life and property. The Coast Guard also maintains maritime search and rescue ability; devises and maintains maritime aids-to-navigation; protects the marine environment; promotes commercial and recreational boating safety; does oceanographic research for other Coast Guard tasks; furnishes icebreaking services, domestic and polar; and, of course, is ready to play a specific role for the Navy in time of war or national emergency.

The Coast Guard manages a fleet of 243 cutters, 165 aircraft, and more than 150 boats. It also maintains about 47,500 aids-to-navigation. More than 37,200 military and 5,600 civilian personnel execute its duties, supported by almost 13,000 Coast Guard Selected Reservists and almost 38,300 civilian volunteers in the Coast Guard Auxiliary.

International Affairs

The Coast Guard taught about 170 students from 46 nations at its training centers, and operating units in the U.S. Mobile Training Teams (MTTs), on temporary duty in Antigua, Barbados, Dominica, Grenada, St. Kitts, and St. Lucia taught local coast guard units maritime drug interdiction. MTTs were also sent to Hong Kong, Indonesia, Malaysia, and Thailand to provide Search and Rescue (SAR) training. A Coast Guard Technical Assistance Field Team is permanently assigned to the U.S. Naval Support Facility in Antigua to provide continued assistance and training to eastern Caribbean coast guards.

The Coast Guard helped over 150 foreign visitors, providing facts about Coast Guard missions, operations, and equipment. Coast Guard forces were assigned to Navy ships during the annual UNITAS exercises with Latin American and Caribbean countries and the West African Training Cruise. The Coast Guard also operates LORAN and OMEGA radionavigation installations in 14 countries.

Maritime and International Law: Initiative to Combat Maritime Terrorism

After the ACHILLE LAURO incident, international organizations focused on preventing future terrorism at sea. The Coast Guard prepared recommended measures for adoption by the world community at the International Maritime Organization (IMO). In September 1986, the Maritime Safety Committee of IMO adopted the measures, which were circulated to all governments.

Search and Rescue

Search and Rescue (SAR) advances safety of life at sea by maintaining an absolute approach to saving lives and thwarting personal injury and property damage in the maritime regions of the U.S. The Coast Guard answered over 58,000 calls for aid in 1986, helping to save over 6,880 lives and, in the process, assisting more than 135,600 people, and preventing over one billion dollars in property loss. About one-fourth of the operating budget of the Coast Guard is allocated to the SAR program.

International talks led to bilateral search and rescue agreements with the People's Republic of China, Japan, the Soviet Union, and Mexico. These accords were based on the International Convention on Maritime Search and Rescue which took effect in June 1985. The Search and Rescue Satellite-aided Tracking System (SARSAT), a joint venture of France, Canada, the Soviet Union, and the U.S., became a fully operational system, credited with saving over 800 lives, mostly American citizens.

Improvements to the SAR Management Information System have yielded greater accuracy of data and updated simulation programs. This will ease field-level workloads and provide managers at all levels with data useful for more detailed program management.

Drug Interdiction

The Coast Guard seized 147 vessels for narcotics trafficking, with over 1.8 million pounds of marijuana and 7,435 pounds of cocaine. The National Narcotics Border Interdiction System (NNBIS) conducted many useful multi-agency, international operations with Columbia, Venezuela, Panama, Jamaica, and the Bahamas during the year, and helped build increased global awareness of this crisis. One operation included a rendezvous of forces in the deep Caribbean which disrupted the flow of marijuana from South America.

Aliens and Refugees

Reacting to the flood of illegal Haitians entering the U.S. (15,093 in 1980), Executive Order No. 12324 established in October 1981 the Haitian Migration Interdiction Operation (HMIO). The program has proved very useful. Last

year, the Immigration and Naturalization Service (INS) judged that HMIO saved the U.S. Government over $200 million annually in detention costs alone. In 1986, 3,237 illegal migrants were apprehended and repatriated.

Fisheries Law Enforcement

Besides its fisheries security duty under the Magnuson Fishery Conservation Management Act, the Coast Guard enforces the Lacey Act and other statutes regarding marine mammals, endangered species, and marine sanctuaries. Coast Guard fishery enforcement in 1986 included directing 3,448 boardings (3,069 domestic, 58 foreign), apprehending three foreign vessels, and exacting civil penalties amounting to $302,000 for the year.

Enforcing domestic regulations required 52 percent of the Coast Guard fisheries law enforcement. Foreign fishing was the main concern in the Exclusive Economic Zone (EEZ) waters off Alaska. Foreign fishing decreased throughout the EEZ, as directed, while joint venture trade and domestic fishing controls increased, resulting in an increased number of domestic fishing vessel boardings.

Aids to Navigation

The Office of Navigation continues to enhance navigational safety and achieve managerial improvement in both its Short Range Aids to Navigation (SRAN) and radionavigation programs.

The SRAN program continues its Lighthouse Automation and Modernization Project (LAMP). The Coast Guard automated five lighthouses and equipped ten already automated lights with modern power and control equipment to improve their reliability and service to mariners.

The Coast Guard converted 5,883 lighted fixed and floating aids from battery to solar photovoltaic power by the close of the year. This led to reduced operating costs and hazardous waste disposal problems associated with battery powered systems.

The Coast Guard developed a working prototype differential Loran-C network. A fully automated system was shown in Hampton Roads, Virginia, in July, to assess public and DOD interest, and to stimulate possible development of low-cost commercially-produced receivers. The Coast Guard solicited opinions on the system from those who attended.

The Naval Electronic Systems Command helped start to install, integrate, and test Global Positioning System (GPS) receivers on Coast Guard ships and aircraft.

Research and Development

The Coast Guard tested material for protective suits for marine personnel exposed to hazardous chemicals against 100 hazardous liquid chemicals with encouraging results. Researchers produced field-rugged examples of a unique chemical monitor and sent them to the Research and Development Center (R&DC) and to the Atlantic Strike Team for tests. As a consequence, they completed a protective suit communications ensemble.

Research to promote safer recreational boating continues. One study seeks effective ways of reducing death, injury, and property damage from alcohol-related boating accidents. Researchers completed a two-year soak test to determine long-term fresh water absorption characteristics of a variety of cellular plastic foams used in boats. They produced a valid, quantifiable method for learning the permeability of non-metallic fuel tanks.

Projects focused on protecting the marine environment include ongoing research on recovering, containing, and treating hazardous chemicals discharged at sea. The R&DC completed a field guide for "Response Techniques for Hazardous Chemicals that Sink" and produced a marine salvage computer program to assist Coast Guard personnel in stranded vessel salvage techniques. A short-term oil spill drift model for the Beaufort Sea made reasonable estimates of spill movement and R&DC staff successfully demonstrated the Ocean Dumping Surveillance System (ODSS) for Congressional staff, state officials, sludge operators, and the EPA. ODSS is ready for implementation.

The Coast Guard continues to develop the Search and Rescue Satellite Aided Tracking (SARSAT) system. Through the end of 1986, SARSAT was valuable in over 650 rescues, despite troublesome "false alarms." The SARSAT-3 satellite was launched successfully on September 17, 1986.

Aircraft

Renewal and growth of aircraft fleet assets continue in 1986. The multi-year implementation of the HH-65 Short Range Recovery (SRR) helicopter proceeded, with 30 aircraft operational at seven Coast Guard air stations. New C-130 aircraft are being bought with Navy and Coast Guard funds for Coastal Defense and Drug Interdiction. A multi-year contract was awarded to purchase as many as 32 Medium Range Recovery (MRR) helicopters to renovate the aging HH-3F fleet.

Shore Construction

Completed shore construction includes: a multi-mission station, small boat moorings, and a helipad at Station Venice, Louisiana; 14 units for single family housing at Cape Disappointment, Washington; a central fire and security alarm system, and a Personnel Activities Center Building and family support center at Support Center Kodiak, Alaska; a new waterfront facility at Humboldt

Bay, California; a "close replica" of Great Point Light at Nantucket, Massachusetts; a 5000 square foot abrasive blast facility at the Coast Guard Yard, Maryland; a jet engine test cell and repair facility at the Aircraft Repair and Supply Center, North Carolina; an industrial facility, warehouse, and engine maintenance building at Base Galveston, Texas; a new motor pool facility at Support Center New York, New York; multi-mission stations at Belle Isle, Michigan, and Erie, Pennsylvania; improvements to the galley/mess, pier, shore ties, and new barracks at Group Key West, Florida; and a new 700 foot LORAN-C tower at LORAN Station, Marcus Island, Japan.

Recreational Boating Safety

The Coast Guard continues its efforts to reduce the fatality, injury, and property damage rates among the estimated 16.1 million boats and 68 million people who go boating yearly. The approximate recreational boating fatality rate rose slightly from 6.8 to 6.9 fatalities per 100,000 boats in calendar year 1985.

The Coast Guard continues to coax states to take greater care of boating safety by devising and enforcing regulations, augmented by education and accident recovery programs. State and local governments were asked to assume most on-water recreational boating safety law enforcement functions as Federal resources were employed elsewhere. State efforts were enhanced by Federal financial aid; $13,099,998 was allotted to 54 of the 56 state and territorial governments in CY 1985, and $650,000 was awarded 11 nonprofit public service organizations for 16 projects benefiting boating safety. The Coast Guard, the National Association of State Boating Law Administrators, boat manufacturers, and public interest groups actively consulted to take advantage of Federal financial aid to upgrade the national boating safety program.

There are about 2,500 manufacturers producing over 500,000 boats a year. In CY 1985, the Coast Guard monitored 164 recall campaigns by manufacturers to correct potential hazards or to modify boats which failed to comply with applicable Federal safety standards. These campaigns affected a potential 63,074 boats. Preliminary tests by independent facilities under contract to the Coast Guard indicate that 70 to 142 failed to meet one or more of the applicable Federal standards.

The boating safety program is aided greatly by support from the Coast Guard Auxiliary. Auxiliary numbers held safety courses for 324,000 people and made courtesy inspections of over 267,000 boats. The Auxiliary reported saving 472 lives, assisting almost 34,000 people, and saving numerous boats and other property.

Waterways Management

The Coast Guard amended existing offshore routing measures in approaches to U.S. ports. The Coast Guard reviewed approaches to New York, Alaska, Florida, Alabama, and California to ensure safety of navigation and adequate anchorage sites. Also, several Gulf of Mexico fairways were amended to implement results of a 1981 study of all U.S. port approaches.

The Coast Guard is working with IMO to develop standards which would ensure the safety of navigation. Noteworthy is the gain the Coast Guard made in the effort to establish worldwide standards for removing unused offshore oil rigs.

Ice Operations

The 140 foot icebreaking tug THUNDER BAY was commissioned in February and homeported at Portland, Maine. The 110 foot icebreaking tugs APALACHEE, SNOHOMISH, CHINOOK, and MOHICAN were decommissioned during the second and third quarters of 1986. A major domestic icebreaking mission was required in the St. Clair River during March, when ice from Lake Huron choked the river. As many as six Coast Guard vessels and one Canadian ship were simultaneously involved in this operation.

International Ice Patrol

The International Ice Patrol season ran from March 27 to July 3, 1986. Aircraft and ships transiting the area reported 204 icebergs south of 48 degrees North latitude, about 55 percent of the 1946-1985 average of 368 icebergs.

Defense Readiness

The Navy-Coast Guard (NAVGARD) Board met in the spring and fall of 1986. The spring meeting focused on policies concerning women assigned to ships, skills to respond to the potential threat of Special Interest Vessels (SIVs) in U.S. ports, resolution of 86 Coast Guard appropriations and Coast Guard defense capabilities. The fall meeting addressed Maritime Defense Zone (MDZ) issues and included a report from the NAVGARD Working Group on Port Security.

Operational Intelligence

The Coast Guard developed several new initiatives to enhance its intelligence support system to meet the needs of law enforcement and military readiness missions. The Coast Guard Intelligence Coordination Center maintains an all-source intelligence 24-hour watch center to coordinate strategic and operational intelligence within the Coast Guard and between the Coast Guard and the national

intelligence community and law enforcement agencies. An intelligence collection and reporting system stresses timely reporting of information and requires that Coast Guard units collect the same. Reporting is suitable to the intelligence needs of the Defense Intelligence Agency (DIA) and the Central Intelligence Agency (CIA). One of the Coast Guard's most important initiatives was the successful amalgamation of Coast Guard officers into the Defense Attache System. A memorandum of agreement was signed with the DIA allowing Coast Guard Officers to participate in this challenging and important assignment.

Contingency Preparedness

In keeping with the Commandant's policy on improving military readiness, the Coast Guard continues to participate in the Joint Chiefs of Staff (JCS) Command Post Exercise (CPX) program. The JCS CPXs test crisis responses in a controlled environment. They also enable the Coast Guard to test and improve current Coast Guard and other Joint plans, policies, and procedures in various crisis events. Headquarters, Area, and District Commands participated in JCS directed CPXs PORT CALL 86 and PRESENT ARMS 86. About 25 Commander, Coast Guard Forces took part in these but in restricted circumstances.

Five other commands participated in three JCS-sponsored combined CPX/FTX (Field Training Exercise) exercises. In U.S. ports and harbors, approximately 35 units took part in FTXs during 1986. These included joint exercises GALLANT EAGLE 86, TEAM SPIRIT 86, MARCOT 2-86, and REFORGER 86, and Maritime Defense Zone (MDZ) sponsored FTXs PEARL HARBOR, PORT BREAKOUT, and PUGET SOUND HARDEX 86. At the fleet level, about 45 Coast Guard cutters participated in 25 Fleet Exercises (FLTEXs), the largest being the FLEETEX 86 series and OCEAN VENTURE 86.

Finally, a four member Coast Guard detail took part in UNITAS XXVII and WATC 86, during which the detachment was deployed on Naval vessels for six months off West Africa and South America to train the navies and coast guards of the participating nations in new methods and techniques of all Coast Guard mission areas. The detachment was given the utmost praise for their knowledge, experience, and professionalism during the entire deployment.

Military Recruiting

In late 1986, the Coast Guard reorganized military recruiting into three regional recruiting commands, taking the recruiting responsibility from each of the 12 Coast Guard District Commanders and centralizing that function at Coast Guard Headquarters. The three commands are at Norfolk, Virginia; St. Louis, Missouri; and Seattle, Washington, each controlling approximately one-third of the recruiting offices in the U.S.

Automated Military Pay System

By the end of 1986, the Coast Guard completed conversion from a manual to an automated pay system with 100 percent of active duty member pay records being maintained by the Coast Guard's PMIS/JUMPS automated pay system.

Coast Guard Reserve

The Selected Reserve increased in size to over 12,980, a 3 percent increase over 1985. Two new Reserve units were established, improving program administration and enhancing augmentation training and mobilization readiness.

The Coast Guard Reserve participated in JCS, DOD, and MDZ exercises. Reservists trained for their wartime missions and were provided specialized training opportunities. During 1986, almost 3,400 reservists took part in exercises in the U.S. and Europe. The Reserve training program was revised to correct problems noted during evaluation of the exercises.

The primary means of training reservists was augmenting active Coast Guard commands. More than 1.9 million hours of augmentation training was performed, participating in search and rescue cases, law enforcement operations, aids to navigation maintenance, environmental pollution responses, and working on all classes of Coast Guard cutters.

Reservists provided extra personnel for OPSAIL '86 in New York Harbor at the rededication of the Statue of Liberty. Working beside their active-duty equivalents, they provided safety and security for the thousands of citizens attending the celebration.

Reservists performing waterside security at the Kennedy Space Center for NASA's space shuttle launches were among the first to respond to the Challenger explosion. They extended the recovery area to search for survivors while parts of the shuttle were still falling into the ocean.

Additionally, 69 reservists provided 6,312 staff-days of work, operating seasonal SAR stations in the Great Lakes during Operation Summerstock.

Coast Guard Acquisition Reform Actions

Two studies in 1985 urged the Coast Guard to reform its acquisition function, formalize its acquisition planning process, streamline its review process, and improve various personnel management practices in contracting offices

both at headquarters and in the field. As a result of these studies, the Coast Guard established an Office of Acquisition in January 1986 to improve planning, project control, and timeliness by centralizing the Coast Guard's acquisition process. The Office developed a procurement management data system and instituted a training program for acquisition specialists. Of the 41 actions suggested by the two study groups, 11 were concluded and 21 more were being implemented at the end of 1986.

Civil Rights

In August 1986, the Commandant issued the Human Relations Policy Statement, after Coast Guard district and Headquarters units held five in-depth evaluations of civilian and military equal employment opportunity programs. Analysis of these enabled commands to seek advice about strengthening their programs.

The Coast Guard continues to take part in the Joint Service (CG/DOD) Occupational Task Analysis Study, conducted by Kinton, Inc., to help the Defense Equal Opportunity Management Institute (DEOMI) revise its training curriculum to meet performance-based needs of equal opportunity program personnel.

The Coast Guard formed a Historically Black Colleges and Universities (HBCUs) committee to suggest ways of funding HBCUs and to plan a seminar to promote the Coast Guard among HBCUs.

Military Justice Division: Supreme Court Case: United States v. Solorio

On June 16, 1986, the Supreme Court granted a Coast Guard case, U.S. v. Solorio, *certiorari*, under a 1984 amendment to Article 67 of the Uniform Code of Military Justice (UCMJ), authorizing direct appeal to the Supreme Court decisions of the Court of Military Appeals. Solorio, the first such grant of review to be fully briefed before the Court, presented for resolution questions whether "service connection," found in the Supreme Court decision in O'Callahan v. Parker, permitted a court-martial to exercise jurisdiction over sex abuse offenses against dependent children of active duty service members occurring off-base in the civilian community as the Coast Guard Court of Military Review and the Court of Military Appeals held, or whether the decision in O'Callahan should be overruled.

Claims and Litigation Division: Litigation Statistics

Plaintiffs demanded nearly $73 million in damages in 116 lawsuits against the U.S. arising from Coast Guard activities. Plaintiffs recovered slightly over $440,000 by settlement or judgment, 86 cases were disposed of with no payment by the U.S., and the U.S. recovered $4,400,000 in the 32 Federal Water Pollution Control Act cases closed.

User Fees

Coast Guard User Fees remain an item of discussion. The Coast Guard developed a comprehensive legislative proposal as early as December 1984. The basic purpose is to shift the costs of providing certain Coast Guard services from taxpayers generally to those for whom the services are being provided or for whom they are made available. The proposal would authorize the Coast Guard to collect from users a portion of direct operating expenses allocated to those users of Coast Guard services. Proposed net fees of $234 million are predicted during the first year of enactment and $482 million yearly thereafter.

Federal Aviation Administration

The responsibilities of the Federal Aviation Administration (FAA) are to regulate the positive and efficient use of the nation's airspace and to encourage civil aeronautics and air commerce at home and abroad. These responsibilities require carrying out a variety of activities, such as safety regulation, operation of common civil-military air navigation and air traffic control systems, research and development, and promotion of a national airport system.

Aviation Safety

According to numbers gathered by the National Transportation Safety Board (NTSB), on a calendar year basis, the 1986 fatal accident rate for major U.S. scheduled airlines was 0.016 per 100,000 departures, the lowest rate since 1980. The only fatal accident in this category was the crash of a Southern Air Transport cargo plane at Kelly Air Force Base, Texas, which took three lives. Airlines in unscheduled operations had no fatal accidents, while scheduled commuter airlines had the lowest total and fatal accident rate since the NTSB began compiling statistics on this branch of the industry in 1975. Air taxis were in 118 accidents, a record low, and their fatal accident (31) and fatality (64) figures fell from the previous year. The general aviation fatality figure of 958, one higher than 1985, includes 82 people who died in a collision of a small plane and an Aeromexico DC-9 over Cerritos, California. General aviation's fatal accident rate improved for the fourth straight year, and its fatal accident total, 466, was a record low.

Safety Rulemaking

The FAA pursued regulatory action to enhance aviation safety, including final rules that:

- require aircraft with radar beacon transponders to operate this equipment in all controlled airspace and those with Mode C altitude reporting equipment to use that capability in controlled airspace;
- complete a Minimum Equipment List Program specifying equipment that must be in operating condition during air carrier flights;
- require airlines to carry emergency medical kits on each aircraft to treat passengers who may face medical problems in flight;
- adopt more rigorous flammability standards for materials used in airline cabin interiors;
- require that shoulder harnesses be installed on all seats on newly-manufactured aircraft having nine passenger seats or less; and
- specify that a pilot's refusal to submit to alcohol testing may be used as grounds for decertification action.

In addition, the FAA proposed regulations to have protective breathing equipment in large aircraft to help the crew perform crucial tasks in the event of fire; independently-powered public address systems in newly-manufactured airline aircraft; greater airline control over the amount of carry-on baggage on flights; and new safety standards for airline seats in newly certified aircraft.

Safety Inspections. The FAA pressed its inspection team to improve Project SAFE, the Safety Analysis Functional Evaluation begun in 1984 to review FAA's safety inspection system. Project teams worked to improve training, staffing standards, job tasks analysis, and other aspects of inspection. FAA formed a Flight Standards Evaluation program to judge how well field inspectors were doing and whether headquarters policy was working. FAA began the National Aviation Safety Inspection Program (NASIP), which consolidated regional programs into a national plan. NASIP places special emphasis on inspecting air carriers conducting military charter flights and turbine engine repair stations. By the end of 1986, several in-depth NASIP analyses were made. FAA's dynamic enforcement plan brought about a $1.95 million civil penalty against Pan American World Airways.

The FAA completed the General Aviation Safety Audit (GASA), begun in 1984, and sent a report to the Secretary in April 1986. FAA conducted 6,859 inspections of operators, air personnel, air agencies, aircraft, and on-demand air taxis. The inspections led to 188,463 detailed findings, of which 171,233 were satisfactory and the remainder unsatisfactory. The audit produced 27 safety recommendations, 18 of which were implemented in 1986.

Other Safety Developments. The FAA added a Safety Recommendations Specialist to assess and process NTSB recommendations, and awarded a contract to increase automation of the database used in the response process. The FAA issued a policy ruling on accident investigations and implemented a quality assurance procedure to enhance participation of FAA inspectors in NTSB investigations as well as the utility of corrective actions.

In December 1985, the FAA launched a "Back to Basics" accident prevention campaign in concert with general aviation user groups and trade associations. In-

itially aimed at pilots of private and business aircraft, the class includes commercial pilots, airport personnel, mechanics, and air traffic controllers. The program, which will be conducted for at least three years, uses a variety of educational techniques to increase knowledge of fundamental procedures and heighten awareness of their importance to safety.

The FAA continues to implement the Aviation Safety Analysis System (ASAS), a computerized system that stores and processes data relating to aviation standards, medicine, and security. The FAA began work on Flight Standards vital databases which would provide FAA field offices ready material on air personnel, air operators, and air agencies. The agency also began work on a subsystem to automate issuance of operations requirements to air carriers.

The total number of operational errors for Air Route Traffic Control Centers and airport towers decreased by 19 percent from 1985. The FAA finished an analysis of human factors contributing to air traffic control errors, which include data on the integrity of the system and a synopsis of past and current human factors at work and programs for further improvement of the system.

Civil Aviation Security

As required by the International Security and Development Cooperation Act of August 8, 1985, the FAA carried out an enhanced program to provide an effective response to the terrorist threat to civil aviation. In addition to extraordinary security procedures throughout the world, the program included surveys of about 180 foreign airports. Evidence of those with meager security were provided in a report to the Secretary.

In-flight protection by Federal Air Marshals (FAMs) increased; the FAMs had the power of arrest and the authority to carry firearms. The FAA set policy standards and procedures for the FAMs mission, including policy on the use of deadly force. The FAA devised a plan in cooperation with the Federal Law Enforcement Training Center to train aviation security specialists to be marshals, and five classes completed the initial course.

The FAA reorganized the Office of Civil Aviation Security to reflect its expanded duties. Major changes involved creating an International Civil Aviation Security Division responsible for the foreign airport assessment program and the marshals program and an Intelligence Division responsible for collecting and analyzing intelligence affecting the safety and security of civil aviation. In this connection, plans were made to enhance the capability of the Intelligence Division by installing a computerized system for effective data analysis.

In accord with the Air Transport Association, the FAA devised a training program for Ground Security Coordinators (GSCs) and In-Flight Security Coordinators (ISCs). GSCs are air carrier station managers whose duty it is to ensure that flight personnel know how to respond to security incidents and that aircraft interiors are thoroughly checked before passenger boarding.

The FAA participated in the total evaluation of the domestic airport security program executed by the Secretary's Security Review Task Force. Actions taken to implement the Task Force's advice include further restrictions on access to secure areas.

Air Navigation and Air Traffic Control

Airspace Management. The FAA established Airport Radar Service Areas (ARSAs) at 87 locations to provide added safety and efficiency. ARSAs are two-tiered blocks of airspace, generally circular, in which pilots are required to remain in radio contact with the control tower. The FAA reviewed traffic management procedures and system effectiveness in order to decrease aircraft delays, and dispatched mobile teams of personnel with expertise in a variety of air traffic control disciplines to facilities experiencing such problems. In August 1986, for example, these teams helped achieve significant reductions in delays at San Francisco, Oakland, and San Jose, California. Work also proceeded on an Expanded East Coast Plan designed to alleviate congestion in the New York area and associated airspace by employing additional arrival and departure routes, among other techniques.

National Airspace System: (NAS) Plan. Updated on an annual basis since it was issued in December 1981, the NAS Plan outlines goals for improving the air traffic control (ATC) and air navigation system through investments in technology. During 1986, many of the Plan's component projects moved from the research and design phase toward production and delivery. The FAA:

- initiated steps to install the Host Computer System (HCS), the first step in the ongoing Advanced Automation Program which will replace existing computers at Air Route Traffic Control Centers (ARTCCs) with state-of-the-art means that will provide additional computer capacity and improve dependability of en route systems;
- dispatched Flight Data Input/Output (FDIO) implements to 11 Air Route Traffic Control Centers and their associated terminals, providing a streamlined way of transmitting and updating flight plan information;
- provided a $45.6 million contract to renovate the New York Terminal Radar Approach Control (TRACON) facility, which provides radar services to aircraft in the New York area's major hubs and designated satellite airports;
- reviewed critical design for improving ARTS II, providing automated radar services for air traffic control at smaller airports;

- awarded a contract for the Air Force Digital Bright Radar Indicator Tower Equipment (D-Brite) that will replace tower cab equipment that produces a televised image of radar displays;
- conducted tests of enhanced software for the En Route Automation Tracking Systems (EARTS) used for air traffic control at Honolulu and Anchorage, which include the Minimum Safe Altitude Warning and Conflict Alert features in operation at towers with ARTS III;
- reviewed 17 Airport Surface Detection Equipment (ASDE) systems being produced, which will expand safety by making it easier for controllers to watch aircraft and other vehicles on the ground;
- proceeded with work on the ASR-9, the next-generation solid-state Airport Surveillance Radar, and the Mode's system, which will serve as the next secondary surveillance radar system both domestically and internationally;
- authorized seven Automated Flight Service Stations (AFSSs), and ten Model I Flight Service Data Processing Systems;
- produced the Next Generation Weather Radar (NEXRAD), a Doppler system capable of "seeing" inside storms and providing important data;
- concluded a reimbursable agreement under which the Coast Guard will build and operate four LORAN-C transmitters in the mid-continent to complete signal coverage for the 48 contiguous states; and
- delivered new microwave communications equipment, which will provide better means of carrying radar information to air traffic control facilities and transferring data between facilities.

Airports

Federal funds obligated under the Airport Improvement Program totaled $782 million for 1,083 new grants for projects in the following categories: primary airports, 348; other commercial airports, 139; reliever airports, 143; general aviation airports, 400; integrated airport system planning, 53.

The FAA effected recovery of $1.8 million, representing the Federal share of funds collected from airport contractors involved with fraud and waste at airport development projects at New Orleans.

In October 1985, the FAA proposed a broad revision of its airport certification regulations, including changes involving an airport operator's charge for the safety of fueling operations and in guidelines for accident, fire, and rescue equipment at smaller airports. The goal is to make the rules easier to understand, comply with, and enforce.

A rule permitting buying and selling slots for airline arrivals and departures at four busy airports became effective on April 1, 1986. The rule reserved 5 percent of the slots for assignment by lottery to new entrants and incumbent airlines with less than eight slots. The airports affected are those covered by the "high-density rules," Washington National, Chicago O'Hare, and New York La Guardia and Kennedy International Airports.

In September 1986, the FAA effectively concluded a series of tests in Bakersfield, California, aimed to produce a more cost effective signal and data network through the Large Airport Cable Loop Program. FAA also tested a radio frequency data link for use at both large and small airports to provide a cheap way to transmit remote maintenance monitoring of airways facilities equipment.

International Aviation

The FAA took part in 10 major meetings and 17 working groups of the International Civil Aviation Organization (ICAO), including the 26th session of the ICAO Assembly, which set budget and work goals for 1987-1989. The program addressed security, ICAO's role in suppressing illicit drug transport, human factors in air safety, and a review of problems facing elderly and disabled travelers.

The FAA provided technical assistance through full-time resident technical specialists in Kuwait, Oman, Spain, Jordan, and the Bahamas, and dispatched about 27 short-term missions to eight other countries. The specialists supplied technical advice to these governments about improving their civil aviation regulations and the safety, efficiency, and capability of their aviation operations. Furthermore, FAA provided flight inspection services to 27 foreign countries. The FAA also trained 449 foreign nationals in disciplines related to air traffic control and aviation safety.

In other international aviation progress, the U.S., Japan, and the Soviet Union established a new voice communications loop to enhance the safety of flights on North Pacific routes. FAA and the Civil Aviation Administration of the People's Republic of China signed an aviation technical agreement covering a wide range of activities including exchanges of information and personnel relating to aeronautical programs of mutual interest.

Environmental Protection

FAA issued a proposed rule setting noise level standards for new helicopter types and prohibiting design changes that would increase noise levels on helicopters currently being built. In another rulemaking notice, the FAA proposed to revise noise certification standards for propeller-driven small airplanes by switching actual takeoff tests for the level fly-over tests previously specified.

Administration

Organizational Changes. In addition to the Aviation Security reorganization mentioned above, the FAA made other significant structural changes. The Civil

Aeromedical Institute (CAMI), previously under the purview of the Director of the Aeronautical Center, was placed under the control of the Federal Air Surgeon. The new structure combined aviation medical expertise and duties in one organization. The FAA also added an Office of Science and Advanced Technology to the Administrator's staff.

Civil Rights. Minority businesses received 13.8 percent of the contract dollars awarded by FAA recipients under the Airport Improvement Program, compared with 11.3 percent the year before. Participation by women-owned firms also showed a gain from 3.3 to 4 percent. Regional civil rights staff completed 654 reviews of minority business programs and annual updates authorized by DOT directives.

Five discrimination complaints were filed under Minority Business Enterprise (MBE) regulations, but none of the decisions issued by the Departmental Office of Civil Rights involved a finding of discrimination. Of the 128 formal discrimination complaints closed in FAA during 1986, more than half were settled informally, either by resolution or by withdrawal of the complaint.

Historically Black Colleges and Universities (HBCUs) got more than 37 percent of the $13,570,000 granted to institutions of higher education for the Airway Science Program. Personnel and Training. At the end of the fiscal year, the FAA had 46,682 employees. Of these, 13,289 were air traffic control specialists working in airport towers and en route centers.

The FAA granted a 20-year contract to Embry-Riddle Aeronautical University and the International Telephone and Telegraph Development Corporation to provide new facilities for the Management Training School in Palm Coast, Florida.

Human Resource Management. Attitude survey forms were issued all FAA employees during the summer of 1986 as part of an ongoing program of assessing and addressing FAA's needs in the area of human resource management. Working with the Professional Airways Systems Specialists (PASS), the FAA completed the initial phases of an employee involvement process in the Eastern region. The method, which involves airways facilities technicians represented by PASS, emphasizes participatory decision-making and problem solving by managers and employees in a union representation context.

The FAA has greatly expanded counseling options in its substance abuse program, under which employees in safety-related positions are offered the opportunity to rehabilitate themselves from substance abuse problems and continue their careers. In August, the FAA took another step against substance abuse by announcing that it would test employees in safety-related jobs for illicit drug and alcohol abuse as part of annual medical examinations.

Other Management Programs. In accordance with the Office of Management and Budget's (OMB) "A-76" Program, the FAA instituted very comprehensive productivity improvement programs that included 14 A-76 reviews, 7 management efficiency reviews, and 5 direct contracting efforts. Although the operations subject to review are performed throughout the agency, a significant number of the studies are performed at the Aeronautical and FAA Technical Centers. During 1986, FAA awarded contracts to private firms to provide en route training at all air route traffic control centers in the 48 contiguous states, and automation support functions at 22 facilities in the 50 states.

Federal Highway Administration

The Federal Highway Administration (FHWA) manages the Federal-aid highway program with the states and assists them in coordinating construction of primary, secondary, urban, and Interstate system roads. FHWA also regulates and enforces Federal requirements for the safety of trucks and buses engaged in interstate or foreign commerce and governs the safety in movement over the nation's highways of such commerce as explosives and flammable materials.

In addition, the FHWA participates, with the U.S. Forest Service, the National Park Service, and other Federal agencies, in designing and building primary roads in national forests, parks, and Indian reservations, and assists foreign governments with various phases of highway engineering and administration.

1986 saw continued increases in highway program obligations resulting from the Surface Transportation Assistance Act (STAA) of 1982, with $14.2 billion obligated in 1986 compared with $8.2 billion in 1982 (pre-STAA).

Cost Avoidance, Reduction, and Efficiency (CARE) Program

The FHWA CARE Program has two goals: (1) to foster Federal and state projects that result in cost avoidance and/or improvements in efficiency and effectiveness, and (2) to reduce internal costs. While saving funds is one measure of success, many FHWA CARE achievements represent notable headway in the overall efficiency and effectiveness of FHWA programs. 1986 FHWA CARE fulfillment totaled $398 million.

The FHWA offices have great flexibility in realizing the CARE Program, resulting in a wide variety of cost reduction initiatives. Many CARE activities represented changes made to state designed highway projects as a result of analysis and field reviews by FHWA staff, such as using recycled pavement instead of costly new material, requiring cost-saving alternate bridge designs and value engineering techniques, and eliminating unnecessary access roads and retaining walls.

Reductions in overhead costs were achieved by reducing cost of office space, telecommunications, and printing. While this effort depicts a standard method of cutting costs, other CARE achievements include reducing regulations and giving cost-saving information to improve the management of the Federal-aid highway program.

Legislative and Regulatory Initiatives

Provisions in the Tax Reform Act of 1986 reflected efforts by the FHWA, DOT, the Department of the Treasury, and the states to change Federal tax law to address evasion of gasoline excise taxes.

The FHWA maintained energetic dedication to regulatory reform consistent with Administration and departmental goals. By deleting needless requirements, eliminating duplicative reporting and recordkeeping burdens, and increasing the flexibility of state compliance with program directives where likely, FHWA tried to reduce building costs and improve efficiency in program management. FHWA studied areas where project development could be consolidated or eliminated, recordkeeping criteria reduced or simplified, and state decision making expanded or given more flexibility.

Section 404 Guidance Document. In December 1985, the FHWA established an interagency work group composed of the National Marine Fisheries Service, the Fish and Wildlife Service, the Environmental Protection Agency, and the Army Corps of Engineers to examine projects which require permits under Section 404 of the Clean Water Act. The group will produce a joint policy statement and a guidance document that will improve interagency ties during the permit process.

Program Accomplishments

Highway Bridge Replacement and Rehabilitation Program (HBRRP). The extent of the bridge replacement and rehabilitation program will require wise innovation to protect original investments and ensure that bridges are properly maintained. Managing an effective bridge program requires assembling and evaluating enough facts to develop bridge projects by priority and use funds most efficiently. The FHWA prepared Demonstration Project 71 on Bridge Management Systems to promote bridge management concepts and to help state and local agencies produce comprehensive bridge management systems.

The FHWA produced two supplementary manuals to the Bridge Inspector's Training Manual, "Inspection of Fracture Critical Bridge Members" and "Culvert Inspection Manual." FHWA also produced companion courses for these manuals, covering specific components of types of bridges where in-depth inspection procedures and techniques are lacking.

Pavement Management. Pavement management spans a broad range of activity, from constructing new type pavements to implementing innovative technologies for

rehabilitating pavements. FHWA continues to develop and promote improved pavement management through updated policy, technical assistance, conferences, training, research, and demonstration and start-up projects.

The basis was a day-and-a-half seminar given by the FHWA and the American Association of Highway and Transportation Officials (AASHTO) to 158 state and Federal chief administrative officers. FHWA emphasized a new one-week training course on the basic premises of pavement design that covered the new AASHTO "Guide for Pavement Structures." FHWA's Pavement Rehabilitation Course, in constant demand, was updated and expanded to cover advances in asphalt and concrete rehabilitation technology and overlay design. The FHWA devised slide-narrative presentations on "Tire Pressure Impacts on Pavements," "Pavement Damage Due to Heavy Trucks," and "Recycling and Concrete Pavement Restoration" and developed an improved methodology to estimate the pavement damage that would result from proposed changes in truck size and weight provisions.

The FHWA acted to meet its national pavement program needs by reorganizing the offices of Design and Highway Operations into a new Pavement Division. FHWA provided technical assistance through 19 field visits to state highway agencies (SHAs) and developed a training project, employing "Automated Pavement Data Collection Equipment," and offered it to nine SHAs in 1986. This is designed to complement the Strategic Highway Research Program (SHRP) and to assist the states in their data gathering efforts.

FHWA has a vast materials program that includes field reviews providing positive direction to SHAs. FHWA also offered a one-week materials course to state and Federal highway engineers. In 1986, the FHWA made 12 material reviews, conducted 3 materials courses, and prepared a materials notebook.

Value Engineering. Value Engineering (VE) is a highly effective way to improve products and reduce costs. The FHWA's primary enterprise promoting VE to state highway agencies is to furnish training and technical assistance to state and local governments. The National Highway Institute (NHI) sponsored four 40-hour VE workshops to 130 participants from the states and the federal government. They studied 24 highway projects with an estimated initial cost of over $250 million using VE techniques. The trained teams recommended VE improvements worth an estimated reduction of nearly $36 million or about 15 percent.

The FHWA's VE Coordinator also presented VE displays to many SHA management officials. The FHWA provided training in VE procedures and technical assistance in developing programs. FHWA agents met AASHTO's Task Force on VE to develop proposed AASHTO Guidelines on VE and help OST plan a draft DOT Order.

Interstate. Total Interstate mileage open to traffic, including Howard-Cramer additions, is 41,620, 191 miles having been opened during the year. The total open to traffic on the 42,500-mile Interstate System is over 97 percent. The remaining mileage is under construction or design. Some 107 miles have been withdrawn.

Interstate Withdrawal and Substitution. Over $765 million was obligated on substitute highway projects, including nearly all the Federal funds made available during the fiscal year. This prompt obligation of Federal funds permitted the work to continue on substitute highway projects serving important local and regional transportation needs.

Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act). During 1985 and 1986, FHWA chaired an interagency working group to write one government-wide acquisition and relocation regulation applicable to all Federal agencies required to comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act). The White House designated DOT the lead agency, and FHWA, with authority delegated from the Department, took the lead in this process. On February 27, 1986, 17 Federal agencies, including DOT, published a government-wide final regulation implementing the Uniform Act.

Right-of-Way and Environment. The FHWA right-of-way workload for 1986 remains at near-record levels. The number of parcels gotten for highway right-of-way under the Uniform Act exceeded 50,000. Total cost of acquisition and relocation payments on right-of-way purchased with Federal funds was $913.57 million.

In February 1986, the Secretary of Transportation issued decisions regarding use of real property on federally assisted projects. The Office of Right-of-Way then began suitable policy reform to maximize income gained from property management work.

The Flexibility Document. On May 2, 1986, the FHWA issued The Flexibility Document, which emphasizes chances to speed planning, environmental, right of way, design, and other Federal-aid purposes under current Federal-aid statutes and regulations. Over 40 areas of flexibility were presented, with associated methods of petition and references to applicable policy.

Environmental Litigation. Twenty new environmental cases were filed in 1986. The main charges are as follows: 18 cases involving violation of Section 48 of the National

Environmental Policy Act, or section 4(f) claims; one involving charges of violating the Endangered Species Act; and one involving a public hearing. Twelve cases included violation of section 4(f) as one of the charges, if not the principal allegation. Seven cases concerned Interstate highways and the Sierra Club was a plaintiff in three of the cases.

Federal District Courts resolved 14 cases in 1986. All of these cases had the following issues in common: (1) a section 4(f) issue, even if it were not the chief issue when the complaint was filed; (2) appeals filed by losing plaintiffs but not by losing defendants; and (3) all were decided in favor of FHWA.

Noise Activities. In May 1986, FHWA issued "Highway Traffic Noise in the United States: Problem and Response," a result of requests both from foreign visitors and the general public for data about the problem of highway traffic noise and the United States' response. The report reviewed (1) the general nature of the problem, (2) FHWA's response, and (3) noise abatement endeavors that have been implemented or planned for future implementation.

The FHWA completed a study, "Review of Structural Design Criteria for Noise Walls," which indicates that some states may now be overdesigning noise walls due to the use of an unsuitable wind exposure class. FHWA wrote the AASHTO Subcommittee on Bridges and Structures advising AASHTO to modify its present method of design.

Simplified Air Quality Analysis Procedures. On April 7, 1986, the FHWA sent its field offices a discussion paper on the appropriate level of highway air quality analysis for Categorical Exclusion, Environmental Assessments/ Finding of No Significant Impacts, and Environmental Impact Statements. The paper yielded advice on the level of detail needed in an air quality analysis.

Research, Development, and Technology

Highway Systems. Major research is ongoing in FHWA's new structures laboratory to assess a creative method of designing highway bridges. Under joint funding and cooperative technical effort, FHWA and the American Iron and Steel Institute will probe further the auto stress design concept for steel bridges, using a 4/10-scale, two-span, three-girder steel bridge as the model. Studies which FHWA conducted or monitored resulted in reports on criteria for designing lightweight concrete bridges, fatigue behavior of prestressed concrete girders, and thermal effects in concrete bridge superstructures. A recent FHWA implementation project resulted in an improved version of the computer program, DESCUS, for designing curved steel box girders.

The FHWA developed the Acoustic Emission Weld Monitor (AEWM) to test the integrity of welds in steel. The microcomputer-based device observed the in-process welding of bridge components and detected, located, and described anomalies originating in the welding so that suitable action could be taken at once. FHWA applied and demonstrated AEWM in several bridge fabrication plants in the United States. As a result of these displays of product welding, plant control personnel conveyed interest in having the AEWM placed in their fabrication plants.

The Strategic Highway Research Program. SHRP, a specially funded, concentrated research effort to improve and preserve the highway infrastructure, followed the Strategic Transportation Research Study completed in 1984 by the Transportation Research Board. Since that time, the two organizations and AASHTO have developed SHRP, concentrating its efforts in six identified research areas: asphalt characteristics, long-term pavement performance, maintenance cost-effectiveness, bridge component design, cement and concrete, and snow and ice control.

The FHWA developed detailed research plans for each area under the guidance of an advisory committee for each technical area. The advisory committees consisted of representatives from state highway agencies, universities, the FHWA, and industrial federations. Under the highway reauthorization bill, the Highway Trust Fund would allocate about $30 million a year for five years.

Highway and Motor Carrier Safety

Highway Safety. Major research continues to emphasize roadside safety. Mechanisms to test roadside hardware, such as luminaire supports and guardrails, were improved. FHWA validated a reusable bogie vehicle which is being used for test crash research on the roadside hardware.

Several new designs of guardrail end treatments have been currently accepted for Federal-aid construction. In addition, another concept, developed by the FHWA and Southwest Research Institute, called energy absorbing safety end treatment, will provide a safe end terminal for those locations where the guardrail cannot be flared because of terrain difficulties.

Researchers also inspected bridge rails, transitions, and approaches to bridge rails. Six bridge rails were tested successfully with both small and standard size passenger cars. One of these rails (an aluminum rail atop a concrete safety barrier) also successfully redirected a 40,000-pound (18.1 mg.) intercity bus after a 60 mph and a 15 degree impact. A specially curved guardrail-bridge transition was tested and decelerated effectively both a small and a standard size passenger car.

The FHWA spent $208.2 million on hazard elimination programs and $151.9 million for rail-highway crossings. The primary kinds of hazard elimination programs related to intersection improvements such as traffic signals and channelization, installation of guardrail and median barriers, widening of pavements and shoulders, and increased pavement skid resistance.

Although 16 percent of all funds earmarked for rail-highway crossing projects consist of surface improvements, most designated monies are spent on warning devices: for example, automatic gates, flashing lights, signs, and markings. An added $9.9 million was spent for traffic engineering service, highway design, construction and maintenance, and identification and study of accident sites. Another $6.4 million for research went into improving roadside safety hardware, traffic control devices, and the implementation of research and development.

The FHWA completed two projects this year, with direct application in support of a Highway Safety Training Initiative by the National Highway Safety Advisory Committee, funded by the Rural Technical Assistance Program and specifically oriented to help city and county authorities. FHWA adapted three one-day highway safety courses from existing courses to be taught basically by instructors from Technology Transfer (T2) Centers. The second project is the National Conference on Highway Safety Training in Arlington, Texas. This conference gave a review of existing highway safety training courses and sessions on managing and financing a training program and state-of-the-art training techniques. In addition, highway safety core training occurred in 16 states. The agency held nine seminars under the auspices of the highway-rail crossing corridor demonstration project publicizing the use of lower cost grade crossing technologies, and technical assistance about highway safety was provided to states and other Federal agencies.

Motor Carrier Safety. In coordination with OST, the FHWA produced plans for total reorganization of the Office of Motor Carriers. The reorganized office was designed to address trucking concerns on a continuing and comprehensive basis, and to serve as the primary focal point in the Department regarding nearly all motor carrier transportation matters. Established October 1, 1986, the Bureau of Motor Carrier Safety, the Office of Motor Carrier Transportation, and the Office of Program Management Support were merged into a four office structure, with each bureau head directly accessible to the Associate Administrator for Motor Carriers.

As a result of the Secretary's Safety Review Task Force report and suggestions, FHWA's regional offices of motor carrier safety were reorganized, and field staff personnel increased. The Secretary asked approval from the Senate Appropriations Committee to reallocate funds within the Motor Carrier Safety account of the FHWA to be used to employ 150 additional safety specialists.

A basic course, "Motor Carrier Safety Academy Class," began in 1986 to train 150 additional safety specialists. The course consists of five weeks of classroom training at the Transportation Safety Institute (TSI) in Oklahoma City. Trainees learn Federal Motor Carrier Safety, Hazardous Materials, and Financial Responsibility Regulations. Related subjects include the power to inspect and examine, jurisdiction, driver selection and fitness, accident prevention and inspection, and safety and compliance review techniques. During 1986, 72 trainees completed the academy.

Each FHWA Regional Motor Carrier Safety Office has two specialists, a Federal Program Coordinator (FPC) and a State Program Coordinator (SPC). The FPC serves as the principal advisor/assistant to the Regional Director of Motor Carrier Safety for the preparation, monitoring, and/or modification of the regional annual work plan and budget.

The SPC responds to a need for a regional focal point for activities of the Motor Carrier Safety Assistance Program (MCSAP). The Federal-aid grant program provides funding to state motor carrier safety agencies for enforcing Federal and/or state safety and hazardous materials regulations governing interstate and intrastate operation of commercial motor vehicles on the nation's highways. In 1986, a total of 46 states and territories participated in MCSAP.

The commercial Motor Vehicle Safety Regulatory Review Panel, begun by the Secretary, as required by Section 209 of the Motor Carrier Act of 1984, met during 1986 and moved forward with its analysis and review of state laws and regulations.

Finally, the administration conducted important research during 1986. The FHWA, together with NHTSA, conducted tests to show the safety benefits of brakes on the front axles of heavy duty vehicles. This hands-on demonstration, held at the Vehicle Research Test Center, East Liberty, Ohio, compared several vehicle configurations, including vehicles equipped with full front brakes, limited front brakes, no front brakes, and one front brake. The results were quite convincing. Fully employed front wheel brakes allow all classes of vehicles to obtain shorter stopping distances, while maintaining better vehicle stability and controllability.

Traffic Operations

Traffic Congestion Alleviation. The FHWA is finding traffic congestion, in almost all major metropolitan areas, the number one traffic operations problem. Traffic has been

projected to grow 45 percent by the year 2010, and new facilities will have increased by only 6 percent. FHWA has enlarged its focus from typical traffic engineering and traffic control to "managing congestion" through better use of existing facilities, as well as studying and promoting actions affecting both transportation supply and demand.

FHWA staff started, and taught, training courses on highway capacity, arterial analysis, freeway and incident management, and traffic systems to FHWA, state, and local highway employees. The FHWA also co-sponsored a national conference on traffic congestion on urban freeways and arterial streets. Included were papers on traffic control, ride-sharing, transit, capacity, and land development, involving both public and private sector activities. FHWA staff undertook special studies to identify specific problems and their solutions on many congested highways. Computer simulated programs were used to evaluate alternative solutions.

Pavement Marking Programs and Procedures. Adequate pavement marking is one of the highest payoff, low-cost operational improvements that can be made to the nation's highways. A major project for FHWA in 1986 was to conduct process reviews of FHWA's field office operations and states, programs, policies, and procedures regarding pavement markings. FHWA conducted a review of the states, materials selection policies, specifications, contracting procedures, and quality control and inspection operations. The training course, "The Road to Better Pavement Markings," concerning requirements, evaluation techniques, and retroreflectivity measuring procedures, as well as basic technology of pavement markings, was presented to all states.

Highway Research Facilities. The Turner-Fairbank Highway Research Center (TFHRC), in McLean, Virginia, provided FHWA laboratory facilities for staff research. The TFHRC contains unique and specialized laboratories in highway driving simulation, human factors, roadside safety analyses, highway electronics, pavement strength, structures, hydraulics, and ecological instrumentation, adding actually to the nation's ability in highway research.

Highway Information Management. The FHWA began to study the potential of quantifying the movement of hazardous material. There is no exact data to support the estimate that four billion tons of hazardous material are transported yearly. Transportation of hazardous material by highway represents not only one of the largest class of products moved but also the largest risk to the public.

International Highway Programs. FHWA started an increased number of short-term technical assistance projects. Traditional long-term projects continue in Kuwait and Costa Rica, but FHWA dedication to its Saudi Arabia project ended when the Office of International Transportation and Trade gave OST the duty for routine management of this system. FHWA continues to play an advisory role to OST in that project and provides technical assistance to the coordinator for the Saudi program as needed.

The International Visitors Program arranged training (on-the-job, observation, and technical discussion) for 542 highway professionals who came to the United States from 49 countries throughout the world to study all areas of highway practices and exchange ideas and technology with their American colleagues.

The initiative to the People's Republic of China, begun in 1985, progressed with the visit of a high-level FHWA delegation to that country in the fall of 1985. This produced a draft agreement between FHWA and the Highway Bureau of China, which was further refined during 1986, and formally executed in September 1986, in conjunction with the return visit of a Chinese delegation to the United States. FHWA sent two experts in highway planning to China at the request of the World Bank to provide technical assistance to Guangdong Province in developing a comprehensive highway transportation plan and to familiarize Chinese highway officials with U.S. planning techniques.

FHWA experts visited a number of countries to help analyze and solve specific problems in highway management and engineering. Panama asked for aid in evaluating the structural adequacy of the deck of the "Bridge of the Americas" and developing a strategy for needed corrective action. Continuing an initiative begun in 1985, DOT and Uruguay signed a bilateral technical assistance pact on June 18, 1986, under which an FHWA team visited Uruguay to study the structural and maintenance condition of the Rio Santa Lucia bridge and prepare recommendations for corrective action. Responding to a World Bank request, FHWA furnished an Assistant Division Administrator to serve on a study team on assignment to Brazil. This team conducted a management review of the organizational structure and overall mission of the Sao Paulo highway agency and prepared recommendations to strengthen the operational effectiveness of that agency. FHWA also arranged for a visit of a former state highway department engineer to the southern provinces of Argentina to study and prepare suggestions concerning the maintenance of low-volume roads in the cold weather regions of that country.

Two foreign technical assistance projects were completed which had begun in 1985: projects in Yemen and Chad. New ventures during 1986 included preliminary discussions with the countries of Barbados and Nepal.

At the invitation and urging of international highway organizations, the FHWA resumed participation in and

support for the goals and objectives of such international bodies. One such act was the designation of FHWA emissaries as reporters to the 12 standing committees of the Permanent International Association of Road Congresses (PIARC). The PIARC is an important international forum for exchanging information among road professionals from both developed and developing countries. The participation of two FHWA representatives in the annual meetings of the Permanent Executive Committee and the three Permanent Technical Commissions of the Pan American Highway Congress further illustrated FHWA resumption of such a role. Such meetings resulted in a proposal to reactivate the Darien Gap Commission to revive interest in the completion of this section of the Pan American highways.

Disadvantaged Business Enterprise

As a result of aggressive efforts by FHWA and the states to implement the DBE program, DBE participation nationwide for the past three fiscal years has exceeded $1 billion. In 1986, the Federal-aid share of DBE contract awards, plus subcontract commitments, totaled $1,344 million. This represented 12.3 percent of the Federal-aid share for all prime contracts awarded in 1986.

In response to congressional direction, the FHWA implemented a demonstration bonding program for economically and socially disadvantaged businesses in New York, Pennsylvania, and Florida. This demonstration program furnished, through its consultants, technical, managerial, and other types of assistance to assist DBEs in meeting minimum bonding standards and to obtain bonds through available bonding sources. In addition, the FHWA has also provided technical assistance to the Office of Small and Disadvantaged Business Utilization in OST relative to the development of a DOT bonding assistance program.

Participation by women in Federal-aid prime contract awards and subcontract guarantees for 1986 totaled $332.8 million, or 3 percent of the Federal-aid contracts. Under the minority business enterprise supportive services program, the FHWA in 1986 allocated $8.6 million to help train minority businesses.

Federal Railroad Administration

The Federal Railroad Administration (FRA) is responsible for preparing, developing, and administering programs to achieve safe mechanical and operating practices in the railroad industry. FRA's duties include enforcing Federal laws and regulations which promote the safety of railroads, administering railroad financial assistance programs, and conducting research and development in support of improved railroad safety.

The FRA's achievements during 1986 include:

- a broad effort in safety research and development to keep the railroad industry safe for railroad workers and the traveling public
- creation of Operation Lifesaver, Inc., to promote safety at rail highway grade-crossings;
- work with Amtrak labor and management and other concerned parties, to reduce Amtrak's dependence on Federal financial assistance, while operating a more efficient, yet safe and timely, nationwide rail passenger service;
- rehabilitation of Washington, D.C.'s historic Union Station, to transform it into a commercial center as well as a railroad station;
- a plan to return Conrail to the private sector;
- issuing significant alcohol and drug regulations for the railroad industry; and
- execution of a thorough program of Federal assistance for national, regional, and local rail services.

Safety

The FRA continues efforts to make the nation's railroads safe. FRA's overall goal is to reduce injuries and fatalities sustained by employees, trespassers, and those in grade-crossing accidents, and to lessen the risks involved in rail passenger transportation and the movement of hazardous materials by rail. FRA's specific annual safety objectives now relate to these general goals.

The FRA has 325 safety inspectors monitoring the railroad industry's compliance with FRA regulations. Over 100 state inspectors assist them. FRA uses the National Inspection Plan (NIP) to allocate inspection assets. In preparing NIP, it instituted important new modeling techniques to manage more effectively the resources available for inspection and execution activities.

1986 was the safest year on record for the railroad industry, as both the number of accidents and the accident rate declined, a trend begun early in the decade. There were 2,761 railroad accidents in 1986, a drop of almost 20 percent from 1985; and the accident rate per million train miles declined almost 19 percent.

Operation Lifesaver. The rail industry, supported by the states, labor, national safety societies, and Federal agencies to promote rail-highway crossing safety nationwide, chartered a nonprofit corporation, Operation Lifesaver, Inc. (OLI). Many parties, like the FRA, the FHWA, the NTSB, several states, railroads, labor associations, and the American Trucking Associations, joined to plan and promote the projects of Operation Lifesaver. DOT joined the United States Postal Service (USPS) to foster safety at rail-highway crossings among postal employees. USPS designed and used a poster warning of risks at crossings. In addition, each employee received a pamphlet explaining the dangers confronted at crossings.

Alcohol and Drug Program

The FRA's final regulation governing alcohol and drug use in railroad operations became effective on February 10, 1986. The regulation contained a ban against the use, possession, or being under the influence of alcohol or drugs while on duty. The regulation also required post-accident testing, pre-employment drug screening, identification of troubled employees, and improved accident reporting. In addition, the regulation gave the railroads the authority to test breath or urine based on reasonable cause.

The program was designed to inspire voluntary prevention programs, while at the same time to produce testing provisions to help eradicate alcohol and drugs from railroad operations. The FRA held conferences and training sessions, and prepared a comprehensive Field Manual to help the industry achieve its goal.

The FRA's initial review found three railroads taking part in reasonable cause breath/urine testing programs. About 5 percent of the samples provided after post-accident testing events were positive for alcohol or illicit substances. FRA concluded that the program was having a favorable impact on safety, but that other efforts were crucial.

As part of that added effort, the FRA actively advanced voluntary plans to identify employees with alcohol or drug problems and urge that they seek counseling. Union Pacific's "Operation Red Block" and corresponding prevention programs were offered about half of the railroad employees in 1986.

Conrail

The FRA continues its efforts to return Conrail to the private sector, although without final success. In two separate payments, FRA furnished a total of $13,956,000 to Conrail for payment of separation allowances to the railroad's train service employees voluntarily terminated by Conrail's work force reduction program.

Regulatory Activities

Economic regulatory activities continue to center on implementing the Staggers Act of 1980 and to support deregulating rail rates and services where justified by competitive realities. The FRA's initiatives are driven by the pressing need to resolve disputes between shippers and carriers over interpretation of the Act, and to prevent efforts to reduce the benefits of the Act through statutory changes.

In addition to FRA participation in ICC proceedings, the Administrator testified at annual Staggers Act oversight hearings, showing how Staggers benefited shippers and carriers and reaffirming DOT objection to changes which would tangibly reduce those benefits. He also testified against bills which would have imposed a second level of regulation through the courts, under changes to the antitrust laws. Both bills failed.

The major proceedings in which the FRA produced comments for DOT input concerned the continuing debate over the meaning of the Staggers Act. Further comments were submitted in rulemakings devised to lift regulation where unnecessary to protect shippers, and to set guidelines for railroad revenue adequacy, non-coal traffic rates, railroad transportation contracts,and expansion of deregulation.

Washington, D.C.'s Union Station

Work continues on schedule to transform Washington, D.C.'s Union Station into a commercial and transportation complex that would ultimately house a railroad station, retail stores, and offices.

The Union Station Redevelopment Corporation (USRC) Board of Directors chose Pittsburgh, Pennsylvania's Dick Corporation as the project's general contractor to rehabilitate and renovate the station to comply with modern building code standards. These include cleaning the building and installing a modern electrical system, a new heating and air conditioning system, a fire protection system, and access for the handicapped.

National Railroad Passenger Corporation (Amtrak)

Amtrak continues to increase revenues and cut costs, raising its revenue-to-cost ratio to .62, the highest in the Corporation's history. The FRA works closely with Amtrak to keep improving its operations and financial outlook.

Amtrak's passenger-miles improved 3.9 percent to five billion, an all-time record. Operating revenues rose to $861 million, also an all-time high. Federal funding totaled $591 million, down 13.6 percent from 1985 and 34.1 percent from 1981.

Amtrak continues to pledge train and engine service on routes where freight carriers now provide crews, thereby saving money, and extending the innovative labor agreements negotiated in 1984 for the Northeast Corridor and Auto Train to other routes.

After many weather-related accidents on the Amtrak system, at the request of Congress, FRA inspected the weather alert system that Amtrak and its contract railroads use to notify its employees of weather-related problems. The probe decided that the system was passable but could do better, by increasing the number of radio receivers that pick up National Weather Service programs and revising policy relating to weather-related threats.

Local Rail Service Assistance

Under the Local Rail Service Assistance Program (LRSA), funds were available to states for rail planning, track rehabilitation, rail facility construction, and substitute service projects. LRSA staff processed 35 planning requests totaling $2,974,303, 23 entitlement applications totaling $6,147,711, evaluated 30 discretionary petitions amounting to $13,891,650, awarded 23 discretionary grants totaling $10,916,999, approved 16 state rail plan amendments, and drafted 264 letter-of-credit drawdowns totaling over $14 million.

Policy

The FRA worked closely with others in the Executive Branch to estimate the feasibility of employing the so-called rail garrison mode for basing the "Peacekeeper" intercontinental ballistic missile. Designed to satisfy objectives set forth by the Scowcroft Commission and Congress, the rail garrison would appear to give a significant degree of mobility for the "Peacekeeper," enhancing its capability of withstanding an attack.

The FRA renewed a labor-management cooperative grant with the Chicago commuter rail system (METRA), made to include employee involvement in safety training. CPR training under the program for METRA employees has been credited with saving several lives.

The Brotherhood of Maintenance of Way Employees struck the Maine Central Railroad, and the 76-day strike spread to the other railroads in the Guilford Transportation System and to major railroads throughout the country. Although the initial strike involved scope of work and

labor protection issues, the shutdown led to the key issue of a railroad union's right to engage in secondary picketing under the Railway Labor Act and a railroad carrier's right to protect itself from such actions.

The Maine Central strike yielded many court actions, including the Supreme Court upholding railroad unions rights to engage in secondary picketing, forced the President to create an Emergency Board, caused a congressional advisory board to issue a special report, and led Congress to enact two laws to end the dispute. The FRA gave policy, legal, and economic advice to Federal agencies involved in the dispute, including Congress, the White House, the Secretary of Transportation, and the National Mediation Board. Further, FRA maintained liaison with shippers, railroads, unions, and Congressional delegations, and persuaded local transit authorities and others to mitigate the effects of a potentially far-reaching interference with interstate commerce.

Research and Development

The FRA safety research and development (R&D) program has three major aims: to produce an independent, factual, and objective body of knowledge on which to build timely and proper safety regulations and standards; to be alert and sensitive to potential safety threats arising from unfolding statistical trends, new technologies and operating practices, or field-safety research inspections; and to cooperate with industry to produce safer equipment, physical plants, and operating practices by promoting voluntary achievement of improved safety measures.

New developments in the railroad industry consisted of imaginative approaches to new generations of equipment design, radical deviation from traditional service, and traffic appeal with traits and commodities previously scarce in rail movement. It is important to the FRA that changes of the degree now underway be completely examined and that conceivable safety consequences be explored before extensive implementation takes place. Ideally, from both timeliness and efficiency perspectives, the research, development, design, and testing of next-generation systems should be coincident with safety guarantees.

Major successes of the FRA research and development program encompass:

- fulfillment of the Wheel Safety Research Program with the purpose of expanding the safety record of rail car wheels by producing technically sound wheel removal criteria and guidelines for safe design and operation based on well-planned, coordinated laboratory track tests and analyses;
- completion of research and production of a prototype for Residual Stress Measurements in Railroad Wheels utilizing a nondestructive method; and
- the end of Phase III dynamic buckling tests on both tangent and 5-degree curved track by operating a remotely-controlled train at various speeds over track with preset misalignments and ballast force conditions while artificially heating the rail to induce large compressive forces.

Civil Rights

The FRA continues to recruit minorities actively for agency posts, works with industry to help minority business programs on the various railroads, and aggressively pursues discrimination complaints.

FRA's Office of Civil Rights (OCR) concluded 44 desk audits of Federal financial recipients affirmative action programs, and conducted eight on-site reviews of financial recipients affirmative action programs. OCR also inquired into two external complaints and administratively closed one. The investigative report on the other was sent to OST for a final decision.

The Office also worked closely with FRA staff, conducting workshops during Professional Secretaries Week, drafting the FRA EEO Counseling Order, offering counseling, and shaping the FRA policy statement, "Freedom from Sexual Harassment" in the workplace.

National Highway Traffic Safety Administration

The National Highway Traffic Safety Administration (NHTSA), was authorized by the Highway Safety Act of 1970 to implement safety programs under the National Traffic and Motor Vehicle Safety Act of 1966 and the Highway Safety act of 1966, and consumer programs mandated by the Motor Vehicle Information and Cost Savings Act, as amended.

Its mandate is to reduce deaths, injuries, and economic loss resulting from motor vehicle accidents by establishing safety performance standards for motor vehicles and by helping state and local governments develop and implement their highway safety programs more effectively. NHTSA investigates safety defects in motor vehicles, administers fuel economy standards, gives counsel to states and communities to reduce the threat of drunk drivers, promotes use of safety belts, child safety seats, and automatic restraints, investigates odometer fraud, enforces vehicle theft regulations, and provides the consumer data on motor vehicle safety and the crashworthiness of new passenger vehicles. It also researches driver behavior and traffic safety in order to develop the most efficient and effective means of effecting safety improvements.

The Traffic Safety Problem and Current Trends

A total of 46,056 persons lost their lives in traffic accidents in 1986. The fatality rate, the number of deaths per 100 million vehicle miles of travel, rose slightly in 1986 to 2.51 from 2.47 in 1985.

Alcohol abuse remains the number one highway safety problem in the nation. Further, failure to use safety belts in nearly every passenger car and light truck on the road today result in nearly twice as many front-seat occupant deaths and injuries as would otherwise be the case.

The economic cost of traffic accidents is overwhelming; each accident typically affects more than the victims. Family, friends, and employers are traumatized. All share the lost productivity, property damage costs, and the increased expenses for medical, insurance, and municipal compensation resulting from the accident. Traffic accidents have been estimated to cost the nation more than $70 billion every year.

Program Emphasis

NHTSA continues its policy of addressing highway safety through a balanced approach, concentrating on solutions involving both the vehicle and the driver. This approach provides a careful balance between highway safety and motor vehicle safety programs.

In the highway safety arena, NHTSA continues to emphasize efforts to increase safety belt and child safety seat usage and to reduce the incidence of drunk driving.

The drive for safety belt use laws continues to spread. DOT's July 1984 Standard No. 208 automatic accident protection rule not only set a timetable for the introduction of automatic accident protection; it also encouraged state safety belt laws. Twenty-four states and the District of Columbia enacted safety belt use laws in effect by the end of the year, and belt use rose to 39 percent. It is presumed that states with safety belt use law in 1986 had about 7 percent fewer deaths in the front seats of passenger cars than did states without such laws.

Also, 1986 marked the beginning of the phase-in period for automatic accident protection — air bags or automatic belts. Ten percent of all new cars include one of these automatic systems.

NHTSA's method of dealing with drunk driving stresses promoting community-based programs that include public education to enhance driver perception of the risks of driving while under the influence of alcohol, and the risk of being arrested by enforcement officials. In addition, NHTSA made notable progress in its plan to reduce drugged driving, completing field tests of techniques to identify drugged drivers and beginning to effect a national program to train police in these techniques.

NHTSA continues its research and rulemaking efforts to improve motor vehicle safety technology, particularly protection against contact with the steering assembly and side impact.

Enforcement emphasis continues to be on improving NHTSA's ability to identify quickly safety-related defects in motor vehicles and to ensure that defects are corrected in the shortest possible time.

Motor Vehicle Safety

Crashworthiness. NHTSA continues research on test procedures and vehicle design characteristics to reduce the number and degree of human injuries, emphasizing driver and front seat passenger safety, improved frontal structures, side-impact buffer, pedestrain safety, and preventing occupant ejection in rollover accidents.

NHTSA built a research program to produce countermeasures for driver chest impacts with the steering assembly, based on safety advances urged in an agency evaluation. Tests will be conducted to assess the safety benefit of improved steering assemblies and make comparisons with current production systems.

Simulation models are being produced to fathom injury mechanisms better and to select safety changes for instrument panels, windshields, and other elements that would reduce trauma to right front seat passengers. Inquiry about shielding the head was expanded to assess the possibility of padding roof rails and pillars in cars.

Side collisions continue to be a leading cause of fatalities and injuries to motor vehicle occupants. NHTSA continues its research in improving side-impact protection in passenger cars and light trucks. Computer modeling and analyses assessed ways to improve safety skills in side impacts.

Occupant ejection from cars and light trucks greatly raises the risk of serious injury. Numerous projects are underway to lessen the risk of ejection by improving side doors and windows.

Air Bag Demonstration Program. NHTSA and the General Services Administration (GSA) procured about 5,000 model year 1985 cars equipped with driver's side air bags as part of GSA's interagency motor pool fleet. The performance of these systems is being monitored and evaluated. In addition, 539 driver's side air bag retrofit kits are being tested in police fleets. An all-mechanical driver's side air bag is being developed and tested. This system has a mechanical accident sensor/initiator, instead of electronic components found in most air bag systems.

Child Passenger Safety. Since NHTSA's revised safety standard for child seating systems was issued in 1981, safety seat use for children ages four and under has more than tripled, from 22 percent in 1982 to 72 percent in 1986. Now, all 50 states and the District of Columbia have child passenger safety laws.

Child passenger safety advocates urged states to improve existing child passenger protection laws and, in 1986, passed bills in Florida, Iowa, New York, Rhode Island, Virginia, and West Virginia.

A Final Rule was issued to amend the standard requiring all child safety seats (other than child harnesses, booster seats and restraints designed for physically handicapped children) to pass a 30 mph test without attaching a tether anchorage, and expunging the condition that tethered seats be subjected to a 20 mph test. This will ensure that children using child safety seats with unattached tethers have the same accident protection as those in seats designed without a tether.

Passenger Safety/Safety Belts. NHTSA continues its comprehensive program to increase safety belt and child safety belt use.

Safety belts hold the greatest promise for a prompt and dramatic decline in deaths and injuries resulting from automobile accidents. Use of safety belts grew from 23 percent in late 1985 to 40 percent during the similar 1986 period. This notable increase can be attributed to a Federal, state, and community partnership started in 1982 to make Americans more aware of safety belts and their effectiveness in preventing deaths and injuries.

NHTSA provided grants to 13 states to increase the public's knowledge and awareness of the benefits resulting from the use of safety belts and child safety seats and to encourage their usage.

NHTSA successfully persuaded more than 50 prominent national organizations to conduct safety belt programs for their employees and constituents. Included were groups like the American Academy of Pediatrics, the American Nurses Association, the American Public Health Association, the American Red Cross, the National Council of Negro Women, and the National Extension Homemakers Council.

The President signed an Executive order requiring Federal employees to use safety belts.

NHTSA created a 20-state workshop for employers and safety officers to provide private and public sector employers with training and technical assistance on safety belt usage programs.

Biomechanics. Biomechanics is the field of study that applies engineering principles and techniques to understand and control impact trauma in humans.

Research efforts focused on injuries to the head, throat, abdomen and lower extremities in motor vehicle accidents, primarily unrestrained front seat occupants involved in either a frontal or side collision.

Congress appropriated $10 million to implement the counsel of the NHTSA-sponsored National Academy of Science report on "Injury in America." The Academy decided that a Federal program expanding trauma research was vital, and urged the Centers for Disease Control (CDC) to house such a group. Through an interagency agreement between NHTSA and the CDC, the CDC established an injury prevention research program. A panel reviewed proposals to start five Injury Prevention Research Centers and to fund approximately 30 research and demonstration grants. The research included epidemiology, prevention, biomechanics, treatment, and rehabilitation.

Heavy Vehicles. Heavy vehicle research attempts to improve truck and bus safety by improving their accident avoidance and crashworthiness capabilities.

Three Congressional studies were prepared in reply to Sections 216 (Heavy Truck Safety), 217 (Truck Occupant Protection), and 219 (Safety Related Devices) of the Motor Carrier Safety Act of 1984. In addition, an 18-month in-fleet service test of the life-cycle costs and performance of automatic brake adjusters continues; a "Component Performance Factbook" and a "Dynamic Performance Handbook" were published; full-scale vehicle testing to assess the efficiency of up-to-date anti-lock braking systems was conducted; and NHTSA took par in a FHWA demonstration of the safety benefits of front axle brakes.

Lighting. NHTSA called for comments on revised Standard No. 108, "Lamps, Reflective Devices, and Associated Equipment," to simplify some of the performance requirements, while maintaining existing levels of safety, and thereby help to reduce unnecessary burdens placed on vehicle and lighting manufacturers.

An NPRM advised that replacement lighting equipment be marked and identified as to function, like the Society for Automotive Engineers' (SAE) Recommended Practice J759, and that the equipment bear a DOT mark as certification of compliance. This method of compliance marking is now the manufacturer's option. A final rule was published allowing a manufacturer to provide an enhanced upper beam in Type F headlamp systems by wiring the lower beam headlamp systems to be activated simultaneously with the upper beam headlamp.

An NPRM let motor vehicles, including motorcycles, be equipped with Type A and E headlamps with a simplified mounting system.

Visibility. Vision interprets more than 90 percent of the data a driver receives. Research is focusing on the problem of blind spots unresolved by mirrors. NHTSA produced a uniform protocol for preliminary evaluation of current and future rear view systems. A request for comments was published on a petition to amend Standard No. 107, "Reflective Surfaces," to limit glare requirements for all non-metallic as well as metallic components in the driver's field of vision.

Controls and Displays. Accidents typically involve various combinations of failures by the driver, the vehicle, and the roadway. Knowing useful accident avoidance countermeasures requires a grasp of the circumstances which lead to accidents, and the contributions of both driver and vehicle failure.

NHTSA completed a study of the interaction between driver and vehicle during certain critical accident situations. This study developed a comprehension of how a driver performs manual control tasks. Emphasis was on the type of behavior that occurs during unexpected accident avoidance situations.

NHTSA finished work on improving vehicle and driver computer models for simulation of emergency maneuvers during braking and steering. Research examined the braking, steering, and rollover balance of "modified suspension" or "high-lift" vehicles.

Brakes. A petition from the California Highway Patrol to begin rulemaking to prohibit trailer parking brake systems which could give operators a false sense of security stated that parking brakes on some trailers will initially hold if parked on a grade, but holding force will lessen as air pressure in the trailer's brake system bleeds off, and an unattended trailer can roll away. NHTSA offered two amendments to Standard No. 106, "Brake Hose." One revised and clarified the process for testing the adhesion between layers of rubber hose; the other updated the "referee" brake fluid material used for testing. Similar changes in brake fluid use were made to Standard No. 116, "Brake Fluids."

Alcohol

Drunk driving remains the number one killer on the highway. A 1986 poll in 15 southern states showed that the public's number one health and safety priority remains avoiding driving after drinking.

Ten states now have had three years of experience under Congressionally-mandated Alcohol Traffic Safety Incentive Grants (Section 408) that help them deal with their drunk driving problems. Analysis of drivers involved in fatal accidents from 1982 through 1986 reveal that the ratio of fatal accidents involving an impaired driver declined from 30 to 22 percent.

A safety coalition organized to urge managers of stadia and other public facilities to promote within their facilities and communities Techniques for Effective Alcohol Management (T.E.A.M.), sponsored by groups like the National Basketball Association and Major League Baseball. T.E.A.M. tries to make sports events safer and more enjoyable for the fans through stadium reminders about the dangers of drinking and driving and the value of safety belts and child safety seats.

An additional eight states passed laws in 1986 making their minimum drinking age 21, bringing the total to 45 states.

Traffic Records

Congress earmarked 10 percent of Section 402 funds to be set aside to improve state traffic record systems during 1985-1986. More than $26 million was used to:

- produce comprehensive, computerized safety record-keeping systems;

- improve state linkage with the National Driver Register;
- evaluate current state record systems;
- update state accident report forms;
- link sub-files within state systems;
- upgrade capabilities for roadway accident location analysis;
- design state and local systems in an effort to make them more responsive to data users; and
- develop capability to produce reports to perform computerized statistical analysis in a form required to support problem identification, project evaluation and program monitoring at all levels of government.

National Driver Register

The National Driver Register (NDR) is a central, computerized index of state reports on drivers whose driving privileges have been denied, suspended, or revoked. Requests for driver licenses are routinely checked against the Register to learn if an applicant has a bad driving history in another jurisdiction, and to deter an unsafe driver from getting a license from that state.

The NDR changed dramatically as a result of the National Driver Register Act of 1982, which calls for improvement of on-line computer access potential so that state licensing agencies can exchange data on problem drivers within seconds, rather than two to three weeks. Delaware implemented this new ability in 1986 and used it successfully to deny licenses to unfit applicants while they were still "at the counter." The NDR also awarded contracts to North Dakota, Ohio, Virginia, and Washington for a pilot test of the new Problem Driver Pointer System. The Remote Job Entry project, begun in 1983 to provide overnight service as an alternative to the usual two-week mail system, was expanded to five additional states.

Police Traffic Services

Law enforcement agencies continue to focus their resources on enforcing laws against driving under the influence of alcohol and other drugs, other moving violations, and occupant protection.

NHTSA developed a training curriculum on occupant protection usage and enforcement for law enforcement personnel. The agency held a seminar to produce a Police Traffic Services Management Information System software package and a traffic data report similar to the FBI's Uniform Crime Report. NHTSA also developed a training program on operating sobriety checkpoints, with help from Maryland.

Emergency Medical Services

Prompt, appropriate medical care and rapid transport to a trauma center can mean the difference between life and death for thousands of traffic accident victims. Data available from several trauma centers across the country indicate significant reductions in multiple trauma deaths within one year of starting a true trauma system. Emergency Medical Services (EMS) pre-hospital systems complement the resources of a sophisticated trauma center.

EMS performance and achievements in 1986 include a study on trauma care to identify factors essential for state and community development of future trauma systems. NHTSA promoted development of five national consensus voluntary EMS standards through the American Society of Testing of Materials F30 Committee on EMS. NHTSA trained 60 emergency medical technician (EMT) instructors to teach pediatric trauma management courses to local EMTs. NHTSA published "General Management Guidelines for Public Safety Aviation Units" to assist states in operating public safety helicopter services. NHTSA directed two training courses, "Emergency Medical Technician-Intermediate" and "Instructor Training Program for EMTs."

Motorcycle Safety

Motorcycle accidents accounted for 4,551 deaths in 1986. Factors prompting motorcyclist fatalities include motorists violating the motorcyclist's right of way, the failure of riders to wear safety helmets, a lack of safe riding skills, and alcohol use by motorcyclists and other motorists.

NHTSA completed a study on the effect of helmet law repeal on motorcycle fatalities. The results show that the repeal of helmet use laws increased the fatality rate by 10 to 33 percent. Had helmet use laws continued in effect in states that repealed or weakened them, an estimated 158 to 420 fewer motorcycle rider fatalities would have occurred in 1984, the last year for which complete data were available.

NHTSA and the Motorcycle Safety Foundation held three regional workshops for state and local highway and motorcycle safety officials. The workshops provided current data on motorcycle safety and methods to foster greater public participation in motorcycle safety programs.

Pedestrian Safety

There were 6,771 pedestrians killed in 1986. Large cities remain the major location of these accidents and fatalities. As many as 50 percent of those killed in traffic mishaps in some cities are pedestrians.

NHTSA continues to provide states with information and technical assistance to improve pedestrian safety. Included are accident typing manuals, model pedestrian safety regulations, the NHTSA "Safe Street Crossing

Program," (featuring "Willy Whistle") and the Proceedings of the 4th Annual Pedestrian Conference.

55 MPH Speed Limit

The percent of states reporting highway speeds exceeding 55 mph increased and bills to increase the national maximum speed limit to 65 mph were introduced in both the House and Senate.

Arizona, Maryland, New Hampshire, Rhode Island, and Vermont submitted speed certification data for 1985 indicating potential noncompliance with the 55 mph law. All but Arizona came back into compliance in 1986. Consequently, all funds reserved for obligation were released to those four states. California, Maine, Nebraska, and Utah submitted speed certification data for 1986 suggesting they are possibly in noncompliance with the 55 mph speed limit law.

Consumer Activities

Bumpers. In 1983, NHTSA began an experimental consumer news show on bumpers to present objective and useful information about the damage susceptibility of automobiles in low-speed front and rear collisions. NHTSA issued an NPRM in 1986 requesting comment on this program, as well as other issues pertaining to a bumper information program. The comments indicated that no real-world accident data exist to prove a link between laboratory test results and actual bumper repair cost experience of consumers. NHTSA also released consumer research results which found bumpers not considered an important attribute in vehicle purchasing decisions.

New Car Assessment Program. Under the New Car Assessment Program (NCAP), established under Title II of the Motor Vehicle Information and Cost Savings Act, DOT furnishes comparative data on new cars by make and model in three areas: crashworthiness, damageability, and ease of diagnosing and repairing electrical and mechanical systems.

This experimental program has not only increased consumer awareness of differences in new car crashworthiness, but has also encouraged some manufacturers to improve the performance of their vehicles.

Cars are crashed in frontal tests at 35 mph into a fixed rigid barrier. Each vehicle carries two instrumented adult dummies which are placed in the front seating positions and are wearing both lap and shoulder belts. During the test, appraisals are made of the severity of impact to the head, chest, and thighs of each dummy. The 1986 program included testing of station wagons, multipurpose vehicles, and pickup trucks.

NHTSA completed additional tests of vehicles, using a deformable moving barrier (DMB) instead of the fixed rigid barrier used in conventional tests. These tests were designed to assess the role of vehicle weight and structure in occupant accident protection. Extensive data analyses are now underway to compare the DMB tests and real-world accidents.

Vehicle Theft. The Motor Vehicle Theft Law Enforcement Act of 1984 added a new Title VI to the Motor Vehicle Information and Cost Savings Act to thwart the theft of motor vehicles. It mandated a theft prevention standard that requires manufacturers to mark designated high-theft car lines with an identifying number or symbol. It also provides increased criminal penalties for trafficking in stolen vehicle parts.

The Act also obliges insurance companies providing comprehensive insurance, and rental and leasing companies with fleets of 20 or more vehicles in the U.S. to submit annual reports to the Secretary of Transportation, beginning October 1986.

Fuel Economy. In reply to petitions from General Motors and Ford to lower passenger car fuel economy standards for 1986 and succeeding years, NHTSA issued an NPRM to amend the 1986 standard to 26 mpg. NHTSA limited its proposal to the 1986 model year (MY) due to the chance of serious harm to GM and Ford, and the limited time that remained to amend that year's standard. After receiving extensive comment on its proposal, NHTSA issued a final rule reducing the 1986 standard to 26 mpg.

Auto Safety Hotline. Workers at NHTSA's toll-free Auto Safety Hotline provide recall information, receive motor vehicle safety defect complaints, and furnish consumers information about enforcement actions, fuel economy ratings, test crash results, drunk driving, the Federal odometer law, motor vehicle safety standards, and other safety topics.

Enforcement. There were 186 safety recall campaigns involving 3.7 million vehicles in 1986. NHTSA influenced 29 of the campaigns, involving roughly 1.8 million motor vehicles. In addition, 1.3 million units of motor vehicle equipment and 145,000 tires were recalled.

Major Recall Campaigns

NHTSA effected major recall campaigns involving 1983, 1984, and 1985 Chevrolet Camaro and Pontiac Firebird shoulder seat belt retractors, 1984 Ford Tempo and Mercury Topaz driver's seat back assemblies, 1980, 1981, and 1982 Toyota Tercel lower control arms, and Volvo 244 and 245 throttle cab assemblies.

Compliance Testing

NHTSA tested 64 vehicles for 172 performance qualifications related to 12 Federal motor vehicle safety standards. In addition, 1,480 tires and 1,594 equipment items were subjected to performance criteria connected with nine safety standards. The 1986 testing program resulted in a 1.4 percent failure total for motor vehicles and 20.4 percent failure for motor vehicle equipment. There were no tire failures.

Some of the major vehicle and equipment recalls include: 138,000 vehicles which failed to meet allowable fluid spillage requirements set forth in Standard No. 301, "Fuel System Integrity"; 33,000 vehicles which failed to meet the windshield retention requirements of Standard No. 212, "Windshield Mounting"; 104 school buses which failed to comply with the requirements of Standard No. 222, "School Bus Passenger Seating-Crash Protection"; 1,902 slide-in camper units which failed to satisfy the requirements of Standard No. 126, "Truck-Camper Loading"; 4,920 turn signal and tail lamps that failed to comply with the specifications of Standard No. 108, "Lamps, Reflective Devices, and Associated Equipment;" 256 wheel rims that failed to meet the requirements of Standard No. 120, "Tire Selection and Rims for Vehicles Other than Passenger Tires"; and 261,042 child safety seats because they failed to comply with the requirements of Standard No. 213, "Child Seating Systems."

Odometer Tampering

NHTSA continues its odometer enforcement program, confirming odometer fraud in 38 investigations conducted in 38 states. The probe discovered that the mileage had been rolled back on 344 vehicles. Eighteen cases involving large-scale odometer tampering were handed over to the U.S. Department of Justice for criminal prosecution. Eight cases were referred to state enforcement agencies. Results of 12 investigations were given to consumers so that they could take private civil actions to recover damages.

Litigation

Automatic Restraints. (Standard No. 208) State Farm v. Dole; New York State v. Dole; National Association of Insurance Commissioners v. Dole. These consolidated cases sought judicial review of the Secretary's July 11, 1984 decision to require the installation of automatic restraints on MY 1990 vehicles unless states with two-thirds of the nation's population enacted qualifying mandatory seat belt laws prior to that time. Briefs were completed by February 28, 1986 and oral arguments were heard March 11, 1986. On September 18, 1986, the D.C. District Court of Appeals entered judgment, denying that part of the petition of the State of New York that argued for a standard requiring air bags only and dismissing the remainder of the petitions as not yet ripe for review.

Age 21 Drinking Law. South Dakota v. Dole. South Dakota filed a complaint in the District Court for South Dakota, challenging legislation passed by Congress in June 1984, that provided for withholding a percentage of Federal-aid highway funds from states that failed, by October 1, 1986, to pass legislation establishing 21 years of age as the minimum drinking age for all alcoholic beverages. The complainant alleged that the legislation was unconstitutional, violating the 10th and 21st amendments.

The government moved for dismissal on the grounds the action was premature, and that the law was indeed constitutional. In 1985, the Court granted the government's motion to dismiss, denying the plaintiffs constitutional claims. South Dakota filed an appeal of the decision in the Court of Appeals for the 8th Circuit. A number of other states and administrative bodies joined South Dakota's appeal as *amici curiae*. The matter was argued before the 8th Circuit Court in February 1986, and that Court affirmed the District Court's judgment on May 21, 1986. On August 14, 1986, South Dakota petitioned the Supreme Court for *certiorari* to review that decision.

Light Fuel Truck Standards. Center for Auto Safety v. NHTSA. The Center for Auto Safety and other groups filed a petition on April 10, 1985, in the D.C. Circuit Court of Appeals, for review of fuel economy standards for 1985 and 1986 MY light trucks and the denial of their petition for review of these standards. NHTSA amended the standard for MY 1985 to 19.5 mpg and set the standard for MY 1986 at 20 mpg. On June 20, 1986, the Court of Appeals upheld the standard.

1986 Model Year Passenger Car Fuel Economy Standard. Public Citizen v. NHTSA, State of California v. NHTSA, City of New York v. NHTSA, and City of Los Angeles v. NHTSA. In these consolidated cases, filed in the D.C. Circuit Court of Appeals, the parties filed petitions for reevaluation of NHTSA's amendment of the MY 1986 passenger car fuel economy standard which lowered the standard from 27.5 mpg to 26 mpg. By July 1986, all parties had filed their briefs.

Odometer Enforcement. United States v. Underhill. On February 8, 1985, the government filed an appeal in the Court of Appeals for the 6th Circuit, seeking reversal of a decision of the District Court for the Western District of Kentucky, which would have severely restricted the ability of the Federal government to compel production of odometer records that automobile dealers are required to maintain by the Motor Vehicle Information and Cost

Savings Act and NHTSA regulations. After hearing oral arguments on October 31, 1985, the Court ruled in favor of the government on January 13, 1986. On July 8, the government filed its opposition to a petition for *certiorari*, seeking review of the Court decision.

School Bus Safety Standards. Wayne Corporation v. Department of Transportation. The Wayne Corporation, a manufacturer of school buses, filed a petition for review of NHTSA's denial of its petition to amend Federal Motor Vehicle Safety Standard No. 221, "School Bus Body Joint Strength," on October 31, 1985, in the Court of Appeals for the 7th Circuit. On January 8, 1986, the government filed a motion to dismiss on the ground that the petition for review had been filed after expiration of the statutory time limit. Wayne opposed the motion. On February 5, the Court granted the government's motion to dismiss.

Ford Transmissions. Center for Auto Safety v. Dole. NHTSA denied a petition in July 1985, filed by the Center for Auto Safety, seeking to reopen NHTSA's defect investigation into the alleged failure of certain Ford vehicles with automatic transmissions to engage or hold in "Park." On September 9, 1985, the Center for Auto Safety filed a complaint in the D. C. District Court seeking reversal of the agency decision. On April 16, 1986, the Court entered judgment upholding the decision of the Administrator as a reasonable exercise of his discretion. On June 16, the Center for Auto Safety filed a notice of appeal of the District Court decision.

Traffic Safety Statistics

NHTSA's National Center for Statistics and Analysis develops and operates data collection and analysis programs to support its motor vehicle and highway safety activities. Meaningful and credible accident databases are essential to identify and analyze traffic safety problems and to assess the effectiveness of programs dealing with them.

The Center has developed several accident data systems and conducts major studies of accident and accident exposure data. It also provides information on traffic safety to other Federal agencies, state and local governments, citizens, industry, researchers, and the industrial safety community. The Center's National Accident Sampling System (NASS) provides detailed and nationally representative data on a sample of all police-reported traffic accidents. Each year, NASS investigates about 10,000 accidents at 50 sites across the country.

The Fatal Accident Reporting System (FARS) provides data from police reports and other official sources on all fatal traffic accidents.

Important FARS and NASS achievements include: an analysis of data to estimate alcohol involvement in traffic accidents, a study of the effect of state safety belt use laws on reducing traffic fatalities, FARS and NASS annual reports, an evaluation of the effects of increased state minimum drinking ages on traffic fatalities, monthly fatality trend reports to provide timely notice to DOT staff, states, 130 police departments and field accident investigators, and special investigations of fatal accidents involving school buses, cars equipped with air bags, vehicles with other special safety equipment, and vehicles with alleged safety defects.

Administration

Total employment declined from 600 full-time permanent positions at the end of 1985 to 597 such posts at the end of 1986.

Equal Employment Opportunity. Minority representation in the NHTSA workforce rose by 1 percent to 27 percent; female representation increased by 2 percent to 39 percent. The percentage of female employment in both the professional and technical categories increased 2 percent, while minority employment in NHTSA's total professional and administrative positions went from 14.3 percent to 15.1 percent.

Secretary's Initiatives. NHTSA enlisted four persons in its Graduate Cooperative Education Program and seven in the undergraduate program. NHTSA entrants in the Department's Professional Exchange Program included nine women and eight men. The Internal Mobility Program had 17 participants during the fiscal year.

Minority Business Enterprise. NHTSA achieved 186 percent of its $3.8 million Minority Business Enterprise goal.

Urban Mass Transportation Administration

The Urban Mass Transportation Administration (UMTA) executes the Department's mandate to improve urban mass transportation. It is the principal agency to help both urban and non-urban areas plan, develop, and improve mass transportation systems.

The more notable progress at UMTA in 1986 includes:

- use of full-funding contracts on major capital investments;
- assertive support for privatization projects;
- employment of minorities;
- a series of technical assistance activities, including research and training, to aid the transit industry with counter-terrorist tactics, drug and alcohol issues, accident prevention, and crisis management; and
- such reporting requirements to its grantees that simplify their annual submission of operating and financial data, which educates transit systems, local government agencies, and investors, and grants them better opinions of local transportation networks.

Transit Assistance Grants

Total appropriations for UMTA's transit assistance programs was $3.67 billion for 1986. Gramm-Rudman sequestration reduced this amount to $3.564 billion.

Urban Discretionary Grants. Urban discretionary grants are made primarily for rail modernization projects, new rail systems and extensions, and capital improvements to bus transit systems. Discretionary grant obligations in 1986 totaled $1.2 billion.

Major Capital Investment Grants. UMTA signed the following Full Funding Contracts:

Area	*Project*	*Amount*
New York City	Electrification of Long Island Railroad	$102.6 Million
San Francisco	Dale City Rail Transit Turnback	$112.1 Million
Seattle	Bus Tunnel	$ 45.6 Million
Washington	Metrorail	$391.2 Million
Chicago	Southwest Rail Line	$348.5 Million
Los Angeles	Wilshire Rail Line (Initial Operable Segment)	$492.3 Million

Urban Formula Grants. Urban formula grants provide both capital and operating assistance to the nation's transit systems. UMTA's formula grant obligations in 1986 totaled about $2.2 billion, with $806.9 million obligated for operating assistance. This type of grant is the primary source of Federal funding for new bus purchases.

Other 1986 obligations involved $48.3 million in grants for planning assistance, $106.4 million for transit assistance to rural areas, and $432.8 million for building Washington, D.C.'s Metro.

Grants Management Information System (GMIS) Achievements in 1986. UMTA approved the database design for both Phase I and Phase II uses of the Grants Management Information System (GMIS). The agency then concluded a contract with Price Waterhouse to finish program guidelines for the GMIS interface with UMTA's Financial Management System (FMS), the OST reporting system, and database conversion from the present system.

Managerial Training Grant Program. The UMTA Section 10 Managerial Training Grant Program awarded 357 grants to help transit organizations train about 1,889 managerial, technical, and professional personnel employed in public transportation. Among these was a limited number of single agency grants awarded as models for more extensive use of "block" grants to get better utilization of Federal training resources.

Grantee Procurement Training Program. UMTA embarked on a program to supply procurement training to more than 700 grantees, to help them begin sound procurement systems for more cost-effective and useful budgeting of public funds. Nearly 1,000 transit personnel attended these UMTA-sponsored classes. UMTA now offers four procurement training courses: (1) Basic Procurement Course; (2) Cost/Price Analysis; (3) Contract Administration; and (4) Overview for General Managers and Board Members.

Private Sector Initiatives

UMTA began several enterprises to spur communities to choose active private sector programs. UMTA started giving more regard to Section 3 discretionary capital grant requests from communities that had private sector programs, including provisions for competitive bidding, private sector financing, or other private sector means of cutting transit costs. UMTA made 100 percent funding available under Section 8 programs for communities wishing to think about absorbing private sector segments into their transit programs. UMTA also announced a competitive service to bring competition into transit systems for operations or maintenance services.

Private Sector Policy Highlights. In January 1986, UMTA provided guidance for grantee compliance with private sector criteria of the Urban Mass Transportation

Act. One notice addressed Section 3 and Section 9 programs; another provided details for recipients of Section 16(b)(2) and Section 18 grants. Notices asked grantees to provide data on how they were addressing provisions of UMTA's Private Enterprise Policy. The criteria include talks with private bosses on projects, chances for them to offer new and restructured service in local programs, periodic review of existing services to see if private operators might give such service more efficiently, and true cost comparison between public and private operators in examining service proposals.

Private Sector Studies. The Office of Private Sector Initiatives funded a number of studies examining the likely cost savings with competitive contracting and private sector participation. A University of Pennsylvania study of peak-hour service costs in five U.S. cities showed potential savings of between 30 and 48 percent, using peak hour contracting. A national survey revealed that competition and private sector use saves transit companies from 10 to 50 percent in operating costs. UMTA also began issuing "Private Sector Briefs" by the Rice Center on Urban Mobility Research, an ongoing series of up-to-date case studies of private sector progress in unique communities. A Rice Center study of 22 cities revealed average annual savings in operating costs of 25 to 30 percent to be a sound expectation.

Private Sector Initiative Services/Outreach. UMTA continues to sponsor workshops across the country, trading views with industry and consumer groups and showing how to use private sector participation effectively. Planning agencies like the National Association of Regional Councils, private operators like the American Bus Association and the International Taxicab Association, as well as the City Managers Association, the National Council of State Governments, and the U.S. Conference of Mayors attended technical assistance workshops on private sector ventures. UMTA worked with the National Association of Neighborhoods to inform local community groups about the benefits of competition and private sector approaches in providing local transportation. Finally, to aid its private sector outreach efforts, UMTA created the Public Private Transportation Network, a national network of skilled transit experts to advise local governments, transit agencies, and private operators on the nuts and bolts of contracting and public/private joint ventures.

Transit Safety and Security

Through the Technical Assistance Program, UMTA:

- recommended practices and criteria related to flammability and the smoke emission traits of materials used in rail transit vehicles;
- published "Recommended Emergency Preparedness Guidelines for Rail Transit Systems" to help rail transit systems assess, document, and improve their capacity to respond to emergency situations, and join these efforts with emergency response organizations in a manner which best protects the traveling public, transit systems employees, facilities, and equipment;
- published the annual Safety Information Reporting and Analysis System report for rapid rail transit and initiated development of a similar safety information system for light rail transit;
- finished an in-depth study to learn special methods needed to evacuate and rescue elderly and disabled passengers in emergency situations;
- had a series of five bus safety workshops to identify bus safety issues in given geographical regions;
- inquired into safety problems of the advanced Design Bus produced by Neoplan Corporation and monitored the solution of these problems with the National Highway Traffic Safety Administration and Neoplan;
- with the Federal Railroad Administration, provided technical assistance to the New York City Transit Authority (NYCTA) in track probes to recognize traffic problems, maintenance systems, and training guidance for NYCTA track inspectors;
- joined the NTSB in investigating fires on the New York Rapid Rail System, UMTA reviewing final NTSB counsel and NYCTA response to NTSB recommendations; and
- set an ad hoc working group to identify and produce a program for dealing with safety issues associated with rural transportation and the transport of special user groups in rural areas.

Anti-Terrorist Activities. After the Bi-State Development Agency in St. Louis received several bomb threats, UMTA held a training seminar for over 200 state and local employees dealing with explosives discovered on mass transit, conducted a survey of 16 transit properties to survey their security plans to combat terrorism, searched 10 databases on the literature on terrorism, set up an ad hoc mass transit anti-terrorism working group to help plan a series of demonstrations in which various transit terrorist incidents would be simulated, and increased the amount of training from the Transportation Safety Institute (TSI) on anti-terrorism.

Drug and Alcohol Abuse. UMTA started a series of programs to address drug and alcohol issues within its domain. These include a series of national symposia which deal especially with the topic of drug and alcohol use in public transportation; the issue of a "Dear Colleague" letter to all UMTA grantees, encouraging them to produce local

drug and alcohol intervention programs; a literature search on drug and alcohol programs that other DOT agencies have tried, to establish their pertinence to the transit environment; and the creation of an ad hoc panel of industry experts to learn more about existing local programs and needs and to advise UMTA in the design of planned exhibits.

Transportation Assistance Programs

University Research and Training Program. The UMTA University Research and Training Annual Competitive Awards Program drew 84 research requests from 55 institutions of higher learning for Federal funds totaling over $6 million, including 14 from Historically Black Colleges and Universities (HBCUs). UMTA awarded 13 grants totaling $809,518 under this program. Many reports from this program continue to rank high on the National Technical Information Service best-seller list, including journals on bus upkeep, financial management, and microcomputer applications for transportation systems.

Dulles Corridor Rapid Transit Development Study. The Dulles Corridor Rapid Transit Development Feasibility Report, by the Joint Center for Urban Mobility Research at the Rice Center, was one of the first efforts to show that the private sector could play a strong role in building and operating a major transit project. Congress directed UMTA to perform the study.

The study found that a rail line between West Falls Church and Dulles Airport was possible, in the sense that a private firm could build and operate the system at a cost well below that of public construction and operation. The system would require an annual subsidy from local governments or from any of a number of potential financing sources.

Automated Administrative System. The Office of Budget and Financial Management installed a local area network in 1986 which will implement financial system change control procedures, internal office files, and financial report distribution and control. Any staff member in the office can access the system through a simple menu on a personal computer. The system watched over 200 changes to the UMTA financial management system and letter of credit system during 1986.

Advanced Group Rapid Transit (AGRT) Program. Both Otis and Boeing delivered final reports on advanced control system development programs during 1986. The Union Switch and Signal Company, a division of American Standard, obtained the Boeing technology and all the detailed engineering records on the design to carry it forward for commercialization, as Boeing informed UMTA that it was unwilling to continue the work with its own funds.

Bus Wheelchair Accessibility Activities. UMTA held a National Bus Wheelchair Accessibility Workshop for the transit industry and disability organizations. Data from this workshop led UMTA to organize an advisory panel, including participants from the Federal Government, transit bureaus, state departments of transportation, persons with disabilities, and producers of buses and wheelchairs. Wheelchair Accessibility Guidelines were produced and issued to the transit industry.

Methanol and Alternative Fuels. UMTA launched a methanol program to display and rate methanol-fueled buses at selected transit agencies. Methanol, a clean burning alternative fuel, can meet 1991 EPA bus particulate emission requirements. Unless trap-filter technology can be notably improved, diesel buses cannot meet these. The exhibit meets questions about performance, reliability, maintainability, and safety of methanol-powered buses. UMTA has also joined the DOE to prove the feasibility of fuel cell/battery powered transit buses.

AC Propulsion. Two R-44 subway cars, equipped with the Garrett-Stromberg AC propulsion system developed under the UMTA Subsystem Technology Applications to Rail Systems (STARS) program, finished a test program at the New York City Transit Authority Sea Beach test track and are going into revenue service in New York.

Section 15

Pursuant to Section 15 of the Urban Mass Transportation Act of 1964, as amended, operating and financial data are collected and reported for all beneficiaries of funds under Sections 5 and 9 to keep a national database to meet budget and planning needs of local transit systems and Federal, state, and local governments absorbed in funding subsidies for transit. The 6th Annual Report was issued, contributing detailed summaries of financial and operating data submitted to UMTA, providing public mass transit systems, Federal, state, and local governments, and the public with data to help them make transportation investment decisions.

Disadvantaged and Women Business Enterprise Program

UMTA continues, through its recipients, to increase contracting opportunities for disadvantaged/women business enterprises (DBEs/WBEs) throughout the country. Preliminary data for 1986 shows that UMTA recipients provided around $227 million in DBEs. It is also important to note that an additional $60 million went to WBEs. In addition to opportunities provided through the Federal assistance program, UMTA awarded $24.7 million in direct contracts in further support of the Secretary's commitment to increase contract opportunities for DBEs and WBEs. Approximately $7.6 million of this amount went to DBEs.

UMTA Employment Opportunities for Minorities and Woman. To support the Secretary's commitment to provide greater chances for woman and minorities by the end of 1986, UMTA had employed 468 individuals, of which 53 percent were women, 32 percent minority women, and 12 percent minority males. During 1986, a total of 61 employees were promoted: 72 percent were women, 47 percent minorities, and 38 percent were minority women.

Maritime Administration

The Maritime Administration (MARAD) manages programs that help develop, promote, and operate the U.S. merchant marine. It is also charged with organizing and directing emergency merchant ship operations. To accomplish these tasks, MARAD:

- directs financial aid and other programs serving the American maritime industry;
- fosters cost-shared research and development projects to enhance the efficiency and competitiveness of the American maritime industry;
- holds promotional and marketing programs to increase shipper patronage for U.S.-flag vessels in foreign trade;
- aids domestic shipping and port and intermodal development in the maritime industry;
- runs the U.S. Merchant Marine Academy at Kings Point, New York, and supports six state maritime academies;
- negotiates bilateral maritime agreements and takes part in international maritime forums; and
- maintains a National Defense Reserve Fleet (NDRF) for timely deployment in national emergencies.

Shipbuilding

While commercial shipbuilding orders remained depressed in 1986, MARAD sustained the largest combatant ship buildup in the U.S. Navy's peacetime history. About $58 billion was budgeted for this in the five years ending September 30, 1986. All new contracts for naval combatant and auxiliary vessels were placed with privately-owned shipbuilding companies. Under the Navy's T-Ship program, nine privately-owned shipyards had 17 new T-Ships on order or under construction, seven merchant ships were being modified or under contract for major remodeling, and 11 T-Ships were finished in 1986.

Vessels in the multibillion dollar T-Ship purchase program are mission-oriented, including maritime prepositioning ships, fast sealift ships, fleet oilers, auxiliary crane ships, and hospital ships. Some are government-owned and operated by union or Military Sealift Command (MSC) civil service crews, and some are privately-owned and chartered to the MSC with union crews.

The American shipbuilding and ship repair industry invested over $225 million to modernize and expand facilities, bringing the total investment since 1970 to about $3.9 billion. Privately operated American shipyards built four commercial vessels totaling 94,800 deadweight tons (dwt), in 1986, compared with three new ships of 63,549 dwt. the previous year.

Emergency Operations

Continued Iranian and Iraqi attacks on merchant shipping in the Persian Gulf created the major warlike problem for the world shipping community during the year. U.S. merchant ships customarily did not enter the Gulf, but U.S.-flag ship owners and operators were informed of developments through special warnings to mariners and MARAD advisories.

Militarily useful general cargo ships in the American fleet remained in decline during 1986. Hence, during 1986, plans were made to emulate the 1985 simulated activation of the entire Ready Reserve Force (RRF). At MARAD's Eastern, Central, and Western regions; at Reserve Fleets in James River, Virginia; Beaumont, Texas; and Suisun Bay, California, general agents, lay berth operators, and supporting organizations such as the Coast Guard, the Federal Communications Center, and the American Bureau of Shipping, were included in the test of MARAD's capability to activate the RRF in an emergency.

International Activities

During the year, the Maritime Administrator led a U.S. interagency delegation in two rounds of meetings with Brazil concerning the bilateral maritime relationship, with particular emphasis on the U.S./Brazil Equal Access Agreement. The agreement was modified and extended to December 31, 1989.

The Maritime Administrator also headed an interagency delegation to the Soviet Union to negotiate a maritime agreement. The negotiations, begun in 1985, deal with cargo and port access and other bilateral issues.

MARAD officials took part in interagency trade negotiations with Taiwan and Korea. The issue of U.S. carriers intermodal shipping problems in Taiwan was raised as part of U.S./Taiwan trade negotiations on the Generalized Systems of Preferences.

MARAD was part of an interagency team that held talks with Iceland about shipments of military cargo in the bilateral trade. The talks achieved a bilateral treaty, signed September 24, 1986, later ratified by the two nations.

MARAD was active in the President's Caribbean Basin Initiative (CBI). One of the goals of the CBI is to lower transportation barriers in the area. To that end, a

MARAD delegate chaired a joint public-private sector task group to consider the needs of the Caribbean Basin in the area of transportation training.

Administrative Activities

Activity involving cargo preference led to a district court decision that the 1954 Cargo Preference Act pertained to the Agriculture Department's blended-credit program. As a result, a legislative agreement passed, tangibly restructuring use of cargo preference to agriculture programs. A plan to improve MARAD's ability to recover Title XI assets in default received attention in the Congress. MARAD rulemaking focused on relaxing present program regulations and reassessing restraints affecting U.S.-flag operators.

MARAD Statistical Update

In selected areas and administrative actions, MARAD reported that:

- net outlays totaled $287.8 million in operating differential subsidies to seven American-flag liner companies and 14 bulk carrier companies operating in the U.S. waterborne export-import trades in 1986;
- conditional approval of financing guarantees totaled about $47.6 million covering six vessels under Title XI of the Merchant Marine Act of 1936, as amended;
- based on previous Title XI commitments, the agency placed guarantees on three vessels during this reporting period;
- guarantees in force under the MARAD Title XI program totaled about $5 billion;
- the agency borrowed $1.2 billion from the U.S. Treasury to pay off 92 contract defaults involving a total of 1,247 vessels, 900 of which were barges and shipboard lighters;
- the Federal Ship Financing Fund operated at a deficit of $755 million, the balance of the fund on September 30, 1986 being $64,397,119;
- U.S.-flag ship owners deposited $65 million in tax-deferable Capital Construction Fund accounts;
- 299 ships moored at NDRF anchorages which MARAD maintains at James River, Virginia; Beaumont, Texas; and Suisun Bay, California; and
- the U.S. Merchant Marine Academy, which MARAD operates, to provide licensed deck and engineering officers for the U.S. merchant marine, awarded degrees to 244 graduates at its June 1986 commencement. About 79 percent of the graduates secured jobs in the maritime industry, aboard ship or ashore, or went on active duty in the U.S. military services.

U.S. Fleet, Industry Status

On September 30, 1986, the U.S.-flag, privately owned, deep-draft merchant fleet comprise 570 ships with a total cargo-carrying capacity of approximately 23 million dwt. The oceangoing portion of the privately owned fleet includes 465 vessels of 20.7 million dwt., of which 381 ships of 16.5 million dwt. are active. The latter comprise 36 breakbulk cargo ships, 134 intermodal vessels (containerships, barge-carrying vessels, and roll-on/roll-off vanships known as RO/ROs), two combination passenger-cargo ships, 188 tankers (including liquefied natural gas carriers), and 21 bulk carriers. Of the 381 active vessels, 144 are in the U.S. foreign trade, 12 in the foreign-to-foreign trade, 168 are in the domestic trade, and 57 under MSC charter. Of the 84 idle vessels, 6 are temporarily inactive and 78 laid up.

As of July 1, 1986, the privately owned American-flag fleet ranked 6th in the world in carrying capacity and 13th in the number of ships. Commercial cargoes conveyed in the U.S. oceanborne foreign trade totaled 640.9 million tons in calendar year 1985. U.S.-flag tonnage decreased from 29.4 million to 27.3 million tons, but the U.S.-flag share of total tonnage stayed at 4.3 percent.

Saint Lawrence Seaway Development Corporation

The Saint Lawrence Seaway Development Corporation (SLSDC), authorized in 1954 to build the U.S. facilities for the Saint Lawrence navigation project, has been responsible for the operation, maintenance, and development of that part of the Seaway between Montreal and Lake Erie which lies within the territorial limits of the United States.

New Law Changes U.S. Seaway Financing

From its inception, all operations, maintenance, administrative, and capital improvement costs for the Seaway had been paid from revenue obtained from tolls charged to vessels which transited the system. The Seaway's position as a self-sustaining agency changed in 1986 with passage of the new Water Resources Development Act, which required that, after April 1, 1987, the Corporation hand over U.S. Seaway toll income to the Harbor Maintenance Trust Fund in the Treasury. The Seaway Corporation gave the names of Seaway users who paid U.S. tolls and the amounts paid. The Secretary of the Treasury then rebated these Seaway users. The Act made the Corporation reliant on annual appropriations from the Harbor Maintenance Trust Fund.

Seaway Strategic Plan

The Secretary of Transportation appointed a Seaway Strategic Planning Group, composed of 18 Great Lakes public and private sector leaders, to make specific suggestions to develop a long-range Seaway Strategic Plan. This would address marketing and financial and infrastructure planning. The Strategic Planning Group made specific suggestions concerning marketing, finances, and infrastructure for the SLSDC to pursue, urging autonomy yet coordination between the Department of Transportation and the Canadian Ministry of Transport.

1986 Trade Promotion Highlights

SLSDC launched creative trade and traffic development ventures while continuing to build on many of the programs begun in previous years.

Seaway tolls on the jointly-operated Montreal to Lake Ontario section were frozen at 1983 levels for the third consecutive year in order to keep the competitive stance of the waterway.

The Administrator headed a joint United States-Canadian delegation on the second annual Seaway Trade Mission to Europe, making stops in Lisbon, Portugal; Barcelona, Spain; Genoa and Rome, Italy; and Split, Yugoslavia. The mission's seminars attracted 50 to 100 foreign industry representatives at each stop and drew top-level support from U.S. diplomats in two of the nations visited.

Some of the most important gains achieved by the mission included information:

- that Spain and Portugal planned to increase exports of industrial goods;
- that the Italian national power company, ENEL, planned to import greater quantities of U.S. steam coal; and
- that the Yugoslav-Great Lakes Shipping Company hoped to reintroduce general cargo service into the Great Lakes in 1986.

At the end of 1986, the Seaway Corporation was planning its third annual trade mission to Europe, including stops in Oslo, Norway; Copenhagen, Denmark; Dusseldorf, West Germany; Antwerp, Belgium; and London, England.

SLSDC sponsored export-oriented trade seminars, conferences and workshops focused on specific cargos: military cargo, Great Lakes export development, roll-on/roll-off cargo and heavy-lift cargo.

System Integrity

A top priority preventive maintenance program, initiated by SLSDC in 1986, focused more attention on the United States Seaway locks in Massena, New York, during the past year than at almost any other time since the Seaway was constructed. The work entailed three phases:

- to finalize the remaining concrete rehabilitation of the Eisenhower Lock over a two-year time frame;
- to improve the structural stability of United States locks; and
- to prepare a contingency plan addressing hypothetical mishaps that could disrupt the operation of the United States locks, including specific responses to such hypothetical scenarios, such as a lock damaged by ship collision, details of the personnel and equipment

needed to restore the lock to full operation and a stipulation that will ensure the availability of engineering firms on site within six hours of an incident to consult with Corporation officials on remedial work.

1986 Seaway Traffic Up

Transits of commercial vessels through Seaway locks rose 7 percent in 1986 as cargo of 37.5 million metric tons posted an increase of 0.7 percent over 1985. The vessel increase was propelled by an 11 percent climb in ocean ship transits to 1,418, while lake vessel transits rose 4 percent to 1,889. The positive ocean vessel results reflected the success of the Seaway Corporation's worldwide marketing programs.

Leading the rise in tonnages were bulk cargoes primarily consisting of United States exports such as stone, salt, chemicals, fertilizers, and scrap iron. These surged ahead by 13 percent to 8.3 million tons, sustaining a four-year trend.

Other cargo categories that registered gains in 1986 were: coal (up 0.3 percent), and general cargo and containers (up 5.6 percent). Grain, the Seaway's highest volume cargo, declined in 1986 by 0.1 percent to 16,353,000 tons, and iron ore dropped 7.5 percent to 8 million tons.

Research and Special Programs Administration

The Research and Special Programs Administration (RSPA) has a broad mandate to improve the safety and efficiency of all modes of transportation. RSPA's tasks include:

- maintaining a national safety program that protects against risks to life and property intrinsic in transporting hazardous materials in commerce;
- developing and enforcing regulations necessary to ensure safe transportation of hazardous liquids and natural gas by pipeline;
- providing research and analysis support to all DOT operating administrations, the Office of the Secretary, and other Federal agencies;
- providing economic aviation data to support OST and the FAA;
- administering comprehensive training programs in transportation safety and security;
- ensuring civil transportation preparedness in the event of a national emergency;
- integrating DOT policy and research and developing civil and military radio navigation systems for use by land, air, and marine users; and
- developing, coordinating, and planning a thorough transportation statistics and information program.

Hazardous Materials

RSPA regulates the safety of the public and the environment from dangers inherent in transporting hazardous materials. To attain this goal, RSPA began the Federal/State Cooperative Hazardous Materials Enforcement Development (COHMED) program to stress hazardous materials enforcement goals and to maintain the stimulus started under the earlier State Hazardous Materials Enforcement Development (SHMED) program, both of which have offered Federal support and technical assistance to states producing or enhancing their enforcement capabilities; and sought a dynamic agreement with other modal administrations, Federal agencies, and industries involved in hazardous materials transportation, safety and emergency control, and mitigation

To pursue this accord, RSPA, the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the Coast Guard, and the Chemical Manufacturers Association planned and conducted emergency response exercises broadcast by satellite to hundreds of down link receivers.

RSPA works with FEMA on a study mandated by Congress to identify and review existing public hazardous materials and training programs for enforcing the law. RSPA initiated a memorandum of understanding (MOU) with FEMA to clarify emergency preparedness roles and duties involving hazardous materials emergencies and to identify areas of cooperation between the two agencies. RSPA developed an information clearinghouse with FEMA to inform state and local governments of hazardous materials transportation emergency planning. RSPA produced better safety and marketing criteria for materials that are toxic when inhaled.

RSPA also works with the Nuclear Regulatory Commission (NRC) to amend existing regulations of both agencies that address transport of radioactive materials so that these regulations would be in substantial compliance with the International Atomic Energy Agency (IAEA) guidelines; and with FHWA on sweeping revisions to the regulations for the manufacture, operation, repair, and requalification of DOT specification cargo tanks, and held three public hearings during 1986 to gather industry comments on them. By publishing a compilation of penalty actions taken by RSPA and the Department's modal administrations in exercising their enforcement obligations under the Hazardous Materials Transportation Act, the agency hoped that this would act as a deterrent to future offenses and might educate those who commit similar abuses.

RSPA represents the U.S. on international standards setting bodies to promote the U.S. interest and to argue that the U.S. hazardous materials industry ought not be subjected to artificial barriers to trade.

Pipeline Safety

RSPA has a duty to plan safe pipeline transport of natural gas and hazardous liquids, and the safety of liquefied natural gas facilities. RSPA directs a safety regulatory program which is always reviewing and updating changes in the state of the art and improving safety. RSPA manages a thorough enforcement program throughout the 50 states, the District of Columbia, and Puerto Rico, with field duties at five regional headquarters. It also conducts a research program which supports rulemaking and

enforcement programs. Highlights of the pipeline safety program in 1986 include:

- launching the pipeline safety user fee plan, mandated by the Consolidated Omnibus Budget Reconciliation Act of 1985;
- forming a new grants-in-aid allocation formula including monies for state hazardous liquid programs and for incentives to states to improve their programs;
- directing ongoing Federal and state enforcement program by watching 4,264 gas pipeline workers and 138 hazardous liquid pipeline operators;
- producing 6,002 administrative actions and 3 hazardous facility orders;
- revising the Memorandum of Understanding (MOU) with the Coast Guard to broaden current standards covering fire protection and security of liquefied natural gas (LNG) facilities to include those facilities at waterfront plants, previously under exclusive charge of the Coast Guard;
- developing the inspection unit by the Office of Pipeline Safety (OPS), each unit representing a portion of an extensive pipeline system (or all of a small system) under the control of a single responsible management element;
- starting the Pipeline Inspection Priorities Program, a program listing pipeline operators or inspection units in the priority in which they should be inspected, requiring operators or inspection units with lower ratings to be examined more frequently;
- improving ways to reduce the amount of unaccounted-for gas, including explaining directions related to the percentage of unaccounted-for gas entry on the 1986 Annual Report for Gas Distribution Systems;
- imposing regulatory and enforcement policy to cut the number of accidents due to buried pipelines from outside force;
- studying Federal and state roles to determine whether realignment would result in more safety for less expenditure of resources;
- contracting with the Transportation Systems Center (TSC) to revise and improve the pipeline data management system maintained by RSPA and to identify ways in which existing data can be used more effectively; and
- writing two Advance Notices of Proposed Rulemaking (ANPRMs) to request comments about whether certain new standards are needed for the safety of gas or hazardous liquid pipelines, like periodic testing to determine pipeline integrity; studying degradation problems on ERW pipe; providing more data to local communities, safety agencies, and land owners to increase emergency awareness and response; issuing new design criteria for certain pipelines; making mandatory joining "one-call" systems; certifying operators; and specifying procedures for operating and maintaining plans and training operators in these procedures.

Aviation Information

RSPA maintains an aviation information management program reporting financial and statistical results of air carrier operations. It is a central information source for both the government and the private sector, and this data is required by DOT for aviation programs of both OST and the FAA, including air carrier fitness, aviation safety, worldwide air transportation, airport improvement fund disbursement, acquisitions and mergers, and essential air service.

The aviation information management program has two key parts. The first is regulatory and includes: indexing data requirements of DOT programs; analyzing other sources; developing uniform data systems to conduct air carrier accounting, reporting, and record retention; and maintaining regulations that implement these systems and their enforcement. The second component is data management activities including reports receipt, validation, processing, information dissemination, and special user services.

Safety and Security Training

The Transportation Safety Institute (TSI) finished another notably productive year, both in terms of training courses conducted and students taught. The Institute, explicitly supporting the Secretary's mission to ameliorate safety and security in the nation's transportation systems, conducted 317 classes/seminars in 90 training courses. These courses were attended by Federal, state, and local government officials, as well as industry and international representatives. TSI staff members produced 21 completely new courses during the year and initiated efforts to develop another twenty.

With courses open and students in TSI training activities, the Institute has possibly become the key site for sharing data on transportation safety and security. TSI always has been a key vehicle for passing DOT views, initiatives, and regulations on to the states and private sector personnel. Because OST has stressed safety and security, training in these fields at the TSI increased over 300 percent. Five of TSI's 11 programs (Coast Guard/Army Safety, DOS Anti-Terrorism Training, Highway Traffic Safety, Aviation Safety, and Pipeline Safety) surpassed all prior levels of activity and attendance. The number of students trained in 1986 totaled 25,457, an 81 percent increase over the 14,082 in 1985.

Office of Emergency Transportation

RSPA's Office of Emergency Transportation (OET) produces policies, plans, programs, and procedures connected

with the Secretary's duties in civil emergency preparedness, including edicts for unified command and control over all civil transportation in national security and domestic emergencies. Also included are orders for handling priorities and dispersing the total civil transportation capacity or any portion thereof to meet basic civil and military needs.

Accomplishments/Achievements: OET increased DOT's readiness through enhanced training of emergency staff, emergency executive teams, and DOT Emergency Organization personnel, including the National Defense Executive Reserve (NDER) and DOT Mobilization Designees (MOBDES). In addition, OET developed and conducted emergency preparedness training exercises for more than 400 NDERs and MOBDES in all 10 regions. Numerous other Federal and state agencies took part in these highly regarded exercises.

OET took part, at both headquarters and regional levels, in about 45 Federally-sponsored radiological emergency preparedness drills. OET devised the Department's Federal Response Plan to a ruinous earthquake. OET continues to ensure that U.S. civil transportation business is rationalized in the international emergency preparedness arena. OET directs U.S. projects in NATO's Civil Aviation Planning Committee (CAPC), supplying the U.S. representative and head of its delegation to CAPC. OET actively joined the study and working subcommittees of CAPC, where special emphasis was given growth of automated procedures for air fleet management in time of war.

Regarding emergency transportation issues of significance to the U.S. and Canada, OET and its counterpart, Transport Canada, conducted the first meeting of the Emergency Planning Committee for Civil Transportation (EPCCT). Issues affecting trans-border transportation support in a full range of crises, both domestic and international, are being pursued aggressively.

OET expanded the worth and survivability of the Secretary's crisis response expertise by further enhancing DOT's emergency communications systems. Installing a high frequency (HF) radio in DOT headquarters provided both voice and "hard copy" radio service.

A draft standard operating procedure for the DOT emergency HF system was developed with FHWA, and system testing and maintenance continue. Further enhancements are being set in motion to abet affinity of the DOT HF system for other emergency HF systems, particularly those operated by FEMA and FHWA.

Navigation

Communications and radionavigation are indispensable factors in transportation system safety and utility. The Secretary is the main Federal official providing navigation support to the civilian sector of the United States. Planning and using navigation systems are the obligation of the FAA and the Coast Guard. RSPA is responsible for creating long-range plans. It is also the primary executive agency for the Secretary providing the Federal Radionavigation Plan. Key successes in radionavigation in 1986 include leading a set of user's seminars on the Federal Radionavigation Plan, and writing the 1986 edition of that plan.

Transportation Information

RSPA provides Department-wide design of transportation statistical data. The aim is to reduce costs by minimizing the resources the Department needs, by maximizing use of existing data, and by reducing the burden on the public to furnish data. RSPA prepared a plan to shift nonregulatory aviation data functions to a "user-pay" scenario, and the TSC assumed the burden of collecting, validating, and processing aviation economic data. RSPA likewise gives technical assistance and organizes Departmental data criteria for service industry and commodity transportation statistics amassed by the Census Bureau. Program and budgetary data on Departmental statistical programs and enterprises were consolidated and provided the OMB.

Transportation Systems Center

RSPA's Transportation Systems Center (TSC), in Cambridge, Massachusetts, is DOT's multi-modal research and analysis center. TSC, with the contractual participation of industry and academia, provides research, analysis, and system engineering supporting national transportation initiatives and acquisitions.

Agreements with the Office of the Secretary, DOT operating administrations, and other Federal agencies provide funding for TSC and define the research activities begun at TSC in support of each funding organization.

TSC's major program activities support four transportation and logistics areas: safety, security, modernization, and strategic mobility.

Safety projects at TSC include implementing FAA's Cockpit Human Factors Plan; analyzing data in NHTSA's National Accident Sampling System (NASS) and Fatal Accident Reporting Systems (FARS); analyzing drug abuse by transportation operator personnel (OST/P); investigating small boat crew fatigue (Coast Guard); analyzing hazardous materials transport (RSPA and EPA); assessing data in the Safety Information Reporting System (SIRS) for rail transit systems (UMTA) and for FAA's Aviation Safety Analysis System (ASAS); and conducting engineering analysis of crashworthiness in motor vehicles (NHTSA).

Examples of 1986 achievements in this area include: growth and estimate of performance standards to temper railroad track buckling and design of a measurement system to identify unsafe track; study of the role of alcohol in recreational boating accidents; support for the FAA in developing its Aviation Human Factors Research Plan; collection, processing, and distribution of aviation safety data used to achieve safe and efficient use of the national airspace, to facilitate early discovery and subsequent solution of safety problems and air carrier defects, and to monitor the safety status of the industry; and beginning several major software subsystems for FAA's Aviation Safety Analysis System (ASAS).

Security projects at TSC assess surveillance needs and technologies for the reserve fleet (MARAD), ports (Coast Guard), embassies (State Department), and airports (FAA, OST/P and the Air Force).

TSC-led research, under contract with a private sector firm, reached findings in explosive detection and sensor technology that should speed development of a passenger screening apparatus with a high throughput, which will let airport security catch persons trying to bear concealed explosives aboard aircraft. TSC used its technological skill to detect weapons at the State Department to improve security at American embassies. TSC supported the Secretary's sweeping review of airport security, including the design and display of an automated system to detect persons who check bags but fail to board an airplane. TSC began to produce a security system to detect fires, floods, and intrusions on-board MARAD's Ready Reserve Force ships and to notify this to the proper personnel for corrective action.

Modernization projects at TSC involve navigation system improvements for the Coast Guard and the FAA, repair of the Army rail network, development of a national airport capacity expansion plan for the FAA, and telecommunications enhancements.

TSC promoted the idea and merit of FAA's NAS Plan. It showed that commercially available visibility sensors, based on new technology, could meet FAA's stringent operational requirements at significantly lower cost and with greater precision than common sensors. TSC also determined that commercially available component sensors needed for the Automated Weather Observing Systems could meet FAA needs. TSC constructed a very high precision, computer-controlled test/validation apparatus to automate the approval experiment of the precision distance measuring equipment component of MLS installations. TSC continued on behalf of the FAA and the Coast Guard to enhance the use of Federal radionavigation systems, chiefly GPS and Loran-C. TSC produced a prototype "cable loop" power and signal distribution system which uses standard power and fiber optic cable technology in a loop configuration to enhance reliability of power and data touch for airport and air traffic control facilities. And TSC supported FAA efforts to define and engineer telecommunications circuitry essential to activate the newly-signed trilateral agreement among the U.S., Japan, and the U.S.S.R., which calls for improved communications between air control centers in Anchorage, Tokyo, and Khabarousk following the KAL-007 incident.

TSC produced advanced air traffic management automation concepts and worked toward developing a prototype advanced computer display system that would allow FAA air traffic flow managers to view "real-time" airborne traffic situations at a national level on a map background. TSC delivered a Phase I version and completed a Phase II design of a microcomputer-based NAS Performance Analysis System, allowing FAA to assess NAS performance trends, isolate problems, and plan remedial action. Progress continues on an automated frequency management system which will aid FAA design and control some 30,000 radar and communications frequencies used to operate the nation's air traffic control system. An automated cost analysis management system of telecommunications was developed, permitting the FAA to save over $2 million annually. By the end of 1986, the TSC-developed Energy Management Reporting System (EMRS) was operating in eight of nine FAA regions, establishing more than $650,000 in probable savings. The Center produces a database and analysis system, improving FAA's ability to use detailed demographics to plan recruiting and training for its 10,000 Airways Facilities (AF) employees. TSC was also developing a Maintenance Management System (MMS) to help FAA improve its maintenance efficiency regarding air traffic control facilities.

Similar efforts on behalf of FAA and the Coast Guard resulted in progress toward automating the acquisition processes and spare parts management. Progress also transpired in the Resource Allocation and Planning System, produced to help the Coast Guard perform its port safety, port security, pollution prevention, and environmental response activities.

Strategic Mobility projects at TSC support OET, MARAD, FEMA, the Office of the Secretary of Defense, the Joint Chiefs of Staff, (JCS), the Air Force Command, and the Military Traffic Management Command (MTMC). The projects were concerned with developing methodologies and transportation databases necessary to assess and plan for civil sector transportation requirements in times of natural disaster or threats to national security.

Tank Car Task Forces. TSC provided vital support during 1986 for two hazardous materials (Hazmat) tank car task forces. One assessed a manufacturer's proposed inspection and repair of nearly 9,000 Hazmat tank cars equipped with antishift brackets in nonconformance with federal regulations. Yet another task force addressed technical questions related to the structural integrity of several thousand tank cars with changes not meeting safety specifications for Hazmat containers.

Appendix

TABLE I. U.S. Department of Transportation Budget Authority, Obligations, and Outlays, Fiscal Year 1986.

(in millions of dollars)

Organization	*Budget Authority*	*Obligations*	*Outlays*
Office of the Secretary	$ 83	$ 85	$ 86
United States Coast Guard	2,312	2,458	2,500
Federal Aviation Administration	4,873	4,678	4,673
Federal Highway Administration	14,703	14,380	14,185
Federal Railroad Administration	787	796	905
National Railroad Passenger Co.	562	674	680
National Highway Traffic Safety Administration	207	219	212
Urban Mass Transportation Administration	3,564	4,160	3,343
Saint Lawrence Seaway Development Corporation		12	2
Maritime Administration	1,592	1,556	1,493
Research and Special Programs Administration	18	38	38
Office of the Inspector General	26	26	26
SUBTOTAL	28,727	29,082	28,143
Proprietary Receipts from the Public	($86)		($86)
TOTALS	28,641	29,082	28,057

NOTE: Columns may not add due to rounding.

TABLE II. U.S. Department of Transportation Employment in Authorized Full-Time Permanent Positions, Fiscal Year 1986.

Organization	*Employment*
Office of the Secretary	1,007
United States Coast Guard	42,718
Federal Aviation Administration	45,965
Federal Highway Administration	3,320
Federal Railroad Administration	640
National Highway Traffic Safety Administration	639
Urban Mass Transportation Administration	456
Saint Lawrence Seaway Development Corporation	159
Maritime Administration	971
Research and Special Programs Administration	670
Office of the Inspector General	441
TOTAL	96,986

[1] Includes 5,434 civilian and 37,284 military positions.

TABLE III. U.S. Department of Transportation Employment, Full-Time Civilian, Minority and Female, 1976—86.

Year	*Total*[1]	*Minority*[1]	*Percent*	*Total*[2]	*Female*[2]	*Percent*
1976	71,679	8,989	12.5	65,758	11,745	17.9
1977	72,809	9,573	13.1	74,289	12,833	17.3
1978	71,972	9,623	13.4	73,471	12,752	17.4
1979	71,040	9,807	13.8	72,139	12,650	17.5
1980	69,998	10,169	14.5	71,092	13,166	18.5
1981	58,018	9,325	16.1	58,220	12,093	20.7
1982	58,357	8,967	15.4	59,138	11,160	18.9
1983	58,984	9,272	15.7	59,684	11,435	19.2
1984	60,226	9,688	16.1	60,226	12,245	20.3
1985	59,486	9,653	16.2	59,486	12,508	21.0
1986	61,281	10,285	16.8	61,281	13,954	22.8

[1] Minority employment figures and related totals exclude employees in Hawaii and Guam.

[2] Female employment figures and related totals cover general schedule positions only for 1976, and all employees for the years 1977—1986.

NOTES:

1. Minority data are as of May 31 for 1976 and September 30 for all other years.
2. Female data are as of May 31 for 1976; and September 30 for all other years.
3. Source of the data for 1982—86, *DOT Employment Facts* (OST).

TABLE IV. United States Coast Guard Financial Statement, Fiscal Year 1986.

Appropriated Funds	*Funds Available* [1]	*Total Obligations*	*Unobligated Balance* [2]
Operating Expenses	$1,642,939,000	$1,642,719,386	$ 219,614
Acquisition, Construction, and Improvements	629,670,589	356,127,881	273,542,708
Alteration of Bridges	22,293,550	6,798,783	15,494,767
Retired Pay	339,489,000	338,918,837	570,163
Reserve Training	58,857,000	58,598,091	258,909
Research, Development, Test, and Evaluation	26,246,295	16,440,083	9,806,212
Pollution Fund	18,749,552	9,422,180	9,327,372
Offshore Oil Pollution Compensation Fund	3,383,115	369,723	3,013,392
Deepwater Ports	5,607,518	496	5,607,022
TOTAL	2,747,235,619	2,647,285,291	317,840,159
Reimbursements			
Operating Expense	175,149,503	175,149,503	0
Acquistion, Construction, and Improvements	9,445,672	9,293,904	151,768
Reserve Training	36,586	36,586	0
Research, Development, Test, and Evaluation	1,482,446	894,895	587,551
TOTAL	186,114,207	185,374,888	739,319
Trust Funds			
Boat Safety Account	48,241,733	47,822,589	419,144
Coast Guard General Gift Fund	168,914	30,630	138,284
Surcharge Collection, Sale of Commissary Stores	602,349	214,858	387,491
Coast Guard Cadet Fund	4,098,033	4,098,033	0
TOTAL	53,111,029	52,166,110	944,919
Intra Governmental Revolving Funds			
Coast Guard Supply Fund	67,509,828	67,222,036	287,792
Coast Guard Yard Fund	100,451,625	32,235,544	68,216,081
TOTAL	167,961,453	99,457,580	68,503,873

Accrued Gross Expenditures—All Years	*Total*	*Direct*	*Reimbursable*
Operating Expenses	$1,814,783,756	1,638,735,125	167,048,631
Acquisition, Construction, and Improvements	453,647,933	442,989,549	10,658,384
Alternation of Bridges	2,964,603	2,964,603	0
Retired Pay	341,134,550	341,134,550	0
Reserve Training	57,937,850	57,843,082	94,768
Research, Development, Test, and Evaluation	18,625,540	18,017,981	607,559
National Recreational Boating Safety	38,646,058	38,646,058	0
Pollution Fund	8,175,563	8,175,563	0
Coast Guard General Gift Fund	28,638	28,638	0
Surcharge Collections, Sale of Commissary Stores	214,858	0	214,858
Coast Guard Cadet Fund	4,098,033	0	4,098,033
Coast Guard Supply Fund	66,303,670	0	66,303,670
Coast Guard Yard Fund	39,078,218	6,259,509	32,818,709
Offshore Oil Pollution Compensation Fund	340,399	340,399	0
Deepwater Ports Liability Fund	196	196	0
TOTAL	2,845,979,910	2,555,135,298	290,844,612

TABLE IV. U.S. Coast Guard Financial Statement, Fiscal Year 1986—*(Continued).*

[1] Funds available include unobligated balances brought forward from prior year appropriations as follows:

Operating Expenses	15,000,000
Alteration of Bridges	17,317,550
Acquisition, Construction, and Improvements	
Appropriated Funds	410,864,589
Reimbursements	159,440
Reseach, Development, Test, and Evaluation	
Appropriated Funds	8,399,295
Reimbursements	345,939
Deepwater Ports Liability Fund	4,650,518
Pollution Fund	24,765,284
Coast Guard General Gift Fund	152,901
Surcharge Collections, Sale of Commissary Stores	252,269
Coast Guard Supply Fund	371,356
Coast Guard Yard Fund	45,163,660
Offshore Oil Compensation Fund	2,426,115
National Recreational Boating Safety	165,408
TOTAL	530,034,324

[2] Unobligated balances remain available for obligation in fiscal year 1987 as follows:

Operating Expenses	0
Acquisition, Construction, and Improvements	273,053,846
Reimbursements	151,768
Research, Development, Test, and Evaluation	9,806,212
Reimbursements	587,551
Alteration of Bridges	15,494,767
Pollution Fund	9,327,372
Coast Guard General Gift Fund	138,284
Surcharge Collections, Sale of Commissary Stores	387,491
Coast Guard Supply Fund	287,792
Coast Guard Yard Fund	68,216,081
Offshore Oil Pollution Compensation Fund	3,013,392
Deepwater Ports Liability Fund	5,607,022
National Recreational Boating Safety	419,144
TOTAL	386,490,722

TABLE V. Hijacking Attempts on U.S. and Foreign Aircraft, Including General Aviation Aircraft, Calendar Years 1975—85.

Aircraft Category	*Year*										
	1975	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
United States	12	4	6	13	13	22	8	10	19	7	5
Foreign	13	14	26	14	14	19	24	22	15	21	31
TOTAL	25	18	32	27	27	41	32	32	34	28	36

TABLE VI. U.S. Airline Accidents, Fatalities, Aircraft Hours Flown, and Accident Rates, Calendar Years 1975—85.[1]

Year	*Accidents*		*Fatalities*	*Aircraft Hours Flown*	*Accident Rates* [2]	
	Total	*Fatal*			*Total*	*Fatal*
1975	31	2	122	5,422,665	0.472	0.037
1976	22	2	38	5,587,601	0.394	0.036
1977	21	3	78	5,800,843	0.362	0.052
1978	21	5	160	6,031,743	0.348	0.083
1979	24	4	351	6,700,322	0.358	0.060
1980	15	0	0	6,797,578	0.221	0.000
1981	25	4	4	6,571,288	0.380	0.061
1982	15	3	233	6,440,163	0.233	0.047
1983	22	4	15	6,649,009	0.331	0.060
1984	12	1	4	7,438,497	0.161	0.013
1985	18	4	197	7,934,135	0.257	0.011

[1] Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during scheduled operations.

[2] Per 100,000 aircraft hours flown.

NOTE: Beginning in 1981 the National Transportation Safety Board discontinued the practice of citing passenger fatality rates.

TABLE VII. U.S. Commuter Air Carrier Accidents Fatalities, Aircraft Hours Flown, and Accident Rates, Calendar Years 1981—85.[1]

Year	Accidents		Fatalities	Aircraft Hours Flown	Accident Rates [2]	
	Total	Fatal			Total	Fatal
1981	31	9	34	1,240,764	2.500	0.730
1982	26	5	14	1,299,748	2.080	0.380
1983	18	2	11	1,510,908	1.190	0.130
1984	22	7	48	1,745,762	1.260	0.400
1985	21	7	37	1,737,106	1.210	0.400

[1] Includes accidents of all cargo air carriers when those accidents occurred during scheduled 14 CFR 135 operations. All-cargo air carriers no longer meet the RSPA definition for "Commuters". May also include accidents involving carriers whose FAA operating specifications permit scheduled revenue operations under 14 CFR 135, but who have not received a RSPA fitness determination.

[2] Per 100,000 aircraft hours flown.

TABLE VIII. U.S. Air Taxi Accidents, Fatalities, Aircraft Hours Flown, and Accident Rates, Calendar Years 1981—85.

Year	Accidents		Fatalities	Aircraft Hours Flown	Accident Rates [1]	
	Total	Fatal			Total	Fatal
1981	157	40	94	2,895,827	5.420	1.380
1982	135	31	72	3,256,763	4.150	0.950
1983	140	27	62	2,574,883	5.440	1.050
1984	146	23	52	3,079,007	4.740	0.750
1985	152	35	76	2,782,696	5.460	1.260

[1] Per 100,000 aircraft hours flown.

TABLE IX. U.S. General Aviation Accidents, Fatalities, Aircraft Hours Flown, and Accident Rates, Calendar Years 1976—85.[1]

Year	Accidents		Fatalities	Aircraft Hours Flown	Accident Rates [2]	
	Total	Fatal			Total	Fatal
1976	4,023	662	1,226	30,476,000	13.190	2.170
1977	4,083	663	1,280	31,577,508	12.930	2.100
1978	4,218	721	1,558	34,887,178	12.080	2.060
1979	3,825	638	1,237	38,641,268	9.900	1.650
1980	3,597	622	1,252	36,401,663	9.880	1.710
1981	3,502	654	1,282	36,803,200	9.520	1.780
1982	3,231	589	1,182	32,094,623	10.070	1.840
1983	3,075	555	1,064	31,048,000	9.900	1.790
1984	3,010	543	1,039	31,510,000	9.540	1.720
1985	2,745	500	957	30,589,905	8.970	1.630

[1] All operations other than those operated by commuter air carrier and air taxi aircraft under 14 CFR 121 and 14 CFR 135.
[2] Per 100,000 aircraft hours flown.

NOTE:
1. Suicide and sabotage accidents excluded from rates as follows:
   Total—1976 (4), 1977 (1), 1978 (2), 1980 (1), 1982 (3), 1983 (1), 1984 (3)
   Fatal—1976 (1), 1977 (1), 1978 (2), 1980 (1) 1984 (2)
2. Includes air carrier fatalites when in collision with General Aviation aircraft.

TABLE X. Federal-Aid Highway Obligations, Fiscal Years 1976—86.[1]

(dollars in millions)

Funding Category	Year											
	1976*	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total
Interstate[1]	2,616	3,298	3,191	4,442	3,380	3,926	3,659	6,061	4,777	5,763	5,381	46,494
ABC[2]	194	46	17	7								264
Primary [3]	725	1,174	1,320	1,440	1,605	1,752	1,489	2,052	2,365	2,168	2,290	18,380
Secondary[4]	332	287	364	360	395	456	387	602	612	534	472	4,801
Urban	564	657	854	739	774	892	732	878	892	701	694	8,377
Bridge	116	196	171	611	770	983	979	1,389	1,512	1,382	1,443	9,552
Safety Construction	368	326	332	338	344	338	318	362	483	339	360	3,908
Emergency Relief	115	85	105	135	280	122	120	66	61	72	147	1,308
Other[r]	1,127	896	781	552	529	551	505	1,417	927	2,810	3,273	13,368
TOTAL[r]	6,157	6,965	7,135	8,624	8,077	8,975	8,189	12,825	11,629	13,769	14,060	106,405

[1] After 1983 Interstate includes Interstate construction and Interstate 4R.
[2] ABC figures include urban extension, primary and secondary funds.
[3] Primary figures include rural primary, priority primary, discretionary priority primary, and consolidated primary funds.
[4] Secondary figures include only rural interstate funds.
* Includes the Transition Quarter, July 1, 1976 to September 30, 1976.
[r] Revised

TABLE XI. Federal Highway Administration Motor Carrier Safety Inspection Activity, Calendar Years 1977—85.

Year	*Inspections Performed*	*Vehicles Taken Out of Service*	*Drivers Taken Out of Service*
1977	18,730	6,985	558
1978	25,695	9,978	597
1979	26,127	10,779	1,980
1980	29,110	9,600	3,000
1981	40,747	13,143	4,184
1982	35,825	11,489	3,160
1983	24,721	5,547	1,260
1984	18,966	4,438	1,667
1985	13,013	3,690	1,305

NOTE: In 1982 and prior years, each defect found was reported as a separate vehicle when, in fact, some vehicles had more than one defect. Starting with 1983, only the actual number of vehicles taken out of service were counted.

TABLE XII. Summary of U.S. Train Accidents and Casualties, Calendar Years 1976—85.

Category	Year										% Change	
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1984–85	1976–85
Number of Train Accidents[1]												
Collisions	1,370	1,363	1,476	1,425	1,201	776	572	418	419	366	-12.65	-73.28
Derailments	7,934	8,075	8,763	7,482	6,442	4,366	3,383	3,004	2,915	2,495	-14.41	-68.55
Other	944	926	1,038	833	808	639	634	484	566	569	0.53	-39.72
TOTAL	10,248	10,362	11,277	9,740	8,451	5,781	4,589	3,906	3,900	3,430	-12.05	-66.53
Number of Casualities in Accidents of all Types												
Trespassers Killed	457	458	492	516	566	582	501	472	588	474	-19.39	3.72
Trespassers Injured	766	689	746	805	728	761	671	683	773	734	- 5.05	- 4.18
Passengers Killed	5	4	13	6	4	4	9	4	12	3	-75.00	-40.00
Passengers Injured	998	503	1,252	1,001	593	409	387	502	1,000	657	-34.30	-34.17
Employees on Duty Killed	100	114	122	101	97	65	78	61	59	46	-22.03	-54.00
Employees on Duty Injured[2]	57,889	61,028	65,071	66,924	56,331	47,836	36,032	30,416	33,364	29,822	-10.62	-48.48
All Other Persons Killed	1,068	954	1,019	806	750	633	531	536	588	513	-12.76	-51.97
All Other Persons Injured	5,678	5,647	5,476	5,396	4,594	3,995	3,185	3,218	3,433	3,091	- 9.96	-45.56
TOTAL NUMBER OF PERSONS KILLED	1,630	1,530	1,646	1,429	1,417	1,284	1,119	1,073	1,247	1,036	-16.92	-36.44
TOTAL NUMBER OF PERSONS INJURED[3]	65,331	67,867	72,545	74,126	62,246	53,003	40,275	34,819	38,750	34,304	-11.06	-47.49

[1] Monetary reporting threshold in 1977 was $2,300, in 1979 it was increased to $2,900, and 1981 to $3,700.

[2] Reporting requirements were changed in 1975 to be comparable to OSHA requirements, including cases with lost or restricted time, those requiring medical treatment beyond first aid, termination of employment, transfer to another job, loss of consciousness, and occupational illnesses.

[3] Includes occupational illnesses.

TABLE XIII. Summary of Accidents and Casualties at Public Rail-Highway Crossings, Calendar Years 1976—85.

	Year										% Change	
Accidents and Casualties	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1984–85*	*1976–85*
Accidents at Highway Grade Crossings Involving Motor Vehicles												
Total Accidents	11,700	11,849	11,999	11,108	9,422	8,232	6,882	6,272	6,370	6,093	- 4.35	-47.92
Number of Persons Killed	978	846	929	727	708	623	526	483	543	480	-11.60	-50.92
Number of Persons Injured	4,343	4,455	4,120	4,019	3,534	3,020	2,417	2,372	2,597	2,395	- 7.78	-44.85
Total Rail-Highway Grade Crossing Accidents and Resulting Casualties												
Total Accidents	12,144	12,299	12,435	11,552	9,763	8,546	7,158	6,562	6,633	6,353	- 4.22	-47.69
Number of Persons Killed	1,114	944	1,021	834	788	697	580	542	610	537	-11.55	-51.80
Number of Pesons Injured	4,831	4,649	4,256	4,172	3,662	3,121	2,508	2,467	2,723	2,508	- 7.90	-48.09
Railroad Casualties												
Passengers on Trains												
Number of Persons Killed	0	0	0	0	0	0	0	0	0	0	—	—
Number of Persons Injured	57	25	18	2	24	4	1	45	35	3	-91.43	-94.74
Employees on Duty												
Number of Persons Killed	5	11	2	7	0	1	3	1	3	2	-33.33	-60.00
Number of Persons Injured	195	202	180	160	122	110	116	99	152	120	-21.05	-38.46
Total Railroad Casualties												
Number of Persons Killed	5	11	2	7	0	1	3	1	3	2	-33.33	-50.00
Number of Persons Injured	252	227	198	162	146	114	117	144	187	123	-34.22	-51.19

[1] All impacts between on-track equipment and highway users were reported beginning in 1975.

[2] Reporting requirements were changed in 1975 to be comparable to OSHA requirements—including cases with lost or restricted time, those requiring medical treatment beyond first-aid, terminiation of employment, transfer to another job, loss of consciousness, and occupational illness.

TABLE XIV. Amtrak Passengers, Passenger Miles, Daily Train Miles Revenues, Costs, Deficit and Rations, Fiscal Years 1976—86.

	Year											% Change	
Category	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*	*1985-86*	*1976-86*
Passenger (millions)	16.9	19.2	18.9	21.4	21.2	20.2	19.0	19.0	19.9	20.8	20.3	-2.3	20.1
Passenger Miles (billions)	3.8	4.3	4.0	4.9	4.6	4.8	4.2	4.2	4.6	4.8	5.0	4.2	31.6
Daily Train Miles	85.7	86.7	86.4	86.5	81.1	84.1	78.5	79.8	79.4	82.2	79.2	-3.6	-7.6
Operating Revenue	277.8	311.2	313.0	381.3	436.8	612.2	630.7	664.4	758.8	825.8	861.4	4.3	210.1
Corporate Costs	56.4	56.8	60.2	45.3	50.5	84.1	145.2	120.0	36.9	34.0	33.4	-1.8	-40.8
Operating Costs	665.8	784.2	830.1	952.8	1,102.8	1,252.5	1,280.6	1,349.4	1,485.2	1,566.1	1,530.2	-2.3	129.8
Total Costs	715.5	842.4	890.3	998.1	1,153.3	1,336.6	1,425.8	1,469.4	1,522.1	1,600.1	1,563.6	-2.3	118.5
Deficit [1]	437.7	531.2	577.3	616.8	716.5	724.4	795.1	804.9	763.3	774.3	702.2	-9.3	60.4
Revenue/Costs Ratio [2] ..	0.405	0.386	0.365	0.415	0.431	0.421	0.5	0.54	0.56	0.58	0.6	6.9	53.1

[1] Deficit before federal operating payments, but after state subsidies.

[2] Interest and depreciation removd from Total Costs before calculating the ratio.

TABLE XV. Summary of U.S. Motor Vehicle Activities and Fatalities, Calendar Years 1975—85.

Year	*Licensed Drivers (millions)*	*Registered Vehicles (millions)*	*Vehicle Miles Traveled (billions)*	*Traffic Fatalities (1)*	*Fatality Rate (2)*
1975	129.8	137.9	1,328	44,525	3.35
1976	134.0	143.5	1,402	45,523	3.25
1977	138.1	147.3	1,467	47,878	3.26
1978	140.8	153.6	1,545	50,331	3.26
1979	143.3	157.3	1,529	51,093	3.34
1980	145.3	161.6	1,528	51,091	3.34
1981	147.1	164.1	1,556	49,301	3.17
1982	150.3	165.2	1,592	43,945	2.76
1983	154.2	169.4	1,658	42,589	2.57
1984	155.4	172.0	1,717	44,241	2.58
1985*	156.9	177.1	1,774	43,825	2.47
% Change 1975-85	20.88	28.43	33.58	-1.57	-26.27
% Change 1984-85	0.97	3.15	3.14	-0.94	- 4.26

[1] Based on 30 day definition.

[2] Fatalities per 100 million vehicle miles.

* Provisional

TABLE XVI. Summary of U.S. Monthly Traffic Fatalities Motor Vehicle Mileage, and Fatality Rate, Calendar Years 1980—85.

Category and Year	Month											
	Jan	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
Fatalities [1]												
1980	3,432	3,271	3,645	3,731	4,482	4,935	4,848	5,401	4,498	4,350	4,257	4,241
1981	3,579	3,383	3,654	3,959	4,210	4,343	4,815	4,924	4,252	4,258	3,966	3,958
1982	2,888	2,768	3,305	3,523	3,886	3,826	4,293	4,220	3,947	4,094	3,520	3,675
1983	2,875	2,695	3,079	3,257	3,669	3,703	4,146	4,155	3,987	3,970	3,552	3,501
1984	2,830	2,765	3,304	3,249	3,764	4,089	4,251	4,253	4,134	4,048	3,741	3,829
1985	2,908	2,592	3,212	3,524	3,927	4,220	4,110	4,375	3,838	3,891	3,809	3,419
% Change 1980–85	-15.3	-20.8	-11.9	-5.5	-12.4	-14.5	-15.2	-19.0	-14.7	-10.6	-10.5	-19.4
% Change 1984–85	-2.8	6.3	-2.8	-8.5	4.3	3.2	-3.3	2.9	-7.2	-3.9	1.8	-10.7
Mileage [2]												
1980	117.0	107.8	125.8	126.3	131.9	132.3	136.9	139.3	128.1	133.2	124.0	125.4
1981	116.5	110.2	128.3	129.0	134.8	136.1	141.8	144.0	131.7	133.7	125.3	124.9
1982	109.8	107.5	128.2	129.8	140.3	142.1	152.2	153.3	136.3	138.8	127.1	127.1
1983	119.4	111.8	132.8	132.7	143.6	246.7	156.8	157.7	139.9	144.0	133.7	129.8
1984	122.5	117.5	137.3	141.3	151.0	153.4	161.7	164.9	146.1	147.6	137.3	136.1
1985	124.1	119.4	144.4	147.6	156.7	158.7	166.9	169.4	150.4	154.6	148.9	141.6
% Change 1980–85	6.1	10.8	14.8	16.9	18.8	20.0	21.9	21.6	17.4	16.1	20.1	12.9
% Change 1984–85	1.3	1.6	5.2	4.5	3.8	3.5	3.2	2.7	2.9	4.7	8.4	4.0
Fatality Rate [3]												
1980	2.93	3.03	2.90	2.95	3.40	3.73	3.54	3.88	3.51	3.27	3.43	3.38
1981	3.07	3.07	2.85	3.07	3.12	3.19	3.40	3.42	3.23	3.18	3.17	3.17
1982	2.63	2.57	2.58	2.71	2.77	2.69	2.82	2.75	2.90	2.95	2.77	2.89
1983	2.41	2.41	2.32	2.45	2.56	2.52	2.64	2.64	2.85	2.76	2.66	2.70
1984	2.31	2.35	2.41	2.3	2.49	2.67	2.63	2.59	2.83	2.74	2.73	2.81
1985	2.34	2.17	2.22	2.39	2.51	2.66	2.46	2.58	2.55	2.52	2.56	2.41
% Change 1980–85	-20.1	-28.4	-23.4	-19.0	-26.2	-28.7	-30.5	-33.5	-27.4	-22.9	-25.4	-28.7
% Change 1984–85	1.3	-7.7	-7.9	3.9	0.8	-0.4	-6.5	-0.4	-9.9	-8.0	-6.2	-14.2

[1] Deaths attributable to motor vehicle accidents and occuring within 30 days after the accidents.

[2] Billions of vehicle miles.

[3] Fatalities per 100 million vehicle miles.

Sources: Vehicle Mileage—Highway Statistics Division, FHWA.
Fatalities—Fatal Accident Reporting Systems, NHTSA.

TABLE XVII. Summary of Report Gas Pipeline Failures and Casualties, Calendar Years 1975—85.

	Distribution Lines			*Transmission and Gathering Lines*			*Totals*		
Year	*Failures*	*Fatalities*	*Injuries*	*Failures*	*Fatalities*	*Injuries*	*Failures*	*Fatalities*	*Injuries*
1975	979	8	220	394	6	17	1,373	14	237
1976	1,036	53	319	543	10	47	1,579	63	366
1977	1,530	29	420	466	7	30	1,996	36	450
1978	1,555	20	320	533	11	86	2,088	31	406
1979	1,520	33	313	450	12	93	1,970	45	406
1980	1,467	9	269	529	2	41	1,996	11	310
1981	1,128	10	73	495	6	6	1,623	16	79
1982	1,191	20	225	520	11	41	1,711	31	266
1983	1,127	10	220	453	2	25	1,580	12	245
1984	747	26	189	255	9	40	1,002	35	229
1985	204	20	94	127	6	12	331	26	106
% Change 1975—85	-79	150	-57	-68	0	-29	-76	86	-55
% Change 1984—85	-73	-23	-50	-50	-33	-70	-67	-26	-54

NOTES:

1. Information as required by 49 CFR Part 191.

2. Amendments 191-5, 49 FR 18961, May 3, 1984, changed the definition of "incident" as follows: eliminated the requirement to report when taking any segment of a transmission pipeline out of service, eliminated the requirement to report if gas ignited, and increased the level of estimated property damage from $5,000 to $50,000.

TABLE XVIII. Summary of Report Liquid Pipeline Accidents and Casualties, Calendar Years 1975—85.

Years	*Accidents*	*Fatalities*	*Injuries*	*Commodity Loss (barrels)*
1975	255	7	15	319,423
1976	209	5	5	255,037
1977	238	3	19	228,429
1978	256	3	10	280,794
1979	251	4	13	548,669
1980	219	3	12	289,445
1981	239	5	32	214,384
1982	200	0	6	221,411
1983	161	6	9	384,670
1984	203	0	19	292,196
1985	183	5	18	168,457

TABLE XIX. Harardous Materials Incidents, by Mode, Calendar Years 1975—85. [1]

Year	*Air*	*Highway*	*Railway*	*Water*	*Freight Forwarder*	*Other*	*Total*
1975	152	9,891	676	32	—	18	10,769
1976	83	10,757	970	14	11	23	11,858
1977	122	14,835	950	14	11	20	15,952
1978	229	16,450	1,216	49	4	16	17,964
1979	293	16,070	1,234	41	2	14	17,654
1980	226	14,180	1,272	34	2	29	15,743
1981	160	8,670	1,145	8	3	63	10,049
1982	96	5,675	839	9	6	1	6,626
1983	67	4,877	868	12	1	1	5,826
1984	107	4,506	1,002	9	145	7	5,776
1985	115	4,736	837	7	283	6	5,984

[1] Incidents reported through January 1986.

TABLE XX. Harardous Materials Casualties (Deaths and Injuries), by Mode, Calendar Years 1975—85. [1]

Year	*Air*	*Highway*	*Railway*	*Water*	*Freight Forwarder*	*Other*	*Total*
1975	4	514	96	2	—	66	682
1976	4	597	166	0	0	0	767
1977	9	578	257	0	0	0	844
1978	48	574	480	10	1	3	1,116
1979	6	708	228	1	0	3	946
1980	8	511	123	1	1	2	646
1981	7	419	222	0	0	18	666
1982	0	106	36	1	0	0	143
1983	3	125	68	0	0	0	196
1984	15	151	76	19	3	0	264
1985	4	202	51	0	1	0	258

[1] Incidents reported through January 1986.

TABLE XXI. Selected Maritime Fiscal Data, Fiscal Years 1983—86.

Activity	*1983*	*1984*	*1985*	*1986*
Construction Differential Subsidies				
Number of new ships contracted for	0.0	0.0	0.0	0.0
Total ships under construction	1.0	1.0	0.0	0.0
Total expenditures (millions of dollars)	35.5	13.7	4.7	-0.4
Operating Differential Subsidies				
Companies with long-term contracts	24.0	23.0	22.0	22.0
Ships covered	164.0	136.0	118.0	109.0
Total subsidy paid (millions of dollars)	368.2	384.3	351.7	287.8
Ship Financing Guarantees				
Vessels Covered	4,373.0	4,060.0	3,855.0	3,127.0
Shipboard lighters covered	2,118.0	1,975.0	1,747.0	1,386.0
Principal covered by guarantees (millions of dollars)	6,491.0	7,303.2	6,518.9	5,030.3
Government Owned Ships In The National Defense Reserve Fleet	304.0	386.0	300.0	299.0
U.S.-Flag Oceanborne Foreign Trade				
Long tons carried in U.S.-flag ships (millions of tons)	36.7	29.4	27.3	28.8
Percent of foreign trade carried in U.S.-flag ships	5.8	4.3	4.3	4.3