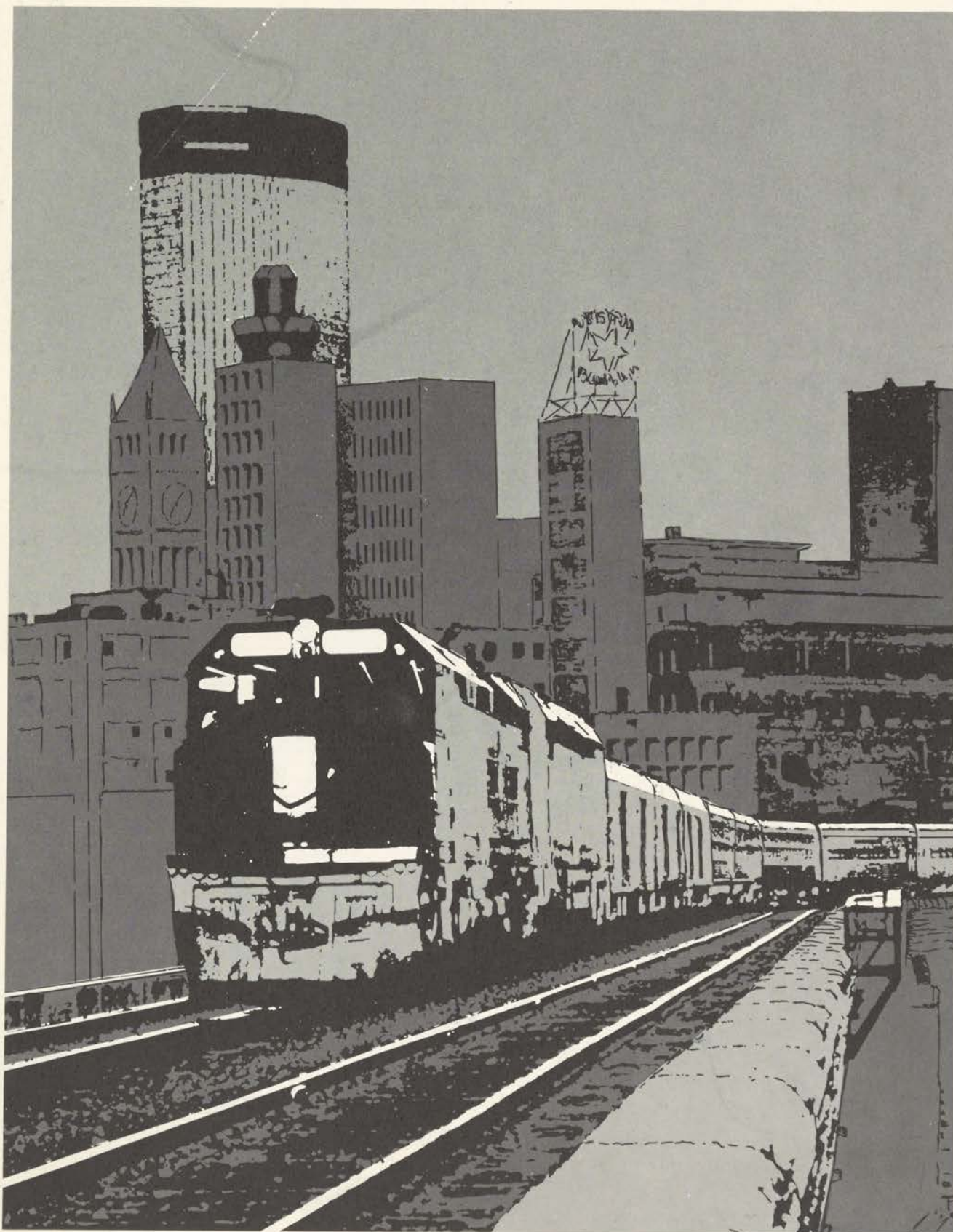


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# U.S. DEPARTMENT OF TRANSPORTATION



8th Annual Report Fiscal Year 1974



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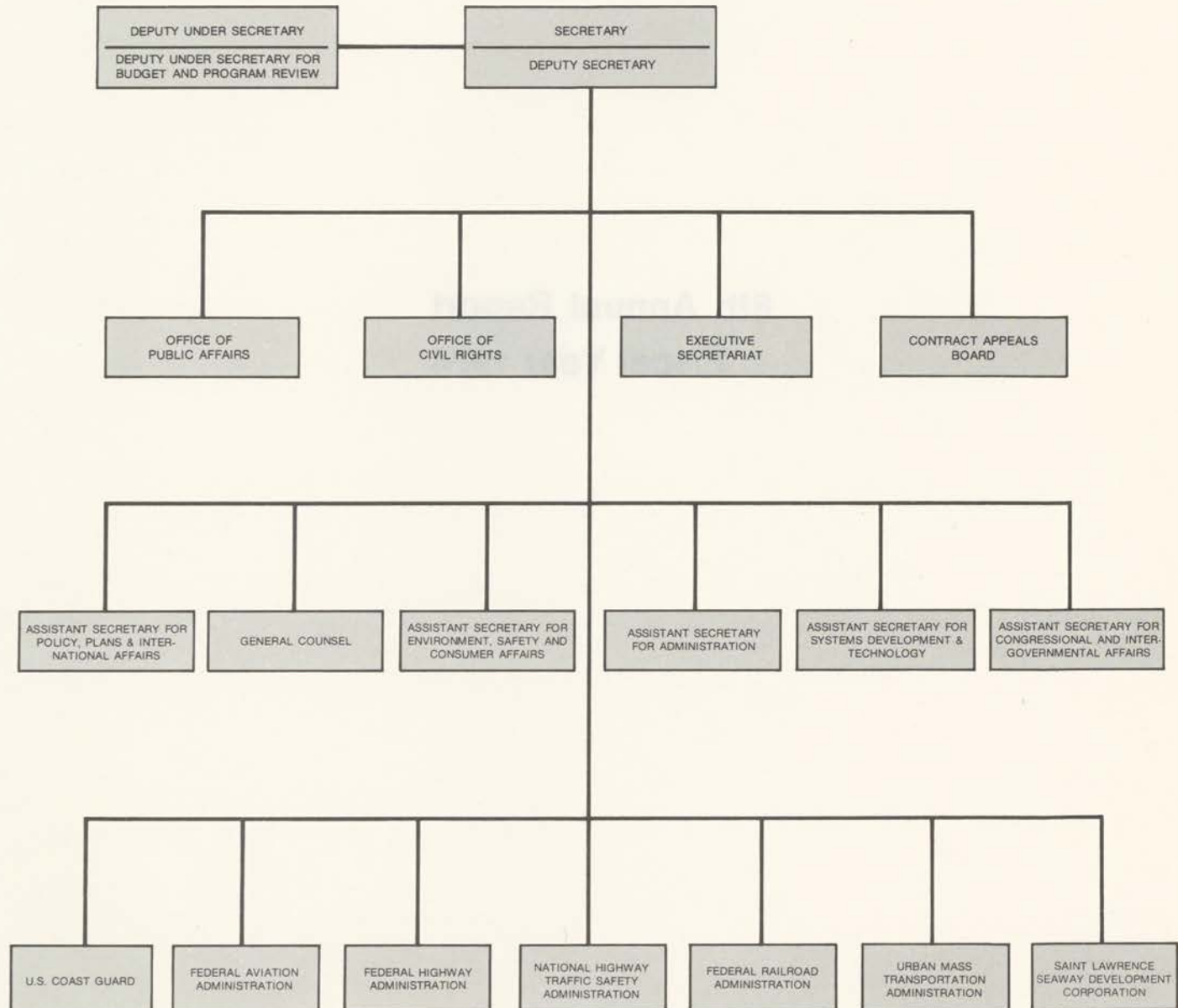
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# U.S. DEPARTMENT OF TRANSPORTATION

## 8th Annual Report Fiscal Year 1974



## DEPARTMENT OF TRANSPORTATION







**THE SECRETARY OF TRANSPORTATION**

**WASHINGTON, D.C. 20590**

The President  
The White House  
Washington, D.C. 20500

Dear Mr. President:

I transmit herewith the Annual Report of the  
Department of Transportation for Fiscal  
Year 1974.

I recommend that you forward it to the  
Congress in compliance with section 11 of  
the Department of Transportation Act.

Respectfully,

A handwritten signature in dark ink, reading "William T. Coleman, Jr.", is positioned above the printed name. The signature is written in a cursive, flowing style.

William T. Coleman, Jr.

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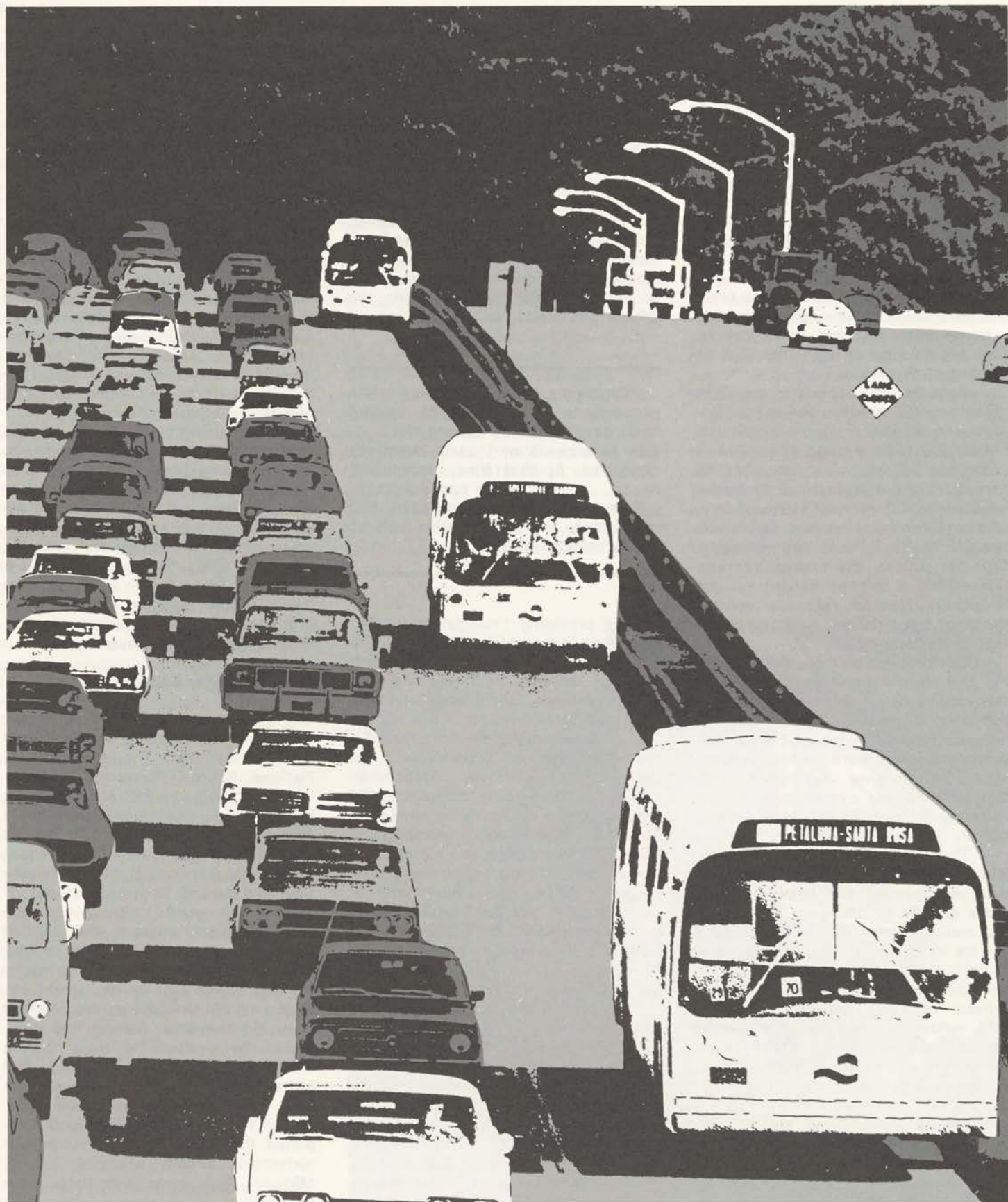
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## PART I HIGHLIGHTS





## Regional Rail Reorganization

Fiscal year 1974, both for the Nation and for the U.S. Department of Transportation, was a year of challenge and opportunity. One challenge and opportunity came with the situation of the railroads in the Northeast and Midwest. Problems of the railroads that reached crisis proportions in fiscal 1974 sprang from seeds planted during the so-called "golden age" of railroads in the late nineteenth and early twentieth centuries. At that time, competing roads in the same geographical area fought bitterly for the same markets. In the process they constructed parallel trackage—competitive trackage then, but redundant trackage in the latter half of the twentieth century.

In a landmark report to the Congress, entitled "Rail Service in the Midwest and Northeast Region" delivered in February 1974, trackage identified as potentially excess was estimated at about 25 percent of the total. Since the maintenance of railroad rights-of-way, whether productive or not, is an extremely costly item in any railroad's financial picture, the excess trackage represented a ruinous burden on the financially pressed railroads serving the great industrialized northeast quadrant of the country.

The problem was compounded by the fact that maintenance is an item that may be deferred in the short term, but only at great long-term risk. As railroad profitably declined over the years, more and more necessary right-of-way maintenance was deferred so that in 1974 the overall system was suffering from a severe maintenance deficit.

The report also cited "inflexible labor work rules" and "the inability of both management and labor to adapt more quickly to changing technology and market conditions" as contributing factors in what had clearly become a crisis involving the very survival of the Northeast-Midwest railroad system. Current railroad practices, the report said, reflected conditions of a bygone era and failed to recognize 1974 market conditions, capacity, technological changes, and competition from other modes.

All of these items defined the problem and the challenge. They had been building for years but it took the threat and then the reality of bankruptcy to stimulate action. A total of

seven major railroads in the Northeast, including the giant Penn Central, were in bankruptcy. Others were threatened. The entire rail transportation system of the region was in jeopardy. It remained for Congress to act.

In December 1973, Congress passed the Regional Rail Reorganization Act of 1973, which was signed into law by the President on January 2, 1974. In concept, the Act recognized that the Northeast railroads are vital to the future health of the Nation and that they must be preserved. The Act further mandated their preservation through an economically viable entity within the private sector. It defined the Federal

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role as providing financial and other assistance in the creation of this entity, largely from the debris of the seven bankrupt railroads, with the cooperation, assistance, and participation of other still-solvent roads in the region.

As a beginning, the Act created a quasi-governmental organization, the United States Railway Association (USRA) to serve as the designer of the final operating entity, to be known as the Consolidated Rail Corporation (Conrail). The design and structure of Conrail was to be a cooperative effort between USRA, the Department of Transportation, and the Interstate Commerce Commission. On February 1, just 30 days after enactment of the law, the Department issued its report establishing the guidelines for reorganizing a rail system created to meet the needs of an earlier age.

"Streamlining" the existing system to eliminate redundant and excess trackage is a major pillar of the reorganization effort. In addition to redundant trackage that would not require elimination of rail service to communities, the report also identified little used trackage which could not be economically justified in the new system

but whose elimination would involve the elimination of local service. Under provisions of the Act, this trackage and service may be maintained at local option through a combined Federal and local subsidy. A major mission of the USRA was the design of the planned restructured system designating which existing trackage would be retained and which would be eliminated or subsidized. The plan then would be submitted to Congress for approval.

The Act also provided interim financial assistance to the bankrupt roads while the new system was being devised. Some \$85 million was provided for operating funds for the roads—money to maintain existing service—and another \$150 million was earmarked for beginning a program of rehabilitation of the long-neglected rights-of-way and other facilities.

The signing of the Act in January set in motion the Federal response to the deepening crisis of the railroads. The challenge was being met. By year end, implementation of most of the mandates of the Act had begun. The initial report had been delivered on time. The USRA had been established. The tremendous legal, administrative, financial, and planning work involved in the restructuring of a whole regional rail system was well under way.

## Rail Passenger Service

The effort to revitalize rail passenger service in the Nation moved ahead in the fiscal year. The three-year-old National Railroad Passenger Corporation (Amtrak) showed a 25 percent increase in revenue-passenger-miles over a year earlier, thus continuing the upward trend begun in 1972. In fiscal 1974, the Department supported the proposed Amtrak Improvement Act of 1974 which would raise government-backed loan guarantees to \$900 million from the earlier \$500 million ceiling. The funds were to be used primarily for improvement of rolling stock—refurbishing old cars and purchasing new ones. By year-end, Amtrak had completed the overhaul of more than a thousand passenger cars and had placed orders for 292 new passenger cars. The corporation also took delivery on 150 new locomotives and completed the lease of two French-built turbotrains already operating in the Midwest. Four more such trains were on order.



## Urban Transportation

Rail transit projects received 53 percent, or \$463.8 million, of the capital funds granted by the Department's Urban Mass Transportation Administration (UMTA). A total of \$374.9 million, or about 43 percent went to bus systems. The renewed national interest in public transit reflected a recognition of the need for more balanced transportation systems and of the deficiencies of systems overly dependent on the automobile. Urban congestion, air pollution, the gasoline shortage, and increasing frustrations among the Nation's urban drivers all pointed toward continued emphasis on convenient, economical, non-polluting, comfortable, and attractive public transportation alternatives.

Perhaps the most important development of fiscal 1974 in this regard was passage of the Federal-Aid Highway Act of 1973, which for the first time permitted use of funds from the Highway Trust Fund for non-highway public transportation. The law had several key provisions affecting mass transit. It expanded UMTA's capital grant authority to \$6.1 billion. It permitted the use of highway funds for mass transit-related projects such as the construction of fringe and corridor parking, exclusive or preferential bus lanes, and bus shelters and loading areas. It permitted use of urban system funds for the purchase of buses, rail rolling stock, and any other transit capital facilities.

The Act provides that when an unfinished urban highway segment is withdrawn from the Interstate System, an equivalent amount of money may be spent for a non-highway public mass transit project in the same area.

Fiscal year 1974 saw the development of major mass transit legislation. The proposed National Mass Transportation Assistance Act of 1974 was designed to provide for a much greater infusion of funds into public transit facilities and to permit, for the first time, the use of Federal money for

transit operating assistance. The legislation was pending in Congress at the close of the fiscal year.

The national approach to revitalizing public transportation necessarily had to take a two-pronged approach: the maintenance and upgrading of existing conventional systems, and the development of new, more attractive, alternative systems to attract additional ridership. For years, public transportation planners had recognized that in order to lure commuters out of their automobiles and into public transportation, they had to offer an alternative that gave reasonable convenience, comfort, speed, and attractive prices.

The Department has been pursuing this objective with both conventional and innovative systems. In the conventional area, the on-going "Transbus" project is aimed at improving bus travel with more attractive, comfortable, well-lighted, well-ventilated vehicles. In fiscal 1974, three prototypes were delivered for testing in actual service. These vehicles represented the first serious attempt in 15 years at an overall redesign of the basic bus.

Another dramatic venture in bus transportation was the Dial-A-Ride project in Haddonfield, New Jersey, which achieved convenient scheduling and routing through the use of computer dispatching and door-to-door delivery. The project achieved a 75 percent increase in ridership in calendar year 1973. The project, which was declared a clear-cut success by local officials, also offered a much-needed response to the transportation problems of the handicapped and elderly.

In the area of rail mass transportation, the Department took delivery of two so-called "state of the art" cars, which, as their name implies, represented the very latest technology in rail public transportation vehicles. Again, as in the case of the Transbus, the aim was to make public transportation sufficiently comfortable and convenient to attract commuters away from their cars and onto public transportation. The two cars first were delivered to the Department's Transportation Test Center at Pueblo, Colorado, where they underwent extensive tests. Following the testing program, they



... the very latest technology in rail public transportation vehicles ...



were delivered to the New York City Metropolitan Transit Authority for testing in service in the New York subway system.

Moving beyond the current state of the art, the Department's Urban Mass Transportation Administration began work on its Advanced Concept Train (ACT) which was scheduled to include a propulsion energy storage system, monomotor trucks, improved suspension, an aluminum frame, acrylic car body, and modular interior compartments, among other innovations. Also, since the ACT Train will weigh less than an ordinary train, it will be quite energy efficient.

Like the Dial-A-Ride project, which attempts to "personalize" bus transportation, the Personal Rapid Transit project in Morgantown, West Virginia, moved ahead in its development. The concept involves relatively small transit cars moving along a network of elevated or reserved guideways to destinations predetermined by the passengers. In Morgantown, the initial test guideway was completed during fiscal year 1974 and vehicles were under production in preparation for a total system test scheduled for fiscal 1975.

### The Oil Embargo

While the Department was working in many areas related to specific modes, it also had to face problems, both old and new, that span the breadth of the transportation spectrum. The newest and perhaps most critical such problem burst suddenly on the scene during fiscal 1974 even though, like so many other issues, its seeds could be traced to earlier decades.

Transportation, like many other basic industries in the United States, has been based in large part on the availability of a seemingly endless supply of relatively cheap fuel for energy. The price of automotive gasoline in the United States, compared with its prices in other developed Western countries, provides a dramatic example of this phenomenon, which played a significant role in shaping the development of all transportation in the United States. Unfortunately, the supply was not endless, although to many it sometimes seemed so. In the decades since the end of World War II, U.S. consumption of energy had climbed sharply. It was only a relatively few years ago that

consumption began to exceed total U.S. energy production, but that fact went largely unnoticed by the general public. It was brought home dramatically in fiscal 1974, however, by the Arab oil embargo.

Although the embargo ended in a matter of months, it may be said that its effect on transportation in the United States was permanent. For one thing, it exposed the myth of the endless supply of cheap energy. Never again would Americans be likely to take their energy supply for granted. For another, it also exposed the relative profligacy with which Americans had been spending their energy resources and on which the existing transportation systems were in large part based.

Three aspects of the action by the oil producing nations had direct effects on the U.S. transportation industries: the availability of fuel, the cost of fuel, and the effects on business of the worldwide recession triggered or at least greatly intensified by the quadrupled oil prices. Availability was a problem primarily during the embargo. Petroleum and natural gas-dependent industries were forced to curtail operations or, in some cases, close down. In some parts of the country there were incidents in which private residences went unheated. Motorists were forced to queue up for scarce gasoline. Airlines were required to cut their flights and the skyrocketing fuel costs greatly intensified financial problems already plaguing some of them. All commercial surface transport suffered both from higher fuel costs and curtailed operations. At one point, the shortage of diesel fuel and its rising cost precipitated a dangerous situation involving independent truck operators. A boycott called by some of the truckers produced scattered violence and left some communities without critical supplies. Sympathetic negotiation and responsive efforts by the Secretary helped avert a more serious situation.

As fiscal 1974 ended, early hopes that the oil-producing nations might roll back their prices faded, and it became apparent that alternate courses of action were imperative. On the short term, the U.S. was faced with the necessity to adjust to the quadrupled price of imported oil while seeking to reduce its consumption and increase the domestic supply. A number of conservation measures were adopted quickly. A

temporary national 55 mile-per-hour speed limit was enacted by Congress with the result that fuel was conserved and highway accident fatalities dropped sharply. Congress also adopted experimental year-round Daylight Savings Time aimed at conserving energy normally used in the evening hours. As an additional conservation measure, the Department began promoting the use of carpools among commuters.

Skyrocketing fuel prices increased the financial problems of U.S. international air carriers. In response to this situation, DOT led an Administration effort to develop a seven-point Federal action plan designed to make adjustments in fares, reevaluate routes, reduce capacity where surpluses existed, initiate a "fly U.S. flag" program, and begin negotiations with foreign governments to eliminate certain practices involving navigation and landing fees levied against U.S. carriers.

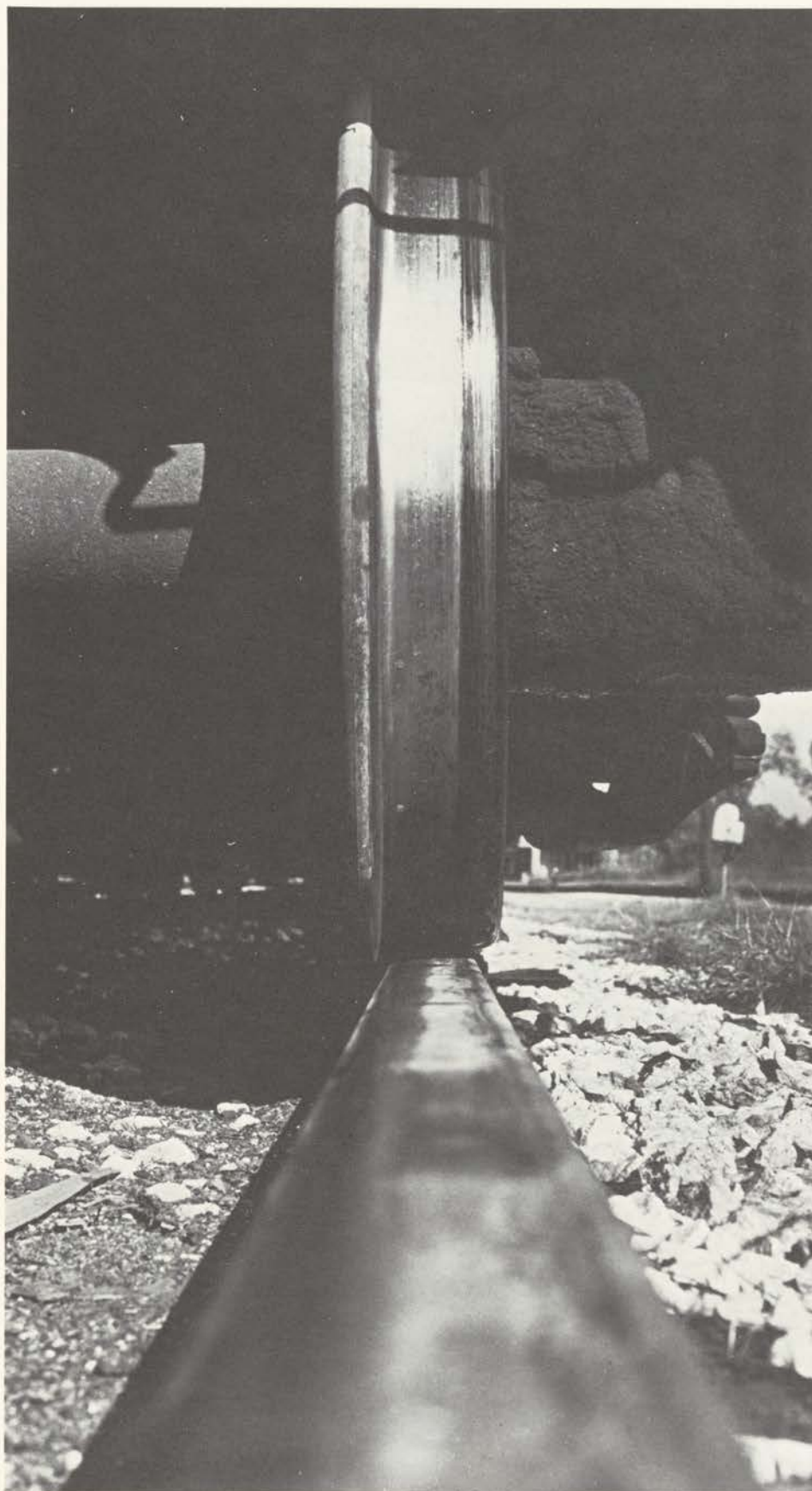
... the maintenance of railroad rights-of-way is an extremely costly item ...

... safety receives highest priority from the Department in all modes of transportation ...





## PART II PROGRESS REPORTS



### Safety

Safety, of course, receives highest priority from the Department in all modes of transportation, and there was significant progress in fiscal 1974. The Office of Pipeline Safety in the Office of the Secretary worked closely during the year with the Department of the Interior on plans for the design, construction, and safe operation of the Trans-Alaska Pipeline. The Office also moved to strengthen its regulatory authority over the transportation of liquefied natural gas and the safety of pipeline systems linking shore facilities with the proposed deepwater ports. And the Department worked to develop the Transportation Safety Act of 1974, which addressed many much-needed revisions in hazardous materials and pipeline safety law.

The biggest single safety category in transportation, however, is that of highway safety. In fiscal 1974, deaths on the highway declined sharply for the first time in recent years. The decline was attributed largely to lower speeds and reduced driving resulting from the energy crunch.

The Department's ongoing program to get drunk drivers off the road received significant public support and acclaim. Unquestionably, another contributor to an improved highway safety performance was the increased use of seat belts. That development gave new impetus to the Department's Passive Restraint Research Program, and work on air bags and alternative restraints proceeded with new urgency. At the same time, research proceeded to make automobiles safer in the event of a crash. The Department's Experimental Safety Vehicle Program was completed in fiscal 1974 and contracts were let for the construction of a number of research safety vehicles. The testing of foreign safety vehicles, begun in fiscal 1973 with Italian cars, continued with the inclusion of Japanese cars.

Also contributing to the Department's Highway Safety Program were the extensive safety provisions in Title II of the Federal-Aid Highway Act of 1973. Substantial monies were provided by that Act for a number of highway safety-related studies as well as capital improvements on the Nation's highways to eliminate hazards. Other legislative milestones included the extension of the MAST Program, which makes military helicopters available to





... the effort to revitalize rail passenger service in the Nation moved ahead ...

local communities for assistance to victims of highway accidents.

### Planning for the Future

As fiscal 1974 ended, the Department found itself very much oriented toward substantial future efforts to meet U.S. transportation needs. It had been a year of many crises, but the crises to a large extent had been met. A great deal of new ground had been broken both by the Department and by the Congress. New directions had been established, although there was still much to be accomplished.

Planning is an essential first step toward future accomplishment. Even as the Department had been responding to crises, new initiatives, new legislation, and new needs, it nevertheless had been able to devote extensive time, energy and resources to this essential work. During the year, Secretary of Transportation Claude S. Brinegar gave extra emphasis and priority to the planning function. In accordance with the Secretary's philosophy of decision-

making based on demonstrable facts and data, the Department's data base was sharply expanded through extensive research and data collection across the broad face of transportation. New research ground was broken in areas such as mass transit management research and the human behavioral component in bicycle accidents.

Noting that policy development is a fluid and never-ending process, Secretary Brinegar presented a progress report on national transportation policy to the House Appropriations Subcommittee on Transportation on March 5, 1974.

"Sheer capital requirements for moving people and goods have grown to enormous proportions," the Secretary said in an introduction to the statement. "In light of these factors, it is essential that the Department of Transportation continue its efforts to provide a clear statement of national transportation policy."

The Secretary termed his statement a progress report because it was

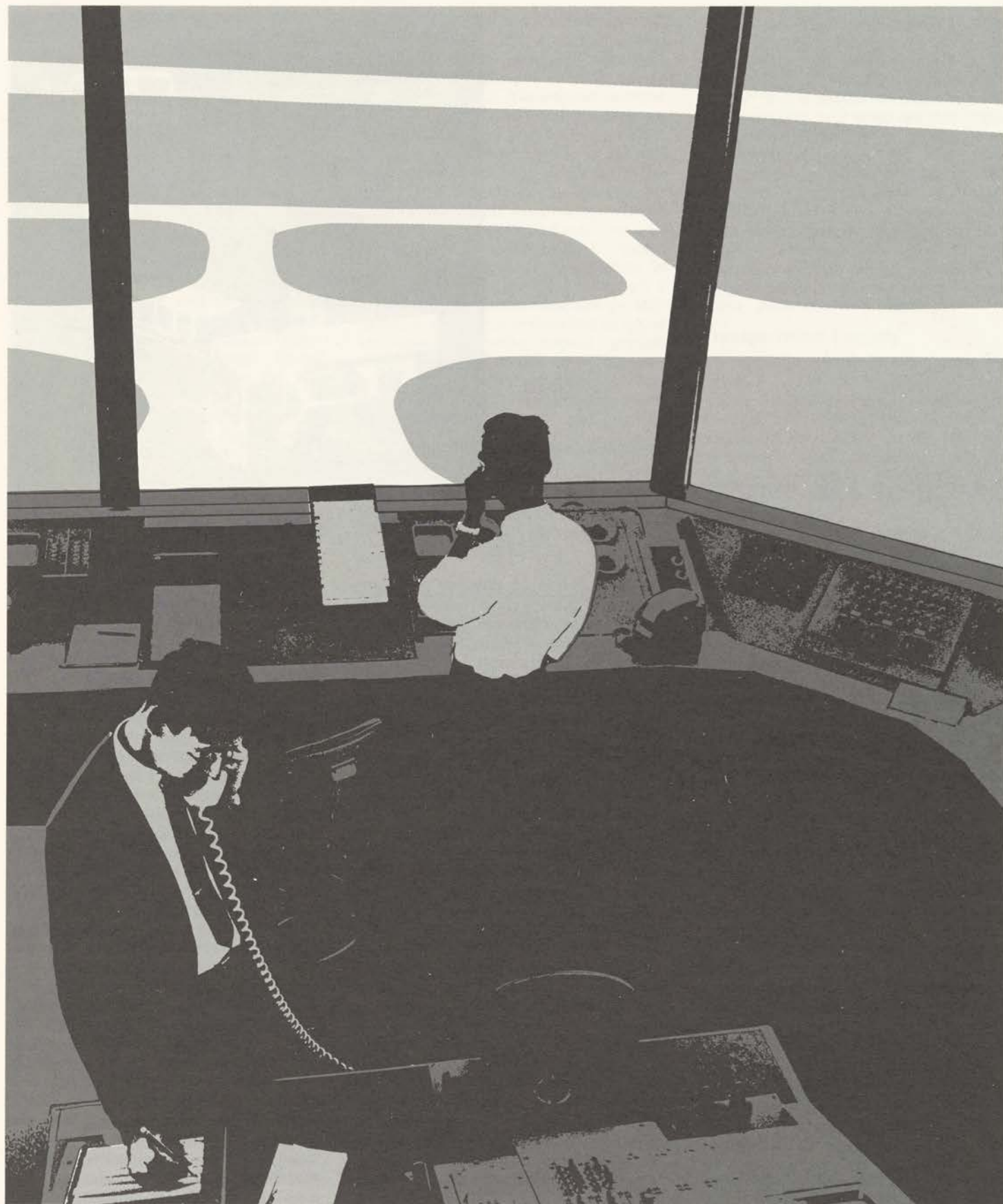
incomplete and might never be finished to the total satisfaction of all concerned. Transportation policy is developed to serve national goals, he said, and as national goals change and evolve, so must transportation policy change and evolve with them.

In enumerating the challenges for fiscal 1975 and beyond, the Secretary referred to the immediate task of revitalizing the Nation's railroads.

The still rapidly growing aviation system will present a variety of challenges in the areas of safety, economy, and efficient operation. The Nation's ultimate response to the energy shortage still remains to take shape. Even with the gains in highway safety during the year, the major part of that challenge remains ahead. Also ahead is the task of integrating the various transportation modes into a true system in which they complement one another as each serves the system and the Nation most efficiently. Finally there is the ever-present question of how to pay for all that remains to be done.



## PART II PROGRESS REPORTS







## OFFICE OF THE SECRETARY

Actions within the Office of the Secretary (OST) focused during fiscal year 1974 on energy conservation, rail recovery along with regulatory reform, increased safety, improved transportation efficiencies, and further assistance to states and communities in meeting their transportation needs.

Secretary Brinegar, in his statement on National Transportation Policy before the House Appropriations Subcommittee on Transportation, said, "Transportation is not an end in itself. It is a means to contribute to the economic well-being and quality of life in our Nation. Transportation policy is developed to serve national goals."

Secretary Brinegar called for an ongoing program "to improve the *economic regulation* of transportation, the public *promotion* of transportation, and the *protection* of society from the adverse side effects of our transportation system."

Planning and program efforts within the Office of the Secretary centered primarily on progress toward those objectives during the course of the fiscal year.

### Economic Regulation

The Penn Central and several other bankrupt Northeastern/Midwestern rail-

roads, subjects of physical deterioration and accelerating economic distress, became rescue and recovery targets of the Office of the Secretary during the year.

Acting on the Department's recommendations, Congress passed the Regional Rail Reorganization Act of 1973, establishing the United States Railway Association to carry forward a reorganization process to create a viable, privately operated Consolidated Rail Corporation.

The Regional Rail Reorganization Act also called for the Secretary of Transportation to prepare and supply to Congress a detailed report on "Rail Services in the Midwest and Northeast Regions." The report not only identified potentially excess and redundant trackage, but also provided organizational guidelines and recommendations to restructure the bankrupt railroads.

In an effort to avert future rail failures and to revitalize all the Nation's railroads, the Office of the Secretary also prepared and proposed the Transportation Improvement Act—draft legislation providing loan guarantees to railroads for capital equipment acquisitions and for the relaxation of overly-restrictive Federal regulatory policy. Major provisions of this proposal were

incorporated in Congressional deliberations, similarly concerned with surface transportation reforms and railroad relief.

Research was initiated into the effects of regulatory control over the motor carrier industry, with a view toward subsequent recommendations for revising provisions that inhibit fuel and economic efficiencies.

The Department continued to actively participate in major proceedings before transportation regulatory agencies, the Interstate Commerce Commission, the Civil Aeronautics Board, and the Federal Maritime Commission. These actions involved significant issues regarding the maintenance of competition, the modification of regulatory requirements to improve operational flexibility, and the need to take appropriate regulatory action to preserve the economic viability of carriers.

The Secretary's Office of Pipeline Safety worked in close cooperation with the Department of the Interior on plans for the design, construction, and safe operation of the Trans-Alaska Pipeline. The Office moved at the same time to strengthen its regulatory authority over the transportation of liquefied natural gas and the safety of pipeline systems linking shore facilities



with the deepwater port terminals.

Control over the shipment of hazardous materials was tightened with the formulation of new regulations specifying clear identification of contents, more stringent packaging and inspection techniques, and emergency response procedures.

### Public Promotion of Transportation

Work progressed toward the refinement and completion of the 1974 National Transportation Study, detailing state and urban area transportation facilities and capabilities as well as long-range plans. The Secretary submitted to Congress the "Study of Urban Mass Transportation Needs and Financing," based in part on data provided by the National Transportation Study.

Through its Transportation Planning Assistance function, the Office of the Secretary coordinated the efforts of the Federal Highway and Urban Mass Transportation Administrations in implementing the provisions of the Federal-Aid Highway Act of 1973 that gave urban communities flexibility in the use of urban highway funds. In the same vein, major efforts continued to improve intermodal coordination and to encourage better transportation planning and decision-making at local and state levels.

To protect the interests of U.S. international air carriers, hit by rising fuel prices and forced to compete with foreign carriers, many of whom are subsidized by their governments, the Secretary put into motion a seven-point Federal Action Plan. The program, which depends on actions by a number of governmental agencies, was gaining momentum as the fiscal year ended.

Further analysis of various high-density intercity corridors, to assess possible passenger transportation options, concluded that few areas outside the Northeast Corridor could be expected to support high-speed rail passenger service in 1975-1985. Assistance in system design continued with the newly-established Northeast Corridor Program Office within the Federal Railroad Administration.

The nationwide series of 54 public hearings in 21 states by the Secretary's Office of Consumer Affairs was completed in fiscal 1974. Among other findings, the hearings confirmed growing consumer interest in public transit, widespread concern over auto repair

practices, support for stricter law enforcement proceedings against drunk drivers, and the need for improved travel accommodations for the elderly and handicapped. Department policies and technical developments, such as the new Transbus and State-of-the-Art rapid rail cars, continued to stress ample provisions for easy accessibility by aged and handicapped travelers.

Research and development efforts involved: a multi-modal tunnelling program, adoption of the Loran-C system to improve accuracy of navigation in offshore waters, the launching of a comprehensive automobile energy efficiency evaluation, continuation of upper atmosphere climatic impact assessment, and establishment of a Transportation Research Information Services Network (TRISNET) to inventory existing technical literature and provide

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**"... the Office of the Secretary prepared ... legislation providing ... for the relaxation of overly restrictive ... regulatory policy."**

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computer feed-out to transportation institutions and agencies. In the Program of University Research, funding was increased from \$3 million to \$3.4 million.

### Energy Conservation

Problems of energy supplies and allocation occupied much of the Secretary's time as a result of the Arab petroleum embargo in the fall and winter of 1973-74, and the growing scarcity and rising costs of energy resources.

The Secretary intervened personally to help head off a threatened truckers' strike, and in a separate action established the Office of Transportation Energy Policy to coordinate the Department's overall conservation and allocation activities. Following the lifting of the embargo, the Office continued to support the "Project Independence" blueprint for conservation and energy resource development, through studies of transportation energy efficiency and conservation measures. The OST staff also prepared and submitted to Congress an assessment of daylight savings time as an energy-conservation measure.

In his March 1974 policy statement, Secretary Brinegar stressed the importance that must henceforth be ascribed to "improving energy efficiency" in transportation decisions and developments, and observed that "really significant savings in energy usage in transportation will only come from significant improvement in automobile efficiency." As a summary commentary on the future direction transportation plans and programs must take, the Secretary's statement indicated the increasing attention to be accorded energy consumption in transportation plans, decisions, and practices.

### Transportation Security

No domestic hijackings occurred in fiscal 1974, as strict security procedures were maintained by airline, airport, and Federal authorities. The Department supported Federal legislation requiring foreign air carriers operating into or out of the United States to develop security programs similar to those applied by U.S. airlines.

The Secretary's Office of Transportation Security provided leadership in coordinating the effort of Federal agencies and the transportation industry to prevent cargo thefts through the voluntary National Cargo Security Program. Testing and evaluation of cargo security hardware, sponsoring of demonstration programs, and issuing DOT Cargo Security Advisory Standards provided meaningful direction to the industry.

### Environmental Protection

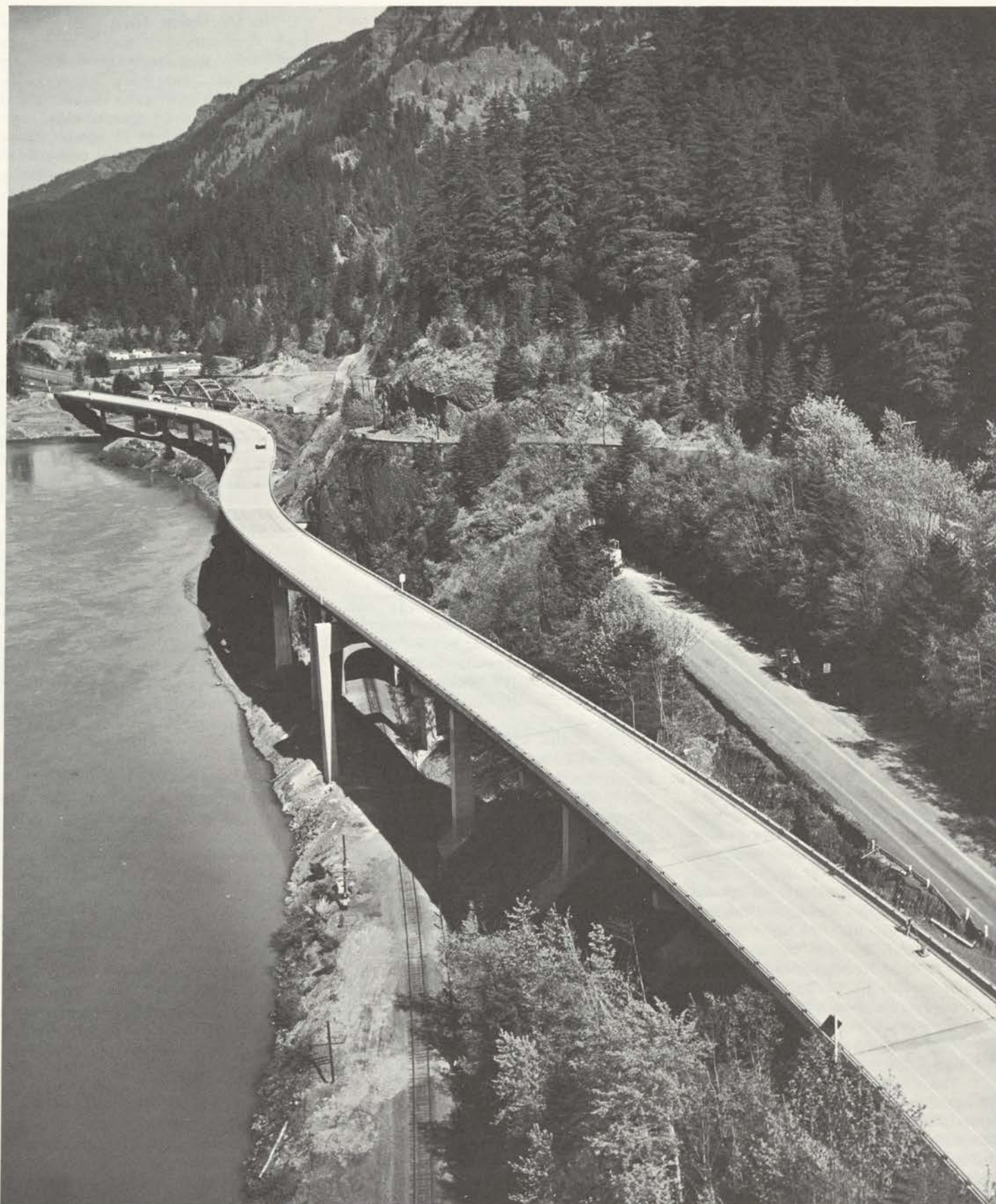
Internal regulations covering DOT actions significantly impacting on the environment were revised to reflect past experience in analyzing environmental impacts under the National Environmental Policy Act and related legislation, recent court decisions and the guidelines of the Council on Environmental Quality. The Office of Environmental Affairs coordinated with the Environmental Protection Agency in analyzing transportation strategies to reduce automobile use and improve air quality.

### Bicycling

Non-polluting, energy-conserving bicycle transportation was promoted throughout the year. Secretary Brinegar instructed the administrators of the Federal Highway Administration, the Urban Mass Transportation Administra-



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well-being and quality of life ...







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in meeting their transportation needs ...

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tion, and the National Highway Traffic Safety Administration to promote safe bicycle transportation as a part of their urban programs. DOT and the Administration on Aging signed a working agreement to assure maximum coordination and mutual support in addressing the problems of transportation for the handicapped and the elderly.

#### Transportation Facilitation

The Office of Facilitation coordinated the development of an electronic Cargo Data Interchange System. The Office signed contracts to start work on the system that would enable shippers, carriers, and others to communicate with each other and reduce paperwork. Cargo documentation costs billions each year and automating the flow of information could improve efficiency and cut costs. The system would provide standard procedures and codes for data interchange. A standard description and code for each commodity transported was completed. Uniform rules were worked out among ocean, rail, and motor carriers for charges and procedures involving exchange of containers and trailers.

Under agreements signed with

Canada, Bermuda, and the Bahamas, U.S.-bound travelers can continue to have U.S. customs and immigration services performed at foreign airports.

#### Administration

Administratively, fiscal 1974 could be described as a year devoted substantially to "management of crisis." The resources of the Office of the Secretary were brought to bear on a range of urgent transportation problems, including the near shutdown of operations by independent owner/operator truckers; the coordination of rail car movements to accommodate massive grain shipments; weekly observation of the oil-shortage impact on each segment of transportation; and responses to the Federal Energy Office on appropriate allocations of fuel.

Additionally, administrative functions in the Office of the Secretary related to the organization and staffing of the United States Railway Association and the coordination of the activities of the Federal Highway and Urban Mass Transportation Administrations in support of the Federal-Aid Highway Act of 1973, were accomplished with existing resources.



## UNITED STATES COAST GUARD



Traditionally, the Coast Guard was charged with defending the Nation's shores and interdicting smuggling, but modern demands have greatly expanded the activities, duties, and responsibilities of the Nation's smallest military service. Composed of only 37,000 military and 6,000 civilian personnel, the service in FY 1974 nevertheless carried the main responsibility for regulating the huge U.S. recreational and commercial fleets, for protecting and controlling almost every aspect of both the inland and offshore marine environment, and for search and rescue wherever the need arose.

### Search and Rescue

The primary mission of all Coast Guard search and rescue forces is to minimize loss of life, injury or property damage by rendering aid to persons and property in distress on, over, and under the high seas and waters under the jurisdiction of the United States. During the year, the Coast Guard responded to more than 67,000 calls for assistance. Recreational boaters were the source of about two-thirds of the calls. The remainder were from commercial vessels and civilian and military aircraft. Approximately 4,000 peo-

ple were rescued from life-threatening situations and more than 140,000 people were otherwise assisted. The estimated value of the property saved exceeded \$280 million.

Ten search and rescue stations in the Great Lakes were reopened on a trial basis during seasonal and peak boating periods using Coast Guard Reservists and Auxiliary members.

### Boating Safety

In the Boating Safety Program, initial construction standards for boats and associated equipment were issued. Regulations affecting the use of boats also were developed, including new terminology for personal flotation devices (lifejackets) and new requirements for their use. Restrictions were placed on boating over certain coastal bars and in inlets in Oregon and Washington, and on the use of unsuitable recreational boats for prolonged open-ocean voyages.

A boat testing program was initiated during the fiscal year and the boat defect notification and repair campaigns were carefully monitored. The first Boating Safety Consumer Protection Bulletins were published, advising the public of current recall campaigns.

All eligible States and territories, except non-participating Alaska and American Samoa, have used the first 3 years' boating safety financial assistance to establish and improve their programs.

Achievement of many goals of the Boating Safety Program would be impossible without the support of the Coast Guard Auxiliary, an all-volunteer civilian organization of experienced boatmen and licensed aircraft pilots. Each member assists the Coast Guard, but has no law enforcement authority and receives no compensation for services.

The Auxiliary conducted courses in boating safety for 442,000 people. It made courtesy examinations of safety equipment on more than a quarter million boats.

In cooperation with regular Coast Guard forces, the Auxiliary made nearly 4,000 patrols of regattas, more than 30,000 safety patrols, and completed 12,000 assistance missions. Some 353 people were rescued by Auxiliary units.

### Law Enforcement

Laws and international agreements aimed at conservation of natural resources in the oceans were enforced



during the year by aircraft and cutter patrols. Six foreign vessels, found fishing in the U.S. territorial sea or contiguous fisheries zone, were seized and released after paying penalties totaling \$1,095,000. Ten Japanese vessels were found fishing for salmon on the high seas off Alaska, in violation of an international agreement. Violation reports and evidence were turned over to Japanese authorities for prosecution. Coast Guard patrols and information distributed to foreign and domestic fishermen continued to reduce conflict between foreign mobile fishing gear and U.S. fixed gear on the high seas.

The Coast Guard's Surface Law Enforcement Patrol supports the United States-Cuba anti-hijacking agreement and acts as a deterrent to narcotics smuggling along the southern coast. Seven vessels were seized by this patrol with 13,700 pounds of marijuana, 5,400 pounds of hashish, and one kilogram of cocaine aboard.

#### International Ice Patrol

The Coast Guard began its 62nd season of International Ice Patrol in the North Atlantic on March 20, 1974. The International Ice Patrol was developed to protect North Atlantic shipping from the iceberg hazard encountered annually during the spring and early summer. The Patrol utilizes C-130 aircraft and a Coast Guard oceanographic vessel to observe and study iceberg conditions. Predictions as to the areas of iceberg danger, recommendations as to the best action to be taken to avoid such danger, and scientific data concerning both the oceanography of the area and the life cycle of the icebergs encountered are the major products of this service. The 1974 season saw an above-average number of icebergs in the shipping lanes and was considered the second worst year since 1950. By June 30, 1157 icebergs had drifted south of 48°N. latitude.

The patrol is operated by the U.S. under an international agreement. The costs of the patrol are borne by the nations whose ships traverse the area.

#### Polar Icebreaking

Coast Guard icebreakers continued to operate in the Arctic and Antarctic. In the Eastern Arctic, in the vicinity of Greenland, two icebreakers assisted the annual resupplying of U.S. defense installations and supported various scientific investigations which benefited

U. S. Navy defense research. Three icebreakers deployed to the Western Arctic near Alaska during the summer conducted ecological research, geological surveys, and defense research. Two icebreakers were deployed for five months to the Antarctic in support of the National Science Foundation's research program there.

#### Deepwater Ports

The Coast Guard is charged both with facilitating transportation and with protecting the environment. It appeared likely that the United States would continue petroleum imports and that supertankers would be by far the cheapest means of transporting oil over long

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**"During the year, the Coast Guard responded to more than 67,000 calls for assistance. Approximately 4,000 people were rescued . . . and more than 140,000 people were assisted. The estimated value of the property saved exceeded \$280 million."**

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distances. In preparation for the expected approval of legislation providing for supertanker ports in the deep waters off the U.S. coasts, the Coast Guard established a Deepwater Ports Project to implement the legislation.

#### Environmental Protection

Major progress was made in marine environmental protection. Handbooks were developed for use by Coast Guard field personnel in identifying chemical hazards and determining the proper response if such chemicals are spilled in water. Prototype oil pollutant spill sample collection devices were constructed and tested. Concurrently, techniques were being developed which, when used with the sample collection devices, will allow identification of pollutants and provide data to be used in prosecution of the polluter. A high seas oil containment barrier, which prevents the spread of an oil spill and facilitates cleanup operations, was developed and will be procured for operational use.

Contracts were awarded for 15 barriers, container subsystems, associated mooring subsystems, and a barrier-handling and retrieval system. All equipment was to be delivered by the

end of FY 1975. A contract was awarded for five containers for use with the air-deliverable anti-pollution transfer system. Six "state-of-the-art" airborne remote sensing systems for oil pollution detection were procured during FY 1974 and installed aboard HU-16E aircraft. This system is now operational. A prototype all weather airborne oil surveillance system was also constructed for testing in the HU-16E aircraft.

In the international field the most notable achievement of the Coast Guard was the adoption by a Conference of the Intergovernmental Maritime Consultative Organization (IMCO) of an International Convention for the Prevention of Pollution from Ships. The Conference adopted the convention in 1973 and the Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil. The 1973 convention, when it becomes effective, will supercede the 1954 International Convention for the Prevention of Pollution of the Seas by Oil.

#### Radio Navigation Programs

The Loran-C Program was established to provide a comprehensive plan for all Coast Guard efforts in the field of long-range navigation. The plan provides for the replacement of aging equipment at existing stations as well as the construction of new stations to meet the marine requirement for the U.S. Coastal Zone, as set forth in the National Plan for Navigation.

Implementation of the planned west coast Loran-C chain as well as expansion and upgrading of the system in other areas required early availability of transmitting equipment of proven design.

The equipment selected is the third generation AN/FPN-44 transmitting set. This equipment was originally developed in 1963; but, since that time, significant improvements have been made in the operation and reliability of the equipment, which is installed at approximately one-half of the present Loran-C stations. During fiscal 1974, a technique was developed for coupling improved Loran-C timing and pulse generation equipment to the AN/FPN-44 transmitter. Thus, a reduced manning level, compared to the original station configuration, will be realized at the new stations.

Under the Coast Guard's Low-cost



Loran-C Receiver Development Program, industry was encouraged to reduce the cost of Loran equipment by using modern "state-of-the-art" components and design concepts. These units (which range in price from \$2,800 to \$4,600) have been evaluated and have been found to meet or exceed the performance of more expensive (\$20,000 to \$30,000) receivers. As a result of this cost reduction, the Coast Guard can now outfit many of its vessels with Loran-C receivers.

As part of a plan to phase out the Loran-A System, the Coast Guard and the Federal Aviation Administration have started a joint program designed to acquaint commercial airlines with precision Loran-C. Receiver sets were procured for evaluation by Eastern and Continental airlines. The evaluation was scheduled to begin in September 1974. If the evaluation proves successful, it is anticipated that the FAA will begin examining Loran-C receivers as potential navigation aids for trans-oceanic flights.

The intent of the Precision Navigation Program is to equip all Coast Guard icebreakers and oceanographic vessels with precision navigation capability. Basically, this requirement is being met by utilizing both the Navy Navigation Satellite and Loran-C systems in a time-shared manner. A computer is used to produce a display of the navigational information.

During FY 1974, Omega and dead-reckoning modes were added to the system. This allows each ship to utilize, in order of increasing accuracy, dead-reckoning, Omega, or Loran-C (in conjunction with the Navy Navigation Satellite System) for continuous position information anywhere in the world.

The Precision Navigation System was added to five icebreakers during FY 1974, and one high endurance cutter was equipped with the system for use in an international oceanographic study program. Similar equipment was scheduled to be installed in two new icebreakers which are under construction.

The Coast Guard installed the last 80 of approximately 200 high level VHF-FM sites, to complete the communications improvement program. The new system provides coverage of the entire coast of the continental U.S., the major river systems, and selected areas of Hawaii and Puerto Rico.

Plans for extensive coverage in Southeast Alaska, Bristol Bay, and some areas of the Alaskan Peninsula were submitted for FY 1975.

Contracts were awarded for the east coast long-range communications station to be built near Portsmouth, Virginia. This station is similar in design and capability to the west coast station recently completed at Point Reyes, California. Completion of this project will be a major step in consolidating and improving the long-range communications system.

### Commercial Vessel Safety

During FY 1974 the Coast Guard inspected and certificated some 9750 U.S. flag commercial vessels and 224 foreign vessels of novel design which carry bulk liquid cargoes. These latter vessels, identified as having potential unusual risks, were inspected for issuance of letters of acceptance and compliance. Some 129 foreign passenger vessels which carry U.S. citizens were routinely inspected and issued Safety Of Life At Sea (SOLAS) 1960 Control Verification Certificates. Since enactment of the Federal Water Pollution Control Act and subsequent regulations, vessels operating upon navigable waters (including foreign flag) are boarded for inspection of anti-pollution devices and procedures.

The recent emphasis on mineral and oil exploration has also affected the program. Sixty-one inspected drilling vessels are in service and 25 vessels are under construction receiving Coast Guard inspection. The Coast Guard began inspection of the first 17 liquefied natural gas ships under con-

... wherever the need arose ...





tract for construction in the United States.

Substantive regulations on domestic tank vessel construction and tanker operations were proposed as a result of efforts to protect the marine environment from oil pollution.

Some 3,388 marine casualties were investigated involving 1,763 inspected commercial vessels and 3,650 uninspected vessels. Accidental deaths on inspected vessels totaled 136, while on uninspected vessels 233 died from accidents.

### Research and Development

Coast Guard research, development, test and evaluation programs are devoted to applying the benefits of the marine sciences and technology to Coast Guard missions and to the accomplishment of Department of Transportation and national objectives.

Efforts included the design of a prototype ice-cutting barge for use on the northern rivers, and tests of friction-reducing coatings and an air-bubbler hull lubrication system. Work progressed in Arctic field tests of off-the-shelf pollution control equipment, fast current control devices and high speed surface delivery systems for delivery of control equipment to the scene of a pollution incident. In-place and remote detection and identification system development, sewage treatment system development, oil-water separator feasibility studies, and work on air pollution monitoring devices were typical projects.

In the Vessel Traffic System, work centered on automated techniques and continued in fast water buoy testing, light weight buoy systems, and new power systems. The plans and specifications for a high-speed motor rescue boat for operation in surf were delivered and field studies of other high performance craft were initiated. Computer-assisted search planning techniques were delivered for operational use. Recreational boating safety efforts included explosion and venting criteria, stability criteria, and personal flotation devices. Commercial vessel safety work included crew survival systems, vessel maneuvering studies, fire safety criteria, and risk and vulnerability modeling techniques.

### Vessel Construction Program

Construction continued on the 400-foot icebreaker POLAR STAR, and was 85 percent complete as of June 30,

1974. The vessel was launched on November 17, 1973. Final delivery is scheduled for June 1975.

Construction continued also on the 400-foot icebreaker POLAR SEA. This contract was approximately 52 percent complete as of June 30, 1974. Launching is scheduled for April 1975, with final delivery expected in June 1976.

The keel was laid during FY 1974 for the PAMLICO, a 160-foot buoy tender. Launching is scheduled for December 1975 and delivery is set for April 1976.

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**"Major progress was made in marine environmental protection. Prototype oil pollutant spill sample collection devices were constructed and tested. Concurrently, techniques were being developed which . . . will allow identification of pollutants and provide data to be used in prosecution of the polluter."**

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### Obstructive Bridges Program

To provide for the reasonable needs of navigation and in accordance with provisions of the Truman-Hobbs Act, the Seaboard Coast Line Railroad bridge across the Northeast (Cape Fear) River, Wilmington, North Carolina, and the Central of Georgia Railroad bridge across the Chattahoochee River, Columbia, Alabama, were completed. Construction progresses on six other bridges, all scheduled for completion in the near future.

### Equal Employment Opportunity

During FY 1974 civil rights activity in the Coast Guard was accelerated in four major areas—race relations, equal employment opportunity, the Federal Women's Program, and the Upward Mobility Program.

The Coast Guard is now conducting classes at the Human Relations School, Coast Guard Training Center, Governors Island, New York. All instructors are graduates of the Defense Race Relations Institute. All commanding officers are now required to conduct human relations discussion sessions with their personnel to improve interpersonal and intergroup communication. First class cadets at

the Coast Guard Academy began training in human relations under the Academy Leadership Program during February and March 1974. New methods of recruiting minority officers were established.

The Commandant took steps to develop a formal Federal Women's Program. A study was done and findings were distributed throughout the Coast Guard. The Commandant also approved recommendations to include women in management advisory panels and committees where feasible, and to increase career development plans and career training for women in the lower grades.

Progress was made in achieving upward mobility for women and minorities. For example, eight of the twelve Coast Guard districts exceeded their female recruitment goals. At headquarters, a full-time female Equal Opportunity Officer and a part-time Federal Women's Program Coordinator were appointed.

### Coast Guard Reserve

The Coast Guard Reserve continued to emphasize participation in the peacetime operational missions of regular Coast Guard units as the primary method of training its 11,700 Selected Reservists for their missions in the event of war or domestic peacetime emergency. Reservists contributed more than 2.8 million man-hours of support to regular units, performing routine, peakload, and emergency operations. These activities (which include port safety and law enforcement, search and rescue operations, communication watches, boating safety activities, and other operational functions) enable the Coast Guard to extend the scope of its operations and reduce the long work week required of some personnel. Reservists responded to calls for assistance in many emergencies such as combating oil and chemical spills, fighting waterfront fires, performing security and surveillance patrols on foreign flag vessels, and working in storm and flood relief activities.

### Occupational Safety and Health

During 1974, the Commandant directed a renewed and extended effort to protect the safety and health of all Coast Guardsmen. A final revised Occupational Safety and Health Program was implemented in accordance with Executive Order 11807.





## FEDERAL AVIATION ADMINISTRATION

The Federal Aviation Administration is the U.S. Department of Transportation agency responsible for the safety and development of civil air commerce, the evolution of a national system of airports, and the reduction of noise and other environmental problems resulting from aviation operations. The FAA examines and licenses aircraft and flight personnel for airworthiness; aviation schools, mechanics, and instructors for competence; and airports for safety. Air traffic controllers route flights along prescribed airways, and into and out of FAA-tower-equipped airports. The FAA also issues and enforces rules and regulations designed to make air transportation safe and secure.

To carry out these responsibilities, the Federal Aviation Administration employs 55,000 people, operates airway facilities valued at more than \$1 billion, manages real property worth \$625 million, and administers a budget of approximately \$1.5 billion. During fiscal year 1974, FAA's air route traffic controllers handled 22.9 million aircraft traveling under instrument flight rules, and airport tower controllers logged 56 million takeoffs and landings.

During fiscal year 1974, the Federal Aviation Administration also passed the \$1 billion mark in funneling

Federal assistance to airports under the Airport Development Aid Program and implemented a reorganization of key headquarters and field staff functions. It was a year of achievement in each of the agency's areas of responsibility.

### Aviation Safety

U.S.-certified air carriers were involved in fewer accidents during 1973,\* but there was a higher number of fatalities. There were 43 air carrier accidents, compared to an annual average of 53.4 accidents for the 1968-72 base period used by the National Transportation Safety Board. There were 227 deaths, exceeding the base period average of 196.8. In scheduled passenger service, there were 32 accidents, six of them fatal, resulting in 197 passenger fatalities. Certificated air carriers flew 171.4 billion revenue passenger miles in 1973, for a fatality rate of .115 per 100 million miles flown.

There were three accidents involving U.S. unscheduled airlines, one of which resulted in six deaths.

\* The National Transportation Safety Board reports official accident and fatality statistics on a calendar-year, not a fiscal-year basis.

In general aviation, the 4,251 accidents reported were well below the base period average of 4,665. The number of fatal accidents was up from 665 for the base period to 722, with 1,411 fatalities for the year. There were 30 million general aviation hours flown in 1973.

There were 149 accidents involving air taxi operations, 38 of which were fatal, resulting in 95 deaths.

The Federal Aviation Administration promotes and enforces aviation safety through its certification and rule-making authority. The certification authority applies to flight personnel, aviation schools, aircraft and aircraft components, and airports. Air safety rules, requirements, and standards are implemented through Federal Aviation Regulations (FAR's).

At year's end the FAA listed 714,607 airmen certificated as pilots, a drop of 36,202 from the previous year. In the non-pilot category—including mechanics, ground instructors, flight navigators and flight engineers, control tower operators, and others whose functions influence the safety of flight—the total fell to 185,096 or 2,813 under last year.

One of the FAA's major safeguards against equipment failure is



the type certification—a "seal of approval" resulting from an examination of all new aircraft, accessories, and component parts to determine airworthiness. During 1974, 44 new aircraft models were type-certificated, and supplemental certificates—required when previously certificated equipment is modified—were issued for 1,584 others. The inspections and certification recommendations are accomplished by the 21 Engineering and Manufacturing District Offices located throughout the country.

Besides equipment, the FAA certifies pilot schools—2,646 currently approved; and maintenance schools—139; as well as aircraft repair stations—2,920 now certificated.

Directed by the Airport-Airway Development Act of 1970 to certificate all airports serving CAB-certificated air carriers, the FAA issued the appropriate Federal Aviation Regulations (FAR Part 139). By May 21, 1973, the agency had certificated the 493 airports that handle 99 percent of the Nation's air passenger traffic. As an amendment to Part 139, the FAA set minimum certification standards for 512 additional airports serving unscheduled operations of certificated carriers, scheduled and unscheduled operations of carriers using smaller aircraft, and the helicopter operations of the carriers. The certificates were issued on a provisional basis, valid until December 15, 1974, pending submission of acceptable plans to bring the airports to operating certificate standards.

During fiscal 1974, regulations were changed to permit a greater use of visual simulators for flight training and proficiency checks. Instituted primarily to conserve fuel, the rule change also lessens the burden on the air traffic control system by reducing the number of aircraft used solely for training and flight check purposes.

In order to upgrade maintenance and repair skills, FAA joined with the Aircraft Owners and Pilots Association in sponsoring two refresher clinics for aviation mechanics; held a widely-attended Ninth Annual International Aviation Maintenance Symposium in Washington; and continued the tradition of honoring the year's outstanding aviation mechanics.

Rulemaking activities moved forward in two directions in 1974. On the "business-as-usual" rule front, two special FAR's and 37 amendments

were issued. At the same time, the agency undertook a new and comprehensive biennial review of FAA airworthiness standards, with the first review conference scheduled for December 1974. The purpose of the program is to arrive at a review procedure to identify, announce, and issue rules and amendments in a timely manner.

The agency moved to strengthen the safeguards for hazardous air cargoes. Surveys conducted by the FAA indicated that four percent of all passenger flights carry hazardous materials, of which approximately half is radioactive. To further protect passengers and crews from possible exposure to radiation and to lessen the possibility of accidents, the FAA took several actions.

1. Regulations were amended to require training programs by air carriers and air taxi operators in the carriage and handling of hazardous materials; to require that all hazardous materials be clearly identified in the cargo manifest; and to permit dangerous articles to be carried aboard passenger flights if they are accessible only to crew members.
2. Following an incident involving the leakage of a radioactive package aboard a passenger flight, the FAA issued a Notice of Proposed Rulemaking to require that all air shipments of radioactive materials be scanned by a radiation monitor and carefully inspected before loading.
3. The agency established a hazardous materials training course and conducted seminars for persons engaged in the handling of hazardous materials.
4. Surveillance was expanded by the assignment of 18 full-time positions at FAA field offices and the approval of 21 additional positions for hazardous materials inspection and instruction.

Other FAA actions spanned the spectrum of aviation safety.

The Flight Inspection National Field Office (FINFO), established in December 1972 to centralize the flight inspection operation, became operational in 1974. The creation of a

single organization to perform inspections in the contiguous 48 States, the Caribbean, and North Atlantic areas and the replacement of DC-3 and T-29 propeller aircraft by the faster and more efficient NA265-80 jet aircraft permitted the closing of three flight inspection field offices. The retiring of 26 aircraft, the elimination of 301 jobs, the scheduled closing of seven more offices, and a reduction of 21,500 flight hours annually will save an estimated \$1.7 million a year when all 21 replacement jets (two of which were delivered in 1974) become operational sometime after December 1975.

The first National Conference on Accident Prevention and the first General Aviation Safety Conference were held, the former at St. Louis and the latter at Princeton University.

In an effort to raise the level of "safety consciousness" among pilots, mechanics, instructors, airport managers, and FAA field personnel themselves, FAA inspectors visited general aviation airports during a 30-day period in mid-summer. The program, "Operation Ground Assist," consisted of candid exchanges between FAA people and those directly concerned with general aviation safety.

A 90-day inspection of air taxi operators was also carried out during the year to check compliance with regulations. Of 2,986 operators inspected, 64 percent were found to be in non-compliance, mostly in matters of record keeping, and appropriate enforcement actions were taken.

To further stress the importance of safety, the General Aviation Accident Prevention Program was continued and 13 weekly televised weather shows for the general aviation community were broadcast over 119 stations. Warnings were issued to civil aircraft operators to insure that emergency locator transmitters (ELT's) were "armed" to activate automatically in a crash.

Research and development tests of safety-related equipment continued in a wide variety of areas. Efforts to increase safety in terminal areas during low visibility conditions were given high priority. Category III (no visibility) weather flights, using an Air Force C-141 aircraft, were conducted to acquire the engineering data for the development of a totally integrated air/ground all-weather landing system.



Airport safety research and test activities focused on ways to improve runway traction, develop impact-absorbing approach light structures, heat runways, reduce bird hazards, and provide better wind cone visibility.

FAA, in partnership with the National Aeronautics and Space Administration, launched a study of the crashworthiness of light general aviation aircraft and of human tolerance to crashes. While neither appears to be capable of significant improvement, the study seeks to identify design features that help cause fatal accidents, and to devise seat restraint and other structural systems that will be more protective in crash situations.

### Aviation Security

The 1974 aviation security record confirmed that the drop in attempted hijackings achieved in 1973 was no accident. No U.S. aircraft was hijacked during fiscal year 1974, and the number of attempts fell from 11 to 4. Significantly, no hijackings were attempted in the air. The two hijackers who forced their way aboard passenger aircraft on the ground were defeated. One killed himself after being wounded by an airport policeman and the other was disarmed and captured. In two attempted hijackings of helicopters, both culprits were apprehended.

There is little doubt that the airport and airline security measures instituted by the FAA in 1972, and subsequently improved, were instrumental in containing the hijacking threat. The effectiveness of the pre-boarding screening procedures is demonstrated by fiscal year 1974 statistics: a total of 4,275 passengers were denied boarding privileges for security reasons; 655 others were arrested for carrying weapons; and 2,843 guns and other weapons were confiscated.

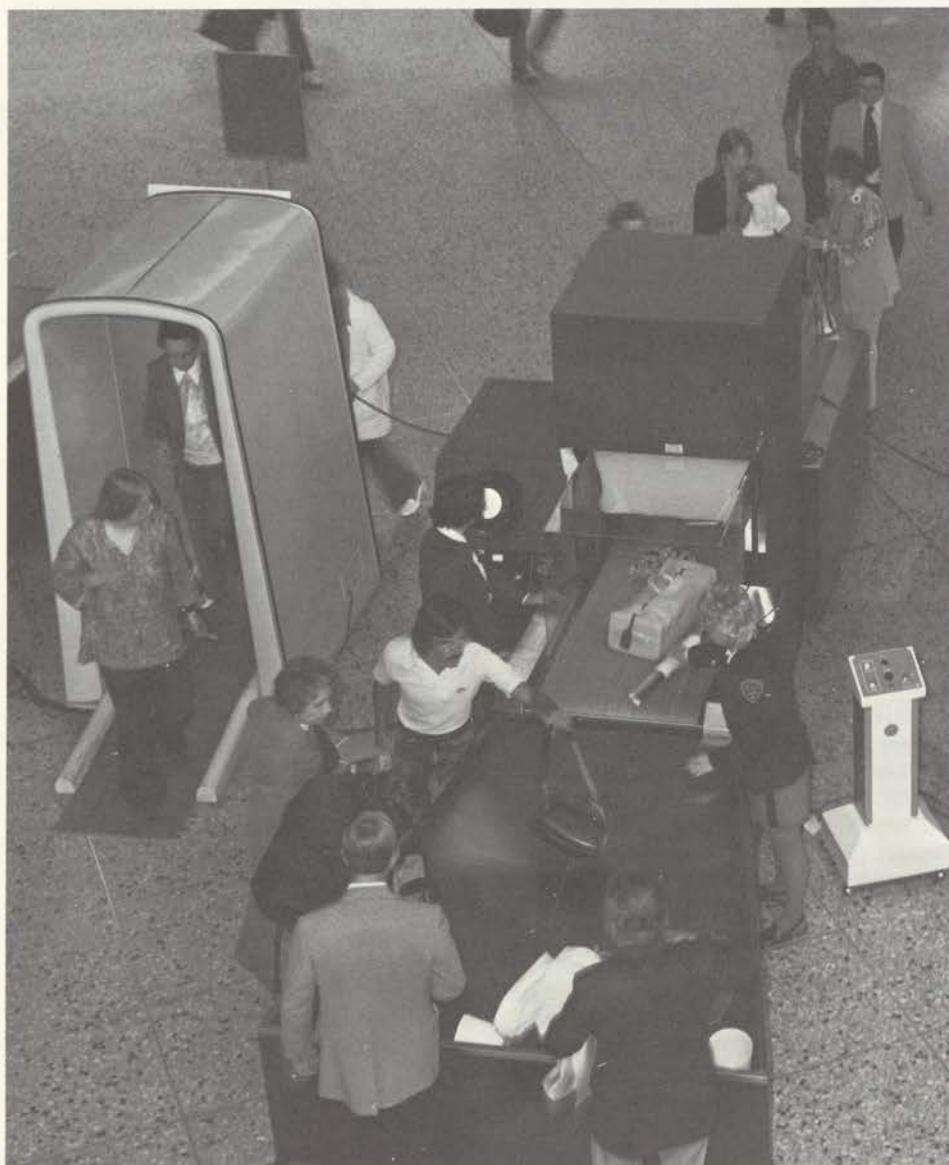
While hijackings were prevented in 1974, bomb threats continued to plague security officials. Airports reported 221 bomb threats and 1,138 threats were made against aircraft. These figures compare to 1,424 aircraft threats and 146 airport threats in 1973.

To counteract the problem, FAA is sponsoring an Explosive Detection/Dog Handler Team Program, under a grant from the Law Enforcement Assistance Administration. Nineteen teams were trained and assigned to airports by the end of FY 1974. Seminars in bomb detection and aviation explosives security were held throughout the country.

### Air Traffic and the Airspace System

Federal Aviation Administration air route traffic control centers handled 22.9 million aircraft flying under instrument flight rules during the year, up slightly from the 1973 total of 22.8 million. Terminal area traffic increased by five percent, with FAA airport traffic control towers handling 56 million takeoff and landing operations.

Modernization of the National Airspace System (NAS), which began with the Project Beacon report 13 years ago, moved closer to completion. The 20 air route traffic control centers located in the contiguous 48 States were operational in the first



... the drop in attempted hijackings was no accident ...



phase of the automated system. Phase one of the NAS Enroute Stage A includes automatic flight data processing and interfacility data transfer. The traffic control centers in Los Angeles and Kansas City were also operational in phase two of the system, consisting of digital radar displays and radar data processing. Sixteen other centers were in various stages of testing radar data processing.

Automated Radar Terminal Systems (ARTS III) were fully installed at the 61 busiest airport terminals in the Nation, with 59 of the systems operational. The remaining two, Dallas/Fort Worth and San Francisco/Oakland, were within a few months of operational status.

In addition, FAA plans to provide primary tracking and continuous data recording capabilities for 30 high density terminals. The research and development on these additions to the ARTS III system was completed during the year and procurement specifications were being written. A slightly less complex automated system, ARTS II, will be installed at 70 lower density terminals with deliveries to begin in FY 1975.

While continuing to improve the performance and reliability of the present air traffic control system, FAA moved during 1974 toward the further development of a third generation system capable of handling the growing traffic loads in the future. One part of this system, the Aeronautical Satellite (AEROSAT) Program, was established with the signing of a memorandum of understanding by the United States, Canada, and 10 European nations making up the European Space Research Organization. The initial purpose is to place two satellites in stationary orbit over the North Atlantic for experimentation and evaluation of an oceanic air traffic control and communications system. Ultimately, successful demonstration of a cost-effective system will result in the routine use of satellites for international air traffic control over ocean areas.

The agency also experimented with a Discrete Address Beacon, an improved air traffic control beacon that reduces electronic interference and could be used as part of a ground-based anti-collision system. An Intermittent Positive Control (IPC) technique, designed to operate in conjunction with the Discrete Address Beacon

system, would provide a means of detecting and warning any VFR (operating under Visual Flight Rules) aircraft flying on a collision course with another aircraft. Experimental IPC service is in the development stage with testing scheduled for 1976 and 1977.

Development of the microwave landing system (MLS) continued in 1974, with the testing of four feasibility models. Following completion of the test program, in late 1974, prototype development and evaluation was to begin on the system designed to replace the instrument landing system (ILS) now in use.

A plan for automating flight service stations, providing for pilot self-briefing terminals at 3,500 locations, was adopted during the year. The

Raleigh-Durham flight service station was selected for the prototype test.

## Domestic Aviation Progress

The Federal Aviation Administration continued to "encourage and foster the development of civil aeronautics and air commerce in the United States," as directed by the Federal Aviation Act.

The financial grant programs authorized by the Airport-Airway Development Act of 1970 passed the \$1 billion mark, equalling in four years the funds provided in the entire 25-year history of the previous Federal-Aid Airports Program. During the year the FAA acted on 647 grant agreements under the Airport Development Aid Program, obligating the Govern-



... to carry out these responsibilities, the Federal Aviation Administration employs 55,000 people ...

... promotes and enforces aviation safety ...





... responsible for the safety and development of civil air  
commerce ...





ment for funds amounting to \$299.7 million. Under the corollary Planning Grant Program, 278 airport planning projects in 44 states were approved. Funds in the amount of \$7.3 million were expended in support of planning projects underway.

More than 800 airport sponsors submitted applications for aid totaling \$464.1 million, bringing the number of requests on hand to 1,044 and total fund requests to \$618.4 million.

The first edition of the National Airport System Plan, as required by the 1970 Airport-Airway Act, was made public in September 1973. It forecasts a need for 700 new airports (660 of them general aviation airports) in the 1973-1982 time period. The estimated cost was put at \$6.3 billion.

### Aircraft Noise Reduction

The FAA took a major step in its noise abatement program when it issued a new regulation requiring newly produced airplanes of older design types to meet the same noise standards as new type design aircraft. Back in 1969, the agency laid down new noise standards that resulted in a whole new generation of quieter aircraft, including the DC-10, L-1011, B-747, F-28, Cessna Citation, and Dassault Falcon 10. In October 1973, the agency took final action on a regulation to require that older design airplanes (such as the B-707, B-727, B-737, and DC-9) coming from the factory conform with the standards that cover new design craft under the 1969 regulation (Federal Aviation Regulation Part 36).

While this action was probably the most important noise control measure of the year, the FAA also proposed a new regulation in March 1974 that all commercial fleet aircraft not up to the 1969 standard (FAR 36) be retrofitted with sound-absorbing material in engine nacelles. Public comments were requested by June 1974 and, at year's end, the question of how to proceed with the proposed retrofit program was still under review.

In other rulemaking actions on noise control, the FAA proposed noise standards for propeller driven aircraft, asked for comments on noise standards for short haul aircraft and on a proposed ILS noise abatement approach procedure.

In addition to environmental concerns, the agency responded to the need to reduce fuel consumption in the face of the Middle East oil embargo

and to conserve energy over the long term. Administratively, the Federal Aviation Administration surpassed the seven percent energy consumption reduction required of all government agencies. The agency instituted a seven-point conservation program calculated to save 840,000 gallons of jet fuel per day in the private sector.

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**"No U.S. aircraft was hijacked during fiscal year 1974. . . . There is little doubt that the . . . security measures instituted by the FAA . . . were instrumental in containing the hijacking threat."**

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The two Federally-owned and FAA-operated airports — Washington National and Dulles International — showed traffic increases in FY 1974. Despite cutbacks in the number of scheduled flights to save fuel, the number of airline passengers using National airport rose to 11,488,771, compared to 10,928,220, a 3.3 percent increase over 1973. Revenue for the two airports was \$20.4 million, up from \$18.3 million for the previous year. Cargo volume fell slightly at National (to 195,832,000 pounds), but was up 20.8 percent at Dulles (to 97,737,000 pounds).

### International Aviation Activities

In accordance with its statutory responsibilities, the FAA takes an active role in the work of international aviation organizations, provides other countries with technical assistance and training, and participates in other functions relative to the progress of international civil air commerce.

In 1974, for example, FAA contributed substantially to the efforts of the International Civil Aviation Organization (ICAO) to combat acts of sabotage, hijacking and terrorism. The agency also co-hosted the ICAO regional air navigation meeting, attended by 200 representatives from 28 countries. At year's end, FAA was helping prepare the U.S. positions to be presented at the 21st session of the ICAO Assembly, the policy-making arm of the international body.

Over the course of the year, FAA used some \$23 million in funds provided by the Department of State's

Agency for International Development (AID), the Department of Defense's Military Assistance Program (MAP), and individual foreign countries to render assistance to aviation projects in Bolivia, Vietnam, Zaire, the Republic of China, Iran, and other countries. The FAA also trained 377 technicians from 50 countries in various aviation specialties, furnished flight inspection services to foreign governments, and dispatched 54 technicians to assist on short-term projects in 18 countries.

### Emergency Readiness

The U.S. Military Airlift Command response to the outbreak of the Middle East War on October 6, 1973, was accompanied by a new FAA alerting system establishing three levels of readiness. In February the new system was incorporated into the FAA Emergency Preparedness Plan — assuring FAA's capability to provide full support to DOD in any type of emergency.

### Equal Employment Opportunity

The FAA moved forward in the equal employment opportunity area in 1974: promoting 50 women and minority-group members to supervisory positions; achieving a hiring rate of 19 percent for minorities and 25 percent for women; developing "upward mobility" programs in two regions to provide career advancement opportunities; awarding \$6 million in contracts to minority contractors; awarding the Navajo tribe a systems planning grant for development of airports on the Navajo reservations; and expanding the four-year-old "150 Program" after evaluations showed it to be a successful means for preparing women and members of minority groups for air traffic and electronic technician careers.

The number of eligible controllers seeking to take advantage of the "second career" training program, launched earlier, continued to rise. As of June 30, 1974, 801 air traffic controllers had been certified as eligible. Of these, 15 had completed training, 415 were enrolled in training, and 163 were awaiting transfer to training status.

In a notable career enrichment project, the agency initiated a nationwide program to permit employees at journeyman levels to secure a college education in their spare time. Twenty locations were selected for the program, with five in operation at year's end.



## FEDERAL HIGHWAY ADMINISTRATION

Two events of major significance during fiscal year 1974 changed the concept and operating practices of the Nation's transportation industries. Each event was important in itself, but, in combination, they had both immediate and long range transportation effects. These two events were the enactment of the Federal-Aid Highway Act of 1973 and the Arab embargo of oil to the United States and the later tripling in price of crude oil imports. Their influence on the daily work of the Federal Highway Administration (FHWA) was instantaneous and direct.

The Federal-Aid Highway Act of 1973 provides for continuation of construction of the Interstate Highway System for the next three years. In size alone, it is the single most important piece of legislation the Department of Transportation administers. It is equally important, however, for providing new approaches to the solving of the urgent transportation problems in the Nation's urban areas. The Act, for the first time, gives State and local officials flexibility in the use of Highway Trust Fund dollars and permits them, under certain circumstances, to use these funds for public transit purposes.

The stoppage, later in the year,

of Arabian oil exports to the United States and the subsequent tremendous increases in the price of imported crude oil resulted in dramatic changes in the Nation's transportation patterns. These included the imposition of a nationwide 55 miles-per-hour speed limit, the adoption of a number of energy conservation measures, a falling off both in auto travel and in gasoline consumption, a spectacular reduction in highway fatalities, and in some instances, a slowdown in highway construction.

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**"The Federal-Aid Highway Act . . . is the most important . . . legislation the Department . . . administers."**

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### The Federal-Aid Highway Act of 1973

The law set aside \$23 billion for highway and mass transportation construction programs over the next three years. It also permits State and local officials to use trust fund dollars for alternatives to highway construction—such as buses, exclusive bus lanes, and rapid rail systems. About \$2.5 billion

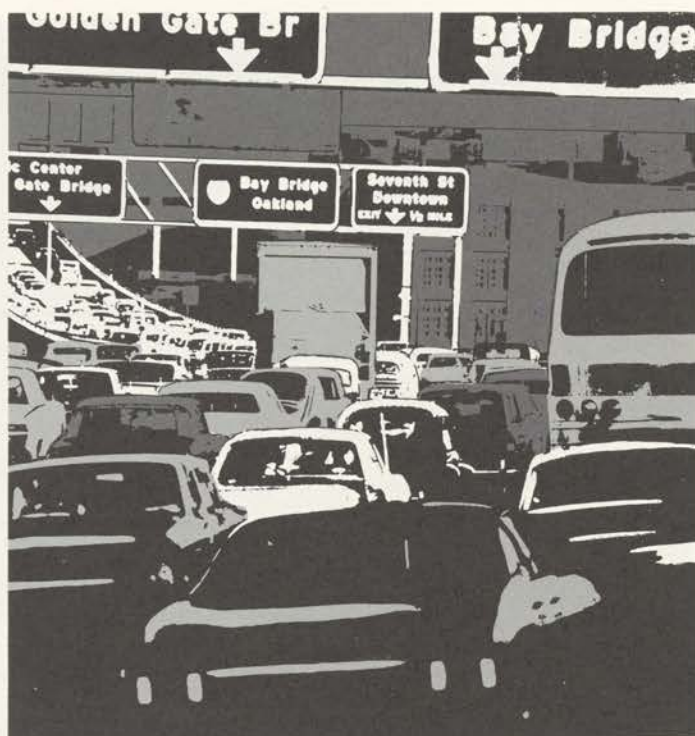
is authorized for this urban usage.

Another provision set aside, from general Treasury funds, \$3 billion in new authority for capital grants under the Urban Mass Transportation program. A third provision permits the substitution, on a dollar-for-dollar basis, of mass transit projects in place of unbuilt Interstate highway segments no longer considered essential to the national system.

The 1973 Act also authorized \$8.75 billion to be spent on the 42,500 miles of Interstate system over a three year period. Another \$3.3 billion was authorized for various rural highway programs.

Of the 99 sections in the new law, eleven must be administered jointly by the Federal Highway Administration and the Urban Mass Transportation Administration.

In fiscal year 1974, there were four mass transit substitutions for urban highway construction projects under the provisions described above. Nearly \$800 million was made available for transit projects, although only \$61 million in Interstate substitution projects and \$34.6 million in Urban System substitution projects were actually initiated. The projects are listed on the next page.





## Energy Conservation

The Emergency Highway Energy Conservation Act, signed by the President on January 2, 1974, required the States to establish a uniform 55 mph speed limit for all classes of highways. States which did not comply were subject to losing Federal-aid highway funds. All States were in compliance with the Act by April 3, 1974.

To emphasize the gravity of the energy shortage, FHWA conducted a nationwide series of Transportation Energy Conservation Seminars. As a result, many urban areas are preparing or have completed a transportation energy conservation plan, 147 have functioning carpool matching systems, and 53 have been approved for demonstration projects using Federal-aid highway funds authorized under the Emergency Highway Energy Conservation Act.

Acute shortages of fuel and asphalt occurred during the fall and winter of FY 1974, a period, fortunate-

ly, when construction is normally curtailed. A total of 78 projects were suspended or significantly delayed because of fuel shortages. Nationally, nearly all highway departments indicated moderate to severe asphalt shortages with the most widespread shortages in the East and Southeast. Exceptionally high bids for asphalt items were being reported by 40 highway departments.

The Federal Highway Administration began freeway research projects which are expected to help save fuel and reduce vehicle operating costs. The projects are directed toward the development of traffic surveillance, information, and control systems for heavily traveled corridors. The systems are expected to provide information to drivers to facilitate diversion to uncongested routes, in addition to controlling freeway ramp traffic so that congestion is minimized on the major roadways and so that parallel routes with excess capacity are more fully utilized.

The Urban Traffic Control System/Bus Priority System project in Washington, D.C., was continued. Another study aimed at achieving significant energy conservation is the "Economic Evaluation of Exclusive Bus and Truck Road Systems and of Restrictions on Truck Traffic During Peak Hours." Implementation of the results of this study would reduce congestion and speed traffic, thus reducing fuel consumption.

## Highway Construction and Improvement

As of June 30, 1974, 84.3 percent of the designated 42,500 miles of the Interstate System was open to traffic. This brought the total mileage in use to 35,821, an increase of 973 miles from the previous year. Sections completed to full design year standards increased by 1,146 miles or approximately 3.1 miles per day. In all, 84.5 percent of the system's total rural mileage and 83.5 percent of its total urban mileage were in use at the end of the year.

In addition to the sections in use, 3,020 miles were under construction, and engineering and right-of-way acquisition was completed or underway on another 2,764 miles. Altogether, work was either completed or underway on 99 percent of the total 42,500-mile System.

During the year, 3,910 construction contracts totaling \$4.8 billion were awarded. Of this number 1,849 contracts were awarded for the Federal-Aid Primary System (exclusive of the Interstate) and 919 for the Federal-Aid Secondary System. (These contracts include those awarded for urban projects.) The average size of the contracts was \$1,228,871.

The Traffic Operations Program to Increase Capacity and Safety (TOPICS) provides funds to help urban areas increase the efficiency of their highway networks. The results of these low capital projects are decreased congestion and reduced frequency and severity of accidents. The need to conserve energy prompted the FHWA to encourage State and local highway agencies to step up their TOPICS projects, and activity in this area increased during the final quarter of fiscal year 1974.

As of the end of June 1974, \$139.1 million in Federal-aid funds were obligated for TOPICS projects. Of this amount, \$95.3 million, or 68.5

### MASS TRANSIT SUBSTITUTION PROJECTS

State	Urbanized Area	Source of Funds	Amount of FY 74 Federal Funds (000's)	Description of Project
New York	New York	Urban System	\$12,091	Bus purchase
			21,000	Various rail transit improvements
Illinois	E. St. Louis	Urban System	1,548	Bus purchase
Massachusetts	Boston	Interstate	10,000*	Preliminary engineering work for various rail transit improvements, relocations, and extensions
Pennsylvania	Philadelphia	Interstate	51,000	Various rail transit improvements

\*In addition \$21,756,000 of Interstate funds were reserved for the extension of the South Shore Rapid Transit Line in the Boston urbanized area.



percent, were regular funds and \$43.8, or 31.5 percent, were categorical TOPICS funds remaining from prior apportionments.

Another important feature of the 1973 Act provided for the construction of urban highways connected to the Interstate System. These routes must serve areas of concentrated population or of heavy traffic congestion, and meet the urgent needs of commercial, industrial, airport, or national defense installations. No State may select more than one route of this type and it may not be longer than 10 miles.

A total of \$48.5 million for urban high-density funds was allocated following a review of 11 candidate routes, which were submitted by 10 States.

The Urban Corridor Demonstration Program (UCDP) has tested and demonstrated techniques for reducing peak-hour congestion in urban corridors. The biggest success is the exclusive bus lane on the Interstate route (I-495) from the New Jersey Turnpike to the Lincoln Tunnel in New Jersey. This one bus lane carries an average of 34,000 people each morning, saving each passenger between 10 and 15 minutes travel time to downtown Manhattan. The FHWA obligated \$9.7 million for the UCDP and the Urban Mass Transportation Administration obligated \$3.5 million.

Increased emphasis was placed on the development of fringe and corridor parking projects linked to public transportation projects. A joint FHWA/UMTA directive was prepared to outline procedures for the implementation of public transportation projects. Park-and-Ride projects using Federal-aid highway funds were initiated in California, Florida, Louisiana, New Jersey, New York, Oregon, Virginia, Washington, and Wisconsin.

The Federal Highway Administration administers annual appropriations for major highway programs for forest highways, emergency relief, and public lands and performs highway engineering and construction services for other Federal agencies. At the close of the fiscal year, 76 projects were under contract with an obligation of \$59.4 million for construction on 263.8 miles. Additional work on 342.8 miles, estimated to cost \$41.7 million, was either in the programed, plans-approved, or advertised stage.

The 1973 Federal-Aid Highway Act provides for negotiations with Canada for reconstruction of the

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... techniques for reducing peak-hour congestion in urban corridors ...

Haines Road and the northern section of the Alaska Highway in Canada. The Act authorized \$58.7 million to be appropriated for work on this project. A formal agreement between Canada and the United States is expected to result.

Section 113 of the Federal-Aid Highway Act of 1970 authorizes the appropriation of \$100 million to finance two-thirds of the cost of constructing the 250-mile Darien Gap Highway in Panama and Colombia.

Two construction projects, costing about \$20.5 million, for about 100 kilometers (62 miles) of road and bridge construction were underway in Panama. Construction of an additional 71 kilometers (44 miles) of roadway and bridges was advertised for bids.

The Federal-Aid Highway Acts of 1970 and 1973 authorized grants to help the territorial governments of the Virgin Islands, Guam, and American Samoa improve their highways and a total of \$11.8 million was released for obligation.

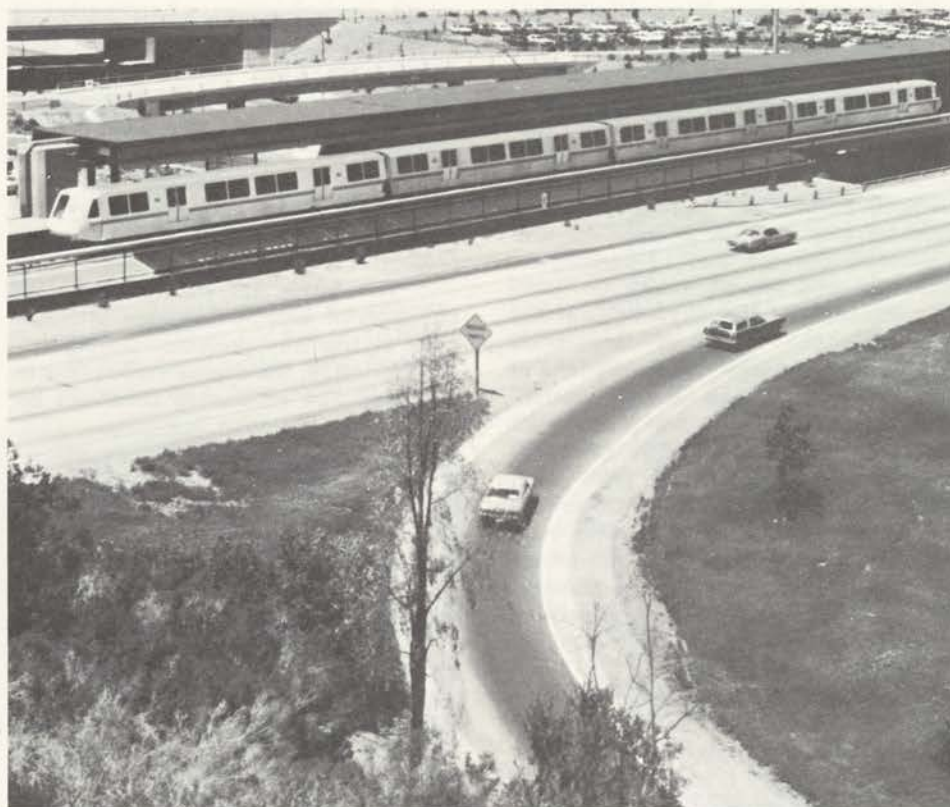
FHWA continued to provide technical assistance to Argentina, Brazil, Costa Rica, Kuwait, Laos, and Nicaragua during fiscal year 1974.

Under the Defense-Access Road Program, FHWA cooperates with the Department of Defense in providing the highway improvements needed to serve defense installations. During FY 1974, the Defense Department transferred more than \$7.4 million to FHWA for these defense installation highways. The Federal Highway Administration continued to provide improvement of public streets and highways in the vicinity of Safeguard ABM installations in North Dakota.

During fiscal year 1974, the President declared 49 major disasters in







37 States under the Disaster Relief Act of 1970. FHWA provided engineering and technical assistance to the Federal Disaster Assistance Administration in these areas by estimating highway and bridge damage and restoration costs, and by inspecting the repair and reconstruction projects.

In an allied program, 39 States received highway emergency relief during FY 1974. The funds included \$102.3 million for repair or reconstruction of the Federal-aid systems and \$13.9 million allocated to other Federal agencies for repair or reconstruction of roads and bridges under their jurisdiction.

### Safety

The passage of the Federal-Aid Highway Act of 1973 made funds available for improvements off the Federal-aid system, through the Safer Road Demonstration Program. Improvements eligible for funding under this program include: the removal of roadside obstacles, the elimination of hazards at railroad-highway grade crossings, and the proper marking and signing of highways.

Discrete programs were also established for projects on the Federal-aid system, exclusive of the Interstate, for elimination of hazards at rail-highway crossings, elimination or reduction of hazards on highways with high accident experience or potential, and the elimination of roadside obstacles. In addition, a special demonstration program provided funds for pavement marking projects on any highway other than the Interstate.

FHWA prepared interim instructions for developing these projects as well as minimum requirements for conducting the engineering surveys required by the Act. The new directive requires each state to develop and implement a safety improvement program for all highways. Each program must include procedures for the selection, scheduling, construction, and evaluation of safety improvements with the specific objective of reducing the number and severity of accidents.

For the regular Federal-Aid Safety Improvement Program, in addition to the special programs mentioned above, \$220 million was obligated during fiscal year 1974. Of this total, 60.7



percent was Interstate funds, 6.1 percent TOPICS funds, and 33.2 percent was other funds. When broken down by safety improvement classification, 29 percent of the funds were for roadside appurtenances, 11 percent for intersections, 28 percent for cross sections, 9 percent for structures, 4 percent for alignment, 6 percent for rail-highway crossings, and 13 percent for miscellaneous improvements.

Pursuant to the 1973 Federal-Aid Highway Act, FHWA, in cooperation with State highway departments and the Federal Railroad Administration, undertook a study of the problem of providing increased highway safety by the relocation of railroad lines from the central area of cities. Directives were also issued for advancing new railroad-highway programs authorized by the 1973 Act, including demonstration projects on railroad relocations and railroad-highway grade crossing safety improvements.

The 1973 Federal-Aid Highway Act extended an earlier special program to replace a limited number of the country's deficient bridges. During the year, 10,800 applications were received. Total funds obligated to date are \$132.1 million, with an additional \$29.2 million programmed. These figures do not include the necessary funds for construction of the 82 bridges presently under design.

The increasing number of bicycle-related injuries and deaths reflects the rapidly growing number of bikes on the road. The number of bicycles in use has risen from 28 million 12 years ago to 71 million today.

The Federal-Aid Highway Act authorizes the States to use \$40 million from their Federal-aid highway ap-

portionments for the construction of bicycle and pedestrian facilities in each fiscal year. Even before passage of this Act, the Federal Highway Administration encouraged the provision of facilities for bicyclists and provided funding for the construction and planning of such facilities when they were incidental to a Federal-aid highway project.

The 1973 Act permits the construction of bicycle facilities independent of highway projects. During fiscal year 1974, the States made plans to use over \$24 million to construct bicycle and pedestrian facilities.

The agency expanded its efforts to improve safety in the transportation of hazardous materials. Products classified as flammable, explosive, toxic, or disease-bearing are transported in vastly greater numbers.

To meet the growing need, the FHWA increased inspection activities by more than 60 percent and enforcement activities by 21 percent. Over 2,500 safety inspections were conducted by motor carrier safety investigators at carrier and shipper facilities, compared with 1,500 in FY 1973. These inspections resulted in the filing of 129 enforcement actions for flagrant violations of the Hazardous Materials Regulations. Special geographic inspections were made. For instance, in a one-week period, in one large city, six safety investigators completed 30 safety surveys which resulted in two enforcement cases being developed for criminal prosecution. Thirty roadside inspections of trucks were also conducted.

During the year, the Bureau of Motor Carrier Safety performed the inspection activities listed below,

#### INSPECTIONS AND SURVEYS

Safety Surveys of Carriers	5,020
Roadside Inspections of Vehicles & Drivers	27,300
Hazardous Material Surveys of Carriers & Shippers	2,600
Hazardous Materials Inspection of Facilities, Special Containers, and Permits	250





In FY 1974 there were 1,195 enforcement investigations undertaken. A total of 444 of these were forwarded to FHWA's legal staff for appropriate disposition. During the fiscal year, 86 civil forfeiture proceedings were begun and nearly \$300,000 was paid to the U.S. Treasury from civil cases. There were 244 criminal prosecutions as a result of enforcement investigations and almost \$250,000 in fines were collected.

Motor carrier accidents and hazardous materials incidents in FY 1974 resulted in the actions listed below.

was developed to assist Federal, State, and local highway officials to meet Federal noise standards. A demonstration project was initiated to aid the States on noise data equipment purchases and to offer training on the use of the different types of noise data acquisition and analysis equipment.

The FHWA issued Interim Air Quality Guidelines to help planners ensure that Federal-aid highway planning and construction met the requirements of the Clean Air Act of 1970.

Before construction of a Federal-aid highway at a new location a de-

14,500 clubs and approximately 375,000 members. This program is optional with the State highway departments, but participation is encouraged since experience with wildflower seeding in several States has produced remarkable results.

A program to replace State and local publicly owned facilities on sites acquired for highway purposes was begun in 1972. By the end of fiscal 1974, FHWA had approved the replacement of: 13 schools; 13 park, recreation, or wildlife facilities; 3 police facilities; 1 fire facility; and 7 miscellaneous public facilities, including a municipal animal shelter, a city hall, and a filtration plant.

The FHWA participated in efforts to achieve greater uniformity in the relocation assistance programs of all Federal agencies. During fiscal year 1974, a total of 24,684 people, 208 farms, 2,625 businesses, and 109 nonprofit organizations were displaced by highway projects. The total of all relocation grants for the year was \$47,544,880.

#### INVESTIGATIONS AND REVIEWS

General Investigations	301
Indepth Investigations	171
Hazardous Materials Incident Reports	7,260
Carrier Accident Reports Reviewed	39,250

#### Studying Impacts of Highway Construction

During the year, FHWA approved 46 State action plans designed to lessen harmful economic, social, and environmental effects resulting from the construction of Federal-aid highway projects.

The agency continued to promote the need for having all new highway projects evaluated by a wide variety of professional skills. It conducted executive seminars and training courses on the need for increasing community involvement in the early stages of all new highway planning.

A 40-hour basic training course

tailed environmental impact statement must be prepared. In FY 1974, 297 draft environmental impact statements were received. Among the 297 were 27 with Section 4(f) statements concerning the protection of parks, recreation and refuge lands, and historical sites. In addition, 310 final environmental impact statements (including 53 with Section 4(f) statements), were received.

During FY 1974, there was a renewed effort to improve the compatibility of highway design and survival of the Nation's wildlife. The objective is to develop national, regional, and State wildlife protection policies and to simplify wildlife management procedures relating to highways.

In fiscal year 1974, \$35.6 million was obligated by the States for outdoor advertising control and 123,029 advertising signs were removed. This brought the total advertising signs removed to 273,370. The States also obligated \$1.4 million for the control of junkyards and \$8.2 million for landscaping and scenic enhancement.

The National Council of State Garden Clubs, Inc., is working with the State highway departments and the FHWA to promote the propagation and growth of wildflowers along our Federal-aid highways. The Council has

#### Equal Employment Opportunity

During FY 1974, State highway departments and FHWA reviewed 1,632 contracts valued at over \$4 billion for compliance with equal employment opportunity requirements. Of the 1,632 reviews conducted, 1,394 resulted in determinations that contractors were in compliance with the equal employment opportunity provisions of their contracts. Of the 110 found in noncompliance, 81 follow up reviews revealed positive action by the contractors to comply with EEO contract provisions.

In FY 1974, the total FHWA employment in full-time permanent positions decreased from 4,836 to 4,803. The number of minority employees in full-time permanent positions during this period increased from 646 to 692.

Minority employees comprised 14.4 percent of the FY 1974 FHWA full-time permanent work force. During FY 1974, 223 of the 997 FHWA promotions, or 22 percent, went to minority employees.

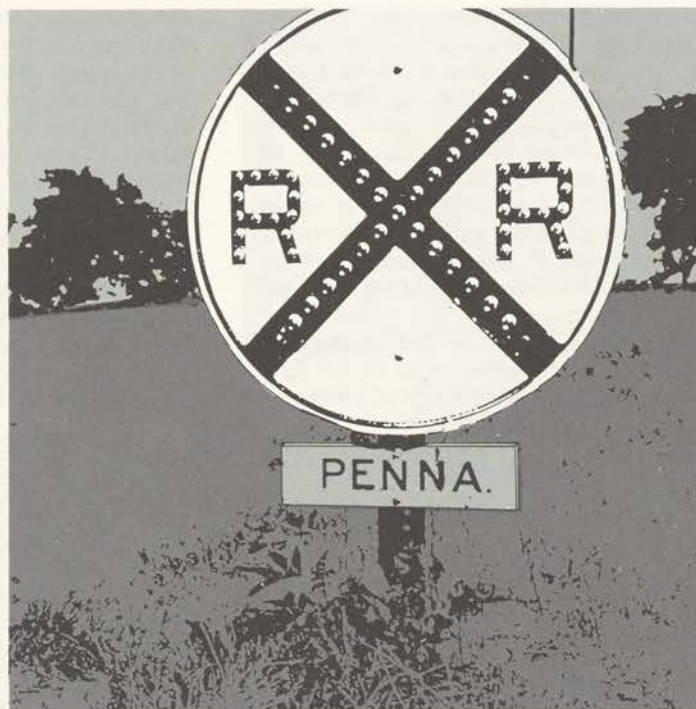
The number of female employees in full-time permanent positions increased from 1,231 to 1,249 in FY 1974, and of 997 FHWA promotions, 32 percent went to women. Women represented 26 percent of the total FHWA work force at the end of FY 1974.

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## FEDERAL RAILROAD ADMINISTRATION



The energy crisis that emerged during the year underscored the importance of forging a stronger role for the fuel-efficient railroads in the Nation's transportation system. Ironically, this public awakening came on the heels of the bankruptcy of some of the major rail carriers serving the Northeast and Midwest regions of the country. During the year, a significant portion of the Federal Railroad Administration's (FRA) effort was directed toward establishing the institutional framework for the creation of a viable rail system in the Northeast and Midwest, as prescribed by the Regional Rail Reorganization Act of 1973.

The deteriorating economic health of many railroads and their inability to generate sufficient capital resulted in widespread delays in the maintenance of track and equipment. Predictably, this condition resulted in a greater number of accidents during the year and increased safety activity by FRA.

Construction continued on schedule at the Transportation Test Center at Pueblo, Colorado, as did research and development projects in the fields of railroad safety, railroad technology, and advanced systems.

The Federally-owned and operated Alaska Railroad increased the revenue tons of freight handled by more than 10 percent over the previous year. Much of the increase was attributed to the start of construction of the Trans-Alaska Pipeline.

### Regional Rail Reorganization

Within 30 days of enactment of the Regional Rail Reorganization Act, FRA had developed the data base for the Secretary's report, "Rail Service in the Midwest and Northeast Region." The 1,000-plus page report, issued on February 1, 1974, contained recommendations for modernizing and restructuring rail service in the region. It represents the first step in the planning process under which the United States Railway Association will prepare the Final System Plan.

The U.S. Railway Association (USRA) is the body created by Congress under the Regional Rail Reorganization Act to plan and finance the restructuring of participating bankrupt carriers in the region (Northeast and Midwest) including the Penn Central, Lehigh Valley, Lehigh and Hudson River, Reading, Central of New Jersey, and the Ann Arbor into one or more

rail companies with the major organization to be known as the Consolidated Rail Company (Conrail).

Acting as the Secretary's designate, the FRA Administrator manages the interim financing agreements provided by the Regional Rail Reorganization Act. To assure that affected railroads in the Midwest and Northeast have sufficient cash to maintain essential transportation services during the transition to a restructured rail service, Section 213 of the Act provides for grant payments of up to \$85 million. The Administrator during fiscal 1974 authorized \$22.5 million in grant assistance to bankrupt railroads under Section 213. In addition, Section 215 of the Act provides up to \$150 million of assistance to railroads under reorganization for the improvement of rail properties to be included in the system. The complex financial and legal considerations of implementing Section 215 were not resolved at the close of fiscal 1974.

The Regional Rail Reorganization Act requires that the Final System Plan include the establishment of high-speed rail passenger service in the Northeast Corridor which links the cities of Boston, New York, and Wash-



ington. The Act gives the Secretary the responsibility for beginning the engineering studies needed to establish high-speed service and that responsibility is being carried out by FRA. Contracts entailing approximately \$2.5 million were let for engineering plans covering electrification, signaling, track, stations, grade crossings, and analysis of potential restructuring of both passenger and freight service within the Corridor.

Section 402 (c) (1) of the Regional Rail Reorganization Act establishes a new State rail planning process relating to rail abandonments, rural transportation needs, intermodal facilities planning, grade crossing safety, relocation activities, and passenger service extensions within the region affected by the Act. Contracts were let to the States of Wisconsin and Michigan for the development and documentation of a methodology to meet the rail planning requirements of the Act.

### Railroad Safety

Participation of the States in railroad safety programs increased during the year. Mechanisms were established for State participation in the enforcement of the Federal Railroad Safety Act and five States have signed participation agreements. It is expected that up to 18 States will be in partnership with FRA in rail safety programs by the close of FY 1975.

Among the actions taken in the regulation of safety practices were the issuance of an emergency order governing the transportation of Class A explosives, the proposal of an amendment of the Hazardous Materials Regulations, and the promulgation of a rule to require that tank cars carrying compressed gas be equipped with protective head shields to guard against their being punctured on coupling.

During 1973, (when railroads logged 61 million passenger-train miles and 476 million freight-train miles) a total of 9,698 train accidents were reported, an increase of 2,166 over the previous year. (Railroad accident statistics are compiled on a calendar year basis.) Of the total, 7,389 accidents were derailments, an increase of 1,880 over 1972.

A total of 3,379 accidents involving trains and motor vehicles at grade crossings occurred in 1973, resulting in 1,185 deaths and 3,283

injuries. The total grade crossing accident count was at the 1972 level. The number of deaths was six percent less than in 1972 and the number of injuries was virtually the same as in 1972.

FRA field inspectors, during the reporting year performed 2,210 inspections of the transportation of hazardous materials by railroad and of the preparation for shipment of hazardous materials by shippers. The most common deficiencies in handling involved

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improper placarding of railcars, improper location in trains of railcars carrying hazardous materials, and the improper documentation of hazardous materials shipments. The inspectors in most cases took corrective actions at the time of inspection.

### The Alaska Railroad

The Alaska Railroad operates 483 miles of single mainline track from the ice-free ports of Seward and Whittier to the interior of central Alaska. Freight service is maintained over the entire line. Passenger service is operated from Whittier to Portage and Anchorage and from Anchorage to Fairbanks—a distance of 419 miles.

The Railroad has not required an appropriation from Congress for operating expenses since 1939. With the exception of the rebuilding need resulting from the 1964 earthquake, it has not required an appropriation for capital improvements since 1956.

The Alaska Railroad had an operating loss of \$1,061,167 in fiscal 1974 and net other losses of \$946,611 for a total loss of \$2,007,778 after depreciation of \$2,360,609. Approximately 97 percent of the "other losses" resulted from the write-off of the Rail-

road's share of the \$3 million Transportation Corridor Study. The fiscal 1974 operating loss of \$1,061,167 was far less than the fiscal 1973 operating loss of \$2,950,225 and reflects the improvements in tons of freight handled and the effect of increased freight rates.

The Railroad handled 1,383,144 revenue tons of freight during fiscal 1974 for a total of 280,802,000 ton miles, an increase over fiscal 1973 of 10.4 percent in revenue tons and 8.8 percent in ton miles. Increased interline and local freight came to the Railroad as a result of the start of construction of the Trans-Alaska Pipeline.

During the same period, 84,360 revenue passengers were transported, an increase of 14 percent over fiscal 1973.

### Research, Development, and Demonstration

FRA's Research and Development Program concentrates on improvements in rail technology to provide better and safer freight and passenger services, on the development of advanced technology and equipment for the future, and on providing facilities for testing equipment designs and technology in a controlled but variable environment including FRA's Transportation Test Center at Pueblo, Colorado.

Advances in rail technology were made in the areas of improved freight service, improved track structures, and safety.

A cooperative effort with the Association of Railroads, The Railway Progress Institute, and the Transportation Development Agency has produced the industry's first train handling manual. Work continues in verifying 16 mathematical models of various aspects of train and car dynamics and the test of instrumentation to provide locomotive engineers with information to guide power and brake application.

With support from the Kansas City Southern Railroad, a rail terminal management system is being developed for improved efficiency in flat yard classification activity. A multi-year project to improve freight car truck design by developing performance specifications is under way. FRA's role is to bring together designers, builders, and users in the effort to improve equipment performance.

In the effort to improve safety at



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... from the ice-free ports of Seward and Whittier ...

... to the interior ...

rail grade crossings, test crashes between locomotives and autos were conducted to obtain collision data.

Thermal shields and advanced coupler designs are being evaluated in the project to improve the safety of tank cars. Two full scale fire tests were completed to evaluate the effectiveness of thermal shields in retarding heat penetration into a tank car.

It is estimated that about 30 percent of all railroad accidents are caused by human failure. In an effort to reduce this accident factor, the agency developed recommended requirements and medical tests of physical fitness for railroad employees, developed procedures for control of the use of drugs and alcohol, and evaluated all train crew jobs and their training needs.

### Advanced Systems

FRA's Advanced Systems Program explored innovative vehicle technology. Major effort is concentrated on air and magnetic cushion suspension, advanced linear motor propulsion, high-speed wayside power collection, guideways, and sophisticated secondary suspension system technology.

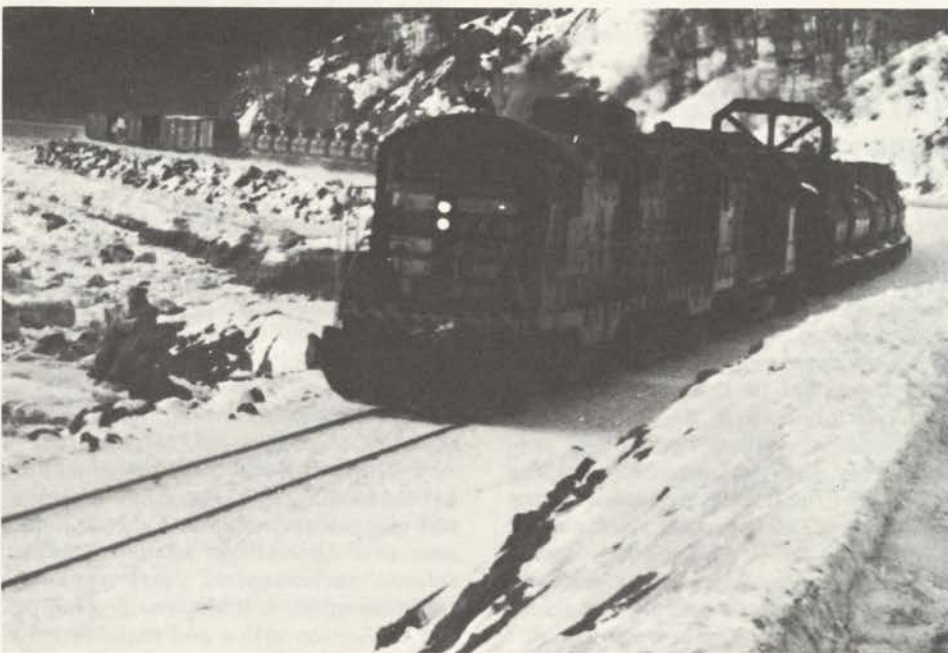
During the year, the Tracked Levitated Research Vehicle was operated at a speed of 90 miles per hour. The guideway now measures three miles.

Contracts were awarded to the Ford Motor Company and the Rohr Manufacturing Company to evaluate repulsion and attraction magnetic levitation concepts.

Fabrication of a 150-mile per hour prototype Tracked Air Cushion Vehicle was almost complete. Five miles of guideway were scheduled to be completed by November 1974.

During the year, the 2,500-horsepower Linear Induction Motor Research Vehicle was tested at speeds up to 234 mph at the Pueblo Test Center, attaining its predicted high-speed capability.

In the tunneling program, a water cannon was fabricated which fractured hard rock in laboratory and field tests. Modifications are being made to reduce noise and eliminate the need to evacuate the nozzle to achieve high pressures. A conceptual design of a tunnel construction system that would evacuate the hole and construct a concrete lining in one operation is expected to result in significant economic and technical advantages.



### Improving Railroad Productivity

The completion of a study on grain transportation alternatives at Iowa State University demonstrated the practicality of unit train service for grain shipment. A unit train is one that carries only one commodity or product. Some 50 grain elevators in Iowa have converted or are under construction to handle volume grain trains. The success of the Iowa study has enabled FRA to join with the Maritime Administration and Department of Agriculture in developing programs to improve export logistics for grain and

other commodities.

The 28 railroads using the Chicago gateway and the Chicago Railroad Terminal Information System, together with FRA, are studying continuous information samples to provide the information needed to speed up railroad shipments by reducing transit time through freight terminals.

In the field of freight car management, FRA is conducting research intended to improve car supply, reduce transit time, improve service reliability, increase car utilization, reduce operating costs, and increase labor productivity.



## NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION



The most dramatic traffic safety development in fiscal 1974 was the sharp decrease in highway fatalities. With the onset of the gasoline shortage in October 1973, the traffic death rate began to fall, with the first evidence of a trend appearing in the November figures. Between January and June of 1974, deaths decreased by some 23 percent over the comparable period a year before, or approximately 1,000 fewer a month. For fiscal 1974 as a whole, there were 13 percent fewer deaths than in the previous year.

The National Highway Traffic Safety Administration analyzed the statistics and found the about-face in the march of highway fatalities could not be attributed to one individual cause or program. It found the cause included such factors as reduced auto travel, lower driving speeds, less long distance driving, and less pleasure driving. Of all contributing factors, the nationwide 55 mph speed limit was the most important.

The National Highway Traffic Safety Administration (NHTSA) administers a national program to reduce traffic fatalities, injuries, and property damage. To accomplish this, it provides technical and financial assistance to

the States, develops and sets national highway safety standards, and establishes and enforces Federal Motor Vehicle Safety Standards (FMVSS) in a continuing effort to improve highway safety.

With a fiscal 1974 budget of \$156,159,000, the agency employs 881 people and conducts three major programs involving motor vehicle safety, traffic safety, and research and development. It also has a planning and evaluation office and maintains 10 regional offices.

While the downturn in motor vehicle traffic deaths commanded major coverage in the popular press and professional journals, NHTSA made steady progress in its campaign to increase highway safety along other fronts.

During fiscal 1974, NHTSA continued its priority program to remove the drunk driver from the road by applying remedial measures developed by the Federally-funded Alcohol Safety Action Projects (ASAP's). Local alcohol safety programs are financed by a mix of Federal, State, and local funds.

Following a court decision on passive restraints, NHTSA issued new specifications for the crash test dummy in August 1973. In March 1974,

NHTSA published a notice of proposed rulemaking to require passive restraints (such as air bags) on all passenger cars beginning in September 1976, thus allowing time for production and testing of the new dummy. At the same time NHTSA moved to require passive protection for frontal, side angular, and rollover crashes, and new rear crash protection. A "passive" restraint is one which is operated automatically and does not need to be activated by the passenger.

Efforts to make the passenger car safer entered a new phase with the completion of the Experimental Safety Vehicle (ESV) Program. An evaluation board report on the ESV's was approved by the Department of Transportation in December 1973. The report recommended development of Research Safety Vehicles (RSV's) in the 3,000-pound category. Contracts were let for Phase I of the RSV program in January 1974. At the same time, tests of foreign safety vehicles, which began in FY 1973 with Italian cars, were continued with vehicles from Japan.

The Highway Safety Act of 1973, which became effective in August 1973, extended provisions of the Highway Safety Act of 1966 to the Virgin Islands, Guam, American Samoa,



and, in a special way, to the Indian Reservations. It also authorized research on the effect of drug use on highway safety and the effect of mental and physical disabilities on driving. As provided in the Act, a study on the use of mass media for informing and educating the public on ways and means to reduce the number and severity of highway accidents was completed and forwarded to Congress.

The Act also directed research into pedestrian and bicycle safety, driver education, and highway safety needs and requested a statement of the cost of meeting such needs.

In the area of Motor Vehicle Safety and Economics, NHTSA began a comprehensive series of cost-benefit studies in August 1973. In compliance with the Motor Vehicle Information and Cost Savings Act of 1972, contracts were awarded for a Consumer Information Study to provide consumers with understandable and reliable information to enable them to compare damage susceptibility, crashworthiness, ease of diagnosis and repair, and insurance premium costs of different makes and models of automobiles.

### Traffic Safety

In fiscal 1974, 50,130 people were killed in traffic compared with 57,610 in the previous year, a decline of 7,480 or about 13 percent.

In considering the reduction in traffic fatalities it is important to make a distinction between the *rate*, the *percentage*, and the *actual number* of persons killed.

In 1967, when the traffic safety programs were launched, the fatality rate per 100 million miles driven stood at 5.5. That year there were almost 99 million vehicles on the road and they traveled 965 billion miles. The 5.5 reflects 52,924 deaths.

In 1973 the rate was 4.3 and curving downward. Vehicles numbered 128,700,000, a 30 percent increase, and they traveled 1,306 billion miles, a 35 percent increase. The 4.3 rate reflected 56,035 deaths, a numerical increase of 3,111 over 1967.

But weighed against the increase in vehicles and miles traveled, the rate drop from 5.5 to 4.3 represents a 22 percent reduction, an achievement unmatched by any other record-keeping country in the world.

It is difficult to pinpoint the relative effectiveness of the variety of

automotive and highway safety devices and measures that contributed to this reduction over the years. New vehicle safety features, highway design factors, and law enforcement are believed to be among the contributing factors.

In FY 1974, 74 percent of the passenger cars on the road incorporated the basic safety devices and their cars accounted for *more* than three-fourths of the mileage. Despite the fact that there were nearly 30 percent more registered automobiles than in 1967, passenger car fatalities remained virtually constant through 1973.

Improved highway design and maintenance contributed to safety, as did safer guardrails, breakaway signposts, better and more uniform signs and signals, and "crash cushions" at rigid danger spots like bridge abutments. (The table below compares the fatality rates of fully-improved and semi-improved roads and highways, and generally shows a decrease in rates between 1967 and 1972.)

Federal, State, and local highway programs such as the alcohol safety program, improved and special law enforcement measures, and modernized emergency medical services also contributed to the overall reduction in highway fatalities.

In spite of the gains made, there is a long way to go before the Nation's streets and highways can be called safe. Secretary of Transportation Claude S. Brinegar said, "We are working against at least five factors that *individually* increase the risk and *collectively* compound the hazard." They are:

The exposure factor. More and more drivers traveling more miles per year (and until recently, at escalating speeds) all add up to more opportunity for accidents to occur. The motor vehicle population increased more than five percent in 1973, driving licenses nearly three percent annually, and miles driven have been averaging a more than five percent increase (in 1973 this was cut to 3.4 percent due to the fuel shortage).

The youngest and oldest driver age groups are gradually increasing as a percentage of driver license holders, and these two age groups are the most accident prone. Only 22 percent of all licenses are held by people under 25, but this group is involved in 37 percent of all fatal non-pedestrian accidents.

Average vehicle speeds have increased year by year on every type of road, especially on rural roads—until speeds were reduced in 1974 to conserve fuel. Higher speed leads to more accidents and adds to the severity of injuries.

Alcohol is the number one killer on the highway. Between 1965 and 1972, national consumption of distilled spirits was up 33.8 percent, beer increased 15.6 percent, and wine 54.7 percent. The latter two are most frequently the cause of youthful intoxication.

The growing disparity in types, weights, and sizes of vehicles on the road. Whereas registration of all motor vehicles increased by 30 percent between 1967 and 1973, trucks increased by 40 percent, and motorcycles, 116 percent. Subcompact and compact cars are growing in numbers

FATALITY RATE ON SPECIFIED HIGHWAYS

	1967	1972
Interstate system (fully improved)	2.89	2.43
Traveled way—interstate (not fully improved)	5.70	3.27
Other Federal aid primary	6.22	5.14
Federal aid secondary—State	7.05	6.52
Federal aid secondary—local	5.86	5.27
Other State highways	4.62	4.71
Local roads and streets	4.70	3.78
All highways	5.34	4.38



out of proportion to the general population. All other factors being equal, in two-car collisions it is almost always the smaller vehicle and its occupants that suffer the greatest damage. The two-wheel vehicles are the most vulnerable of all.

### The Fuel Shortage

The rate of increase in mileage driven began to fall in late spring, 1973, and continued to go down during the balance of the calendar year. In December it was actually less than the previous year. The trend continued in 1974 with some reversal noted in April.

As the energy crisis deepened, some States lowered speed limits and many citizens refrained from driving. Traffic fatalities began to decline in November of 1973, and in each month thereafter were substantially less than for the previous year. There were 7,000 fewer highway deaths during the first eight months of FY 1974 than during the same eight months in fiscal 1973.

Death rates dropped. From the previous all-time low of 4.3 per 100 million miles driven in 1973, the rate decreased to approximately 3.4 between January and the end of June, 1974.

Many factors contributed to the reduction in fatalities; but it appeared that lower speed was the most important single factor. Since lower speed also conserves gasoline, it is obviously a high cost-benefit safety measure.

### Alcohol Abuse

Approximately half of all traffic fatalities in the United States are attributable, either primarily or partially, to the excessive use of alcohol. Each year about 29,000 people are killed in motor vehicle accidents in which alcohol is to blame in some degree. While only 10 percent of the driving population can be classified as problem drinkers, they are involved in two-thirds of the alcohol-related traffic deaths. Social drinkers account for the other one-third. To bring this situation under control NHTSA launched a "drinking driver" program in 1970. The principal elements are:

- The Alcohol Safety Action Projects (ASAP's) which are designed to demonstrate a variety of advanced techniques and measures.
- A national information program to obtain public support through increased awareness of the dangers of the drinker behind the wheel.

- A research program to provide educational materials, improve enforcement, and come up with solutions to various aspects of the problem.

The 35 local projects are the central feature of the program. They are Federally funded for a period of three years. Twenty-nine ASAP's have been in operation for the last two years and have produced measurable results:

- Alcohol-related arrests increased an average of 150 percent in project communities.
- The safety system was improved through the number of drivers arrested, effectively handled by the courts, and placed in treatment programs.
- There was a small but statistically significant reduction in the blood alcohol concentrations of drivers using the roads.
- The ratio of nighttime to daytime fatal crashes was reduced by 10 to 15 percent.

A major goal of the alcohol safety countermeasures program is to stimulate the States and communities to carry out projects focused on the drinking driver and to take action to remove him from the road until he can be returned as a responsible driver.

Drugs other than alcohol can contribute to fatal crashes. Under the Highway Safety Act of 1973, NHTSA instituted a data collection program to determine which drugs are most frequently a factor in highway fatalities, and to identify the drugs most likely to impair driver performance.

### Crash Survivability

Traffic crashes will continue to occur, due to the malfunction of one or more of the major components—the driver, the vehicle, or the environment (such as weather and road conditions). NHTSA approaches the problem of "crash survivability" through improving passenger protection and modifying the vehicle so that it will collapse in a controlled manner to absorb the forces which otherwise might crush the occupants.

To increase motorists' chances of survival, NHTSA revised the Occupant Crash Protection Standard which specifies mechanical release requirements for safety belt assemblies that require no action by the occupant, and issued

### EIGHT MONTH HIGHWAY FATALITY FIGURES

November 1973 - June 1974

	1973	1972	% Change
November	4,536	4,683	- 3.1
December	3,925	4,751	-17.4
Sub-total	8,461	9,434	-10.3
	1974	1973	% Change
January	2,950	3,834	-23.1
February	2,625	3,479	-24.5
March	3,192	4,328	-26.2
April	3,442	4,454	-22.7
May	3,732	4,813	-22.5
June	4,141	5,135	-19.4
Sub-total	20,082	26,043	-22.9
Total	28,543	35,477	-19.5



... half of all traffic fatalities are attributable to the use of alcohol ...



a proposal to provide passive protection at higher speeds. The agency issued new standards covering child restraints, fuel systems, and improved motorcycle helmets and issued proposed standards for passenger seating.

Research concentrated on vehicle structures, biomechanics, and occupant packaging. Basic crash-survivable structural systems for compact and standard-size automobiles were developed and tested for limited crash conditions. Possible improvements in the safety performance of subcompact automobiles and school bus structures were explored.

Occupant protection studies were completed in FY 1974 for first phase development of an advanced driver air cushion system for standard and compact size cars, evaluation of automobile crash sensors, and first phase development of improved inflation techniques, and of the bag and bolster concept to protect front seat passengers. A beginning was made to develop a driver air bag for subcompact cars and to improve occupant protection in lateral and rollover collisions.

Data collected by NHTSA in 19 cities indicated that seat belt usage in 1974 model cars was 67 percent as compared to 28 percent in 1973 cars. This information, collected on a regular basis through cooperation of police and hospital personnel, should permit a comparative analysis of the performance of the various belt restraint systems.

### Crash Avoidance

During FY 1974, crash avoidance was furthered by new standards issued for tires used on commercial and non-

passenger vehicles; a proposed system for grading passenger car tires for treadwear, traction, and high speed performance; better braking systems for trucks, buses, and motorcycles; and better lighting systems. To improve safety of vehicles on the road, vehicle inspection criteria covering brakes, tires, wheels, and steering and suspension systems were issued for vehicles weighing 10,000 pounds or less.

Also under investigation were the effects of tire construction properties on passenger car, bus, and truck handling; the handling characteristics of recreational vehicles, and of cars and light trucks carrying trailers; and the extent to which drivers utilize the upper limits of handling performance in accident avoidance steering and braking.

### Experimental Safety Vehicles

Under the Experimental Safety Vehicle program, 10 family sedan prototypes were delivered and testing was completed in FY 1973. The vehicles performed safely but weighed too much to be practical. An advanced state-of-the-art Research Safety Vehicle (RSV) project is the next logical step in the program. It will address the problems of the 1980's, which include minimizing fuel consumption, controlling urban congestion and pollution, and conserving natural resources.

### Accident Investigations

NHTSA's 13 Multidisciplinary Accident Investigation (MDAI) Teams, located at research centers throughout the United States, carried out special accident studies focusing on statistical samples of certain types of accidents such as pedestrian, single vehicle, intersection, etc., or problems involving post-crash factors such as restraint usage, alcohol, etc.

### Motor Vehicle Safety Standards

The National Highway Traffic Safety Administration checks compliance with Federal Motor Vehicle Safety Standards (FMVSS) by testing vehicles, tires, and equipment. It investigates defects bearing upon safe operation, which may be unknown to the manufacturer. One hundred and thirty-seven penalties totaling more than \$946,000 have been imposed since the program began in 1968. Some 53

penalties amounting to \$267,000 were imposed during FY 1974.

During fiscal 1974 there were 213 safety defect recall campaigns by vehicle manufacturers affecting 4,634,645 vehicles. Twenty-seven of these recall campaigns were influenced by NHTSA investigations.

### Emergency Medical Services

Under the NHTSA concept, all State and community emergency medical services are to be coordinated and directed by geographical area. The State comprehensive plans are making considerable progress in realizing this concept. Perhaps the outstanding accomplishment in FY 1974 was in communication, where new and expanded radio frequency allocations permit better communications between dispatcher, ambulance, and hospital. New telemetry (ambulance to hospital) circuits were opened and multiplex systems became feasible. The Department of Transportation policy in favor of a single emergency telephone number (911) was adopted by many communities and counties.

An emergency medical program, involving the use of military helicopters to evacuate severely injured traffic accident victims, was expanded to 13 sites. Four more locations are to become active in the immediate future, and local communities are planning for six additional projects. The 13 active Military Assistance for Safety and Traffic (MAST) supporting units had flown a total of 2,342 missions and assisted 3,160 patients by mid-June 1974.

The agency was drafting a new pedestrian/bicycle safety standard for issuance in fiscal 1975 and encouraged the states to adopt helmet safety laws to improve protection for motorcyclists. NHTSA supports driver education and driver licensing programs in the States.

The agency publishes a monthly Defect Investigatory Report to inform the news media and consumers of defect investigations and actions taken. The report lists all investigations opened, terminated, and carried forward during the preceding month. As part of its effort to serve as an advocate for consumers, the agency established new hearing procedures on defect determination cases to give citizens a chance to be heard before decisions have been made.



## URBAN MASS TRANSPORTATION ADMINISTRATION

Fiscal year 1974 was a year of reorganization, review, and accomplishment for the Urban Mass Transportation Administration (UMTA). Transit ridership gains of FY 1973 were continued. The energy shortage intensified Federal, State, and local commitments to mass transit. The Federal-Aid Highway Act of 1973, opening up highway funds for mass transit, was a most significant development.

The law expanded UMTA's contract authority for the capital grant program by \$3 billion. It also expanded the choices available to State and local agencies in the shaping of transportation systems.

For the first time, highway trust funds were made available, at local option, for use in mass transit projects. For example, urban system highway funds can now be used to construct fringe and corridor parking facilities, bus shelters and loading areas, and exclusive or preferential busways. Furthermore, the urban system funds can be used to purchase buses and rolling stock for rail transit systems. Another provision of the Act permits the substitution of transit projects for proposed Interstate highway segments, if the segments are withdrawn from the Interstate System.

As a result of the Federal-Aid Highway Act of 1973, four urban areas—Boston, New York, Philadelphia, and East St. Louis, Illinois—elected to use \$95.6 million in urban system highway funds and Interstate highway substitution funds for mass transit projects.

In addition to authorizing changes in the use of highway funds, the 1973 Act amended the Urban Mass Transportation Act and increased the Federal share of transit projects from 66 $\frac{2}{3}$  percent to 80 percent. The Act also broadened the eligibility standards for UMTA capital assistance grants to include non-profit organizations sponsoring transit projects for the elderly and handicapped.

Through UMTA, the Federal government can underwrite much of the cost of local capital improvements, including the purchase of buses and rail transit cars and the construction or modernization of transit systems and commuter rail lines. In addition to capital improvement grants, UMTA makes grants for technical studies relating to the management, operation, capital requirements, and economic feasibility of mass transit systems. It also conducts extensive research and development programs which include

testing and examining new techniques, methods, systems, and equipment for improved transportation planning and operations.

Operating with a budget of \$984.4 million in FY 1974, UMTA made 172 capital grants totaling \$870.3 million and \$37.6 million in technical studies grants. Work was begun or continued on items such as computerized techniques for transit planning, prototype bus and rail vehicles, and advanced, automated transit systems.

### Capital Assistance Grants

Some 147 grants (\$374.9 million) were made to bus systems to facilitate the purchase of 5,378 buses and the construction and improvement of bus garages, maintenance and office facilities. Some of the major capital grants were:

*San Francisco.* A \$20.5 million grant was made to assist San Francisco in the purchase of 105 buses, 135 electric trolley coaches, motor coach noise suppressors for 400 buses, and bus scheduling computer software.

*Phoenix.* Phoenix was awarded more than \$5 million to purchase 48 buses and 70 passenger shelters and related equipment.

*Los Angeles.* A grant of \$28.9 million





was made to Los Angeles to help finance 300 new buses, the rehabilitation of 19 minibuses, and several construction projects.

**Akron.** Akron received \$1.4 million to assist in the purchase of 30 new buses and 70 new fareboxes. In addition, 2,000 bus stop signs will be purchased and installed, and garage, storage, and office facilities will be renovated.

UMTA helped 25 cities acquire privately owned bus systems in order to continue service. This brings the number of urban areas receiving financial aid for transit system acquisition to nearly 100.

Rail projects received 53 percent (\$463.8 million) of the UMTA capital grant funds. The largest commitment was for the construction of new rapid transit facilities in Atlanta (\$50.4 million) and Baltimore (\$50.1 million) and for major subway expansion in New York City (\$50 million). UMTA funded the purchase of 100 additional rapid transit cars for Chicago and 100 rail transit cars for the San Francisco Bay Area Rapid Transit system. The upgrading of equipment in Philadelphia, New York City, and Chicago was also partially funded by UMTA.

Other recipients of grants for rail projects included:

**New York.** The Metropolitan Transportation Authority of New York was awarded \$42.5 million to assist in the extension of the Long Island Railroad to mid-town Manhattan.

**New Haven.** A \$49.6 million grant was awarded to the Connecticut State Department of Transportation to help buy 100 new electric commuter rail cars for service on the New Haven-New York line.

**Suburban Chicago.** A \$4.3 million grant was made to the North Suburban Mass Transit District, Skokie, Illinois, to aid in the purchase of two new diesel locomotives and five bi-level rail coaches to improve service to Chicago's northern suburbs. The funds were used to improve service of the Chicago, Milwaukee, St. Paul, and Pacific Railroad (Milwaukee Road). Six stations were to be replaced and a centralized train control signaling system was to be installed.

Light rail systems also received UMTA assistance. Boston received a grant to expand its light rail fleet with 25 more cars while San Francisco was awarded funds to add 20 new light rail cars.

Other significant projects included:

- A grant to New Orleans to assist in the purchase of new ferry boats and the construction of park and ride facilities.

- Funds to purchase a new 6,000-passenger Staten Island ferry boat were awarded to the New York City Transportation Administration.

- A grant to assist in the purchase of new cars for the Monongahela Incline was awarded to Pittsburgh.

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**"Fiscal year 1974 was a year of . . . accomplishment for the Urban Mass Transportation Administration. . . . For the first time, highway trust funds were made available, at local option, for use in mass transit projects. . . . Another provision of the Act permits the substitution of transit projects for proposed Interstate highway segments, if the segments are withdrawn from the Interstate System."**

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### Transit Planning

The Office of Transit Planning provided \$37.6 million to 38 States and 120 metropolitan areas as they implemented procedures for more effective control of technical studies grants. These funds covered three major categories: metropolitan unified work programs, State programs, and special studies.

An informal apportionment of planning funds was implemented in FY 1974. The apportionment to urban areas was based on population and the level of planning activity or demonstrated need. The apportionment to the States was based solely on urban area population.

Funds apportioned to urban areas were made available to support unified work program proposals through FY 1975. This enabled more effective coordination with the Federal Highway Administration in the delivery of funds to local areas. The States were awarded \$2.8 million, with the specific suggestion that a major portion of the funds be used to assess the transportation needs of the elderly and handicapped and to coordinate requests by non-profit organizations for grants to purchase equipment for this use.

These funds are also used to support the National Transportation Study and to provide technical planning expertise for small communities.

A total of \$7.5 million was made available for service and methods demonstration projects. Of this, \$5.2 million was used for demonstrations to deal with reducing the travel time for transit users. The remaining \$2.3 million was used for projects to improve the mobility of special user groups, such as the elderly, handicapped, young, poor, and unemployed.

### Research and Development

The first major effort in 15 years to redesign the conventional 40-foot urban bus, the Transbus development program, was marked by delivery of nine prototype vehicles to a test track for evaluation.

The agency started several other bus-related projects including electronic signal controls giving buses priority over other traffic and an automated monitoring system to improve adherence to schedules.

In response to the need for an efficient low emission vehicle for use as a taxicab, UMTA drew up a proposal to design a five-passenger vehicle which could also accommodate one wheelchair passenger and two regular passengers. The vehicle would be highly maneuverable, with acceleration from 0-45 miles per hour in 11 seconds, and would meet the 1977 Low Emission Vehicle Standards.

The era of safe, comfortable, and quiet rapid transit cars moved one step closer with the delivery of two "state-of-the-art" Cars (SOAC) to the Department's test facility in Pueblo, Colorado. After extensive testing, the cars were introduced into New York City's subway system for testing in actual service.

Looking ahead to future rail transit needs, UMTA began the development of the Advanced Concept Train (ACT). The ACT design includes such innovations as a propulsion energy storage system, monomotor trucks, improved suspension, an aluminum frame, acrylic car body, and modular interior compartments.

The installation and testing of the first Personal Rapid Transit (PRT) system in an urban area continued in Morgantown, West Virginia. Guideway construction was completed during the fiscal year and vehicles were under production in preparation for a total



system test in FY 1975. Plans were made for a one mile prototype PRT system in Colorado.

UMTA played a major role in transforming demand-responsive service (Dial-A-Ride) from a theoretical concept to a working reality. The Dial-A-Ride concept was developed as a transit alternative for the elderly and the handicapped and others unlikely to use mass transit in its present form because of its inaccessibility. It employs buses dispatched according to telephone requests from individuals needing transportation. The Dial-A-Ride project in Haddonfield, New Jersey, began using computer dispatching and expanded its fleet size and service area. The success of this program was reflected in the 75 percent patronage increases between January 1973 and January 1974.

Research and development efforts also contributed to improving transit accessibility for elderly and handicapped travelers. For example, all

Transbus prototypes have low floors to permit easier access. In addition, each prototype manufacturer was required to incorporate devices such as ramps or lifts for wheelchair passengers. The SOAC, ACT, and Morgantown PRT vehicles also have low platforms and handrails. Strict accessibility specifications have been established for vehicles under development.

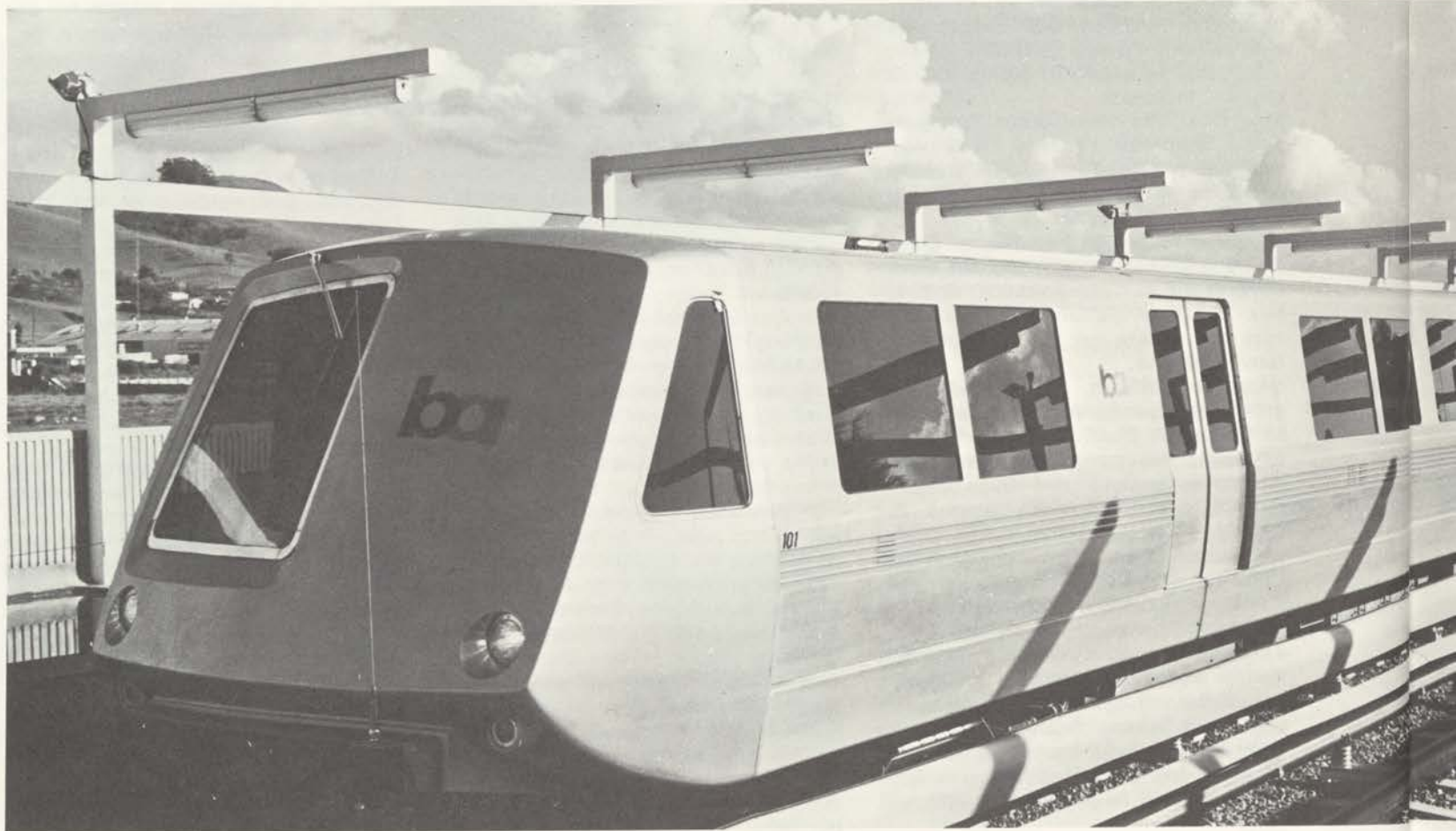
The agency creates computer systems to help State and local agencies plan and run transit programs. In fiscal 1974, it produced a prototype strategic planning model that enables a transit agency to make a rapid cost-effective study of future transportation alternatives. This effort was carried out under the Urban Transportation Planning System program which aims to develop computer-based techniques for multi-modal transport planning. This project also produced a highway system analysis program, a multi-modal demand model, and improved systems to evalu-

ate level of service, system cost, air pollution, energy consumption, and safety factors. More than 130 state and local groups are using UTPS systems for evaluation of transport plans.

### Transit Management

The Office of Transit Management launched a major effort to identify and analyze the problems associated with transit management. The establishment of effective channels between UMTA and the transit community has facilitated the exchange of information and ideas on the development of new programs and has provided for an evaluation of UMTA activities based on industry feedback.

Developmental work was completed for the Service, Inventory, and Maintenance Systems (SIMS). SIMS is a set of computer programs that will supply bus transit management with information relating to daily vehicle servicing, control of parts inventory,





... the Federal government can  
underwrite the purchase of buses ...  
... and rail transit cars ...



and periodic inspection and maintenance of vehicles. Regional seminars were conducted to inform the industry about the SIMS.

Another set of computer programs, Run Cutting and Vehicle Scheduling (RUCUS), was completed, and its application approved. RUCUS is a set of programs that automate the functions which are typically performed in a bus transit system's scheduling department.

### Civil Rights

The Office of Civil Rights was reorganized to permit a review of grants before they are made. The change gives applicants a clearer knowledge of civil rights requirements before the awarding of grants. This assisted recipients in planning and making necessary changes, and resulted in a reduction of misunderstandings and findings of noncompliance. The office continued to conduct post-grant reviews to measure the recipients' compliance.

### Reorganization

Since its creation in 1964, UMTA's budget authority has kept pace with the increases in demands for funds. However, FY 1974 forecasts of demand indicated that future funds would no longer accommodate all of the potentially eligible applications. The increased demand stems primarily from: 1) the growing emphasis on transit development as a solution to major urban problems—pollution, congestion, and energy consumption; 2) the new higher Federal funding ratio established by the highway legislation; and 3) the increasing demands for the upgrading of existing systems and the construction of new systems.

The Administrator reorganized UMTA to enable it to meet these needs and to deal more effectively with national transit problems. In 1973, UMTA's organizational structure was essentially the same as it had been in 1968 when it had only 50 employees and a budget of \$175 million. To improve the management of rapidly expanding programs, several important changes were made.

The Office of Program Operations, which had direct control of over 90 percent of UMTA projects, was separated into the Office of Transit Planning and the Office of Capital Assistance. The Office of Transit Planning assumed responsibility for the

technical studies grants, portions of the demonstration programs, and the service development programs. The Office of Capital Assistance remained responsible for administering the capital grant program.

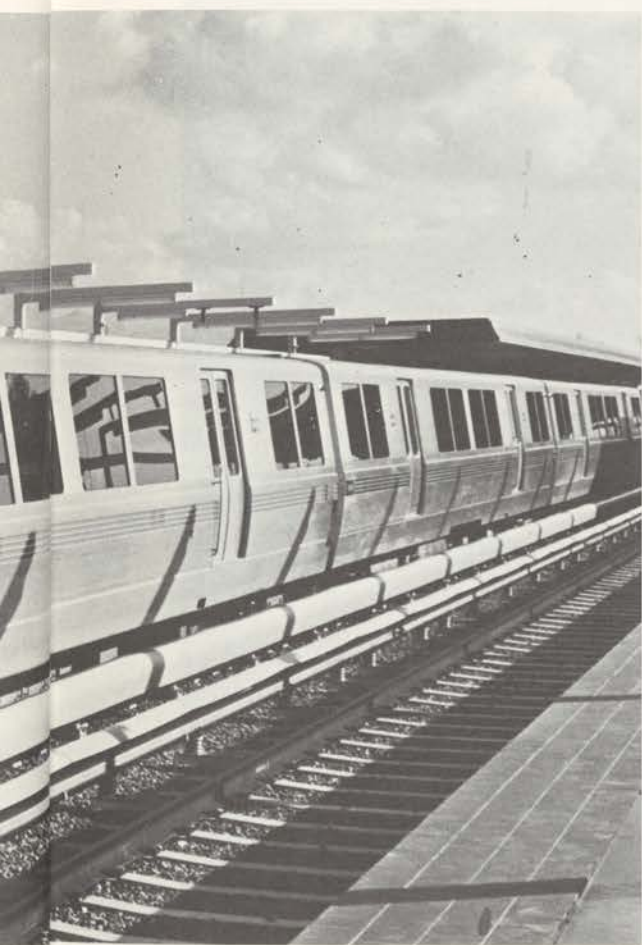
To help ensure the efficient use of Federal funds, the Administrator created an Office of Transit Management to assist transit operators in organizing, controlling, and marketing their operations.

### Program Review

The growing gap between demand for and availability of funds is largely concentrated in the capital assistance program. Although the number of applicants for capital grants has not increased dramatically, the average cost of each project has soared. It became apparent during FY 1974 that future budget authorizations would not accommodate all the applications. Since the largest portion of the fund requests were from cities expanding or constructing fixed rail systems, a review was initiated to develop criteria for estimating the effectiveness of fixed guideway projects.

A report was presented to the Secretary recommending that applicants for new fixed guideway projects be required to identify the full range of transit alternatives and evaluate each in terms of performance and cost. The report also recommended that the level of Federal participation be based on the most cost-effective alternative, regardless of the mode actually chosen by the applicant. The city would be awarded capital funds based on the projected cost of the most cost-effective alternative, but it could use the Federal funds for the system of its choice, with the remainder of the funds raised locally.

Legislation aimed at alleviating the uncertainty of year-to-year Federal funding was submitted to Congress in February 1974. In addition to funding over a six-year period, the proposed legislation provided for the allocation of funds to the States to be used, at local option, for either capital or operating expenses. These provisions would enable State and local authorities to develop balanced transportation systems, without the funding restrictions which have tended to bias local decisions toward high-capital projects. The proposal was under consideration in the Congress at the close of the fiscal year.





## ST. LAWRENCE SEAWAY DEVELOPMENT CORPORATION

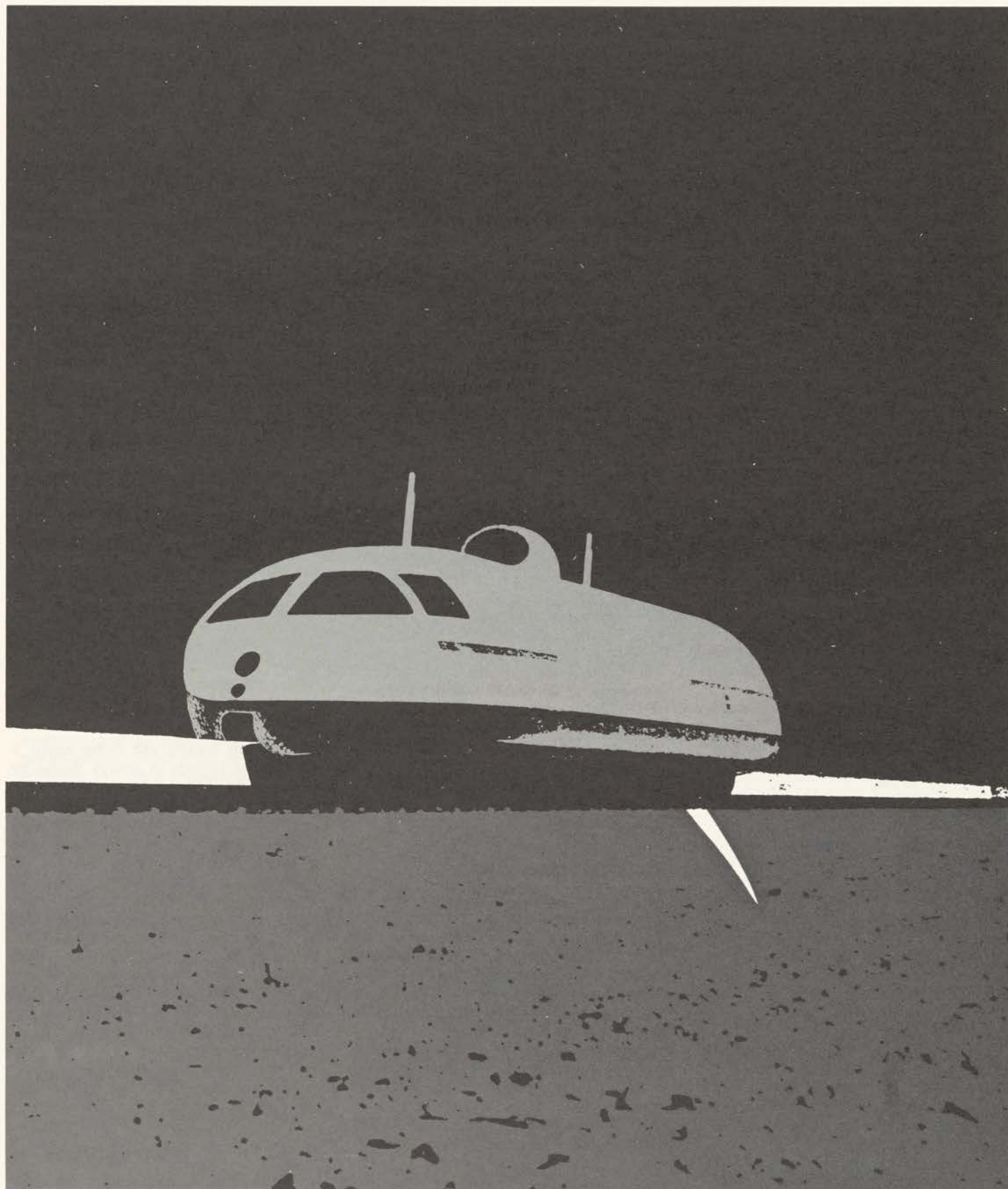
The St. Lawrence Seaway Development Corporation, which is an Administration within the Department of Transportation, is a self-sustaining government-owned business. The activities of the Corporation are financed by tolls and other charges assessed for the use of the Eisenhower and Snell locks, which are managed by the Corporation. The St. Lawrence Seaway Development Corporation operates on a calendar year basis and submits a separate annual report to Congress.



... the Eisenhower lock ...



## PART III APPENDIX





## MAJOR STATEMENTS IN FISCAL YEAR 1974

### On National Transportation Policy

The overriding thrust of Federal policy is to see that the Nation has an overall transportation system that reasonably meets its essential needs. To the maximum feasible extent, this system should provide transportation that is efficient, safe, fast, convenient, and limits negative impacts on the environment. While it will never do that to the satisfaction of all, the system should be able to meet this broad objective within reasonable limits.

The Nation's transportation system should, as much as possible, be provided through the competitive forces of the private sector, or, if the private sector is inappropriate, by State and local governments. Direct Federal financing of transportation investments or operations should be limited to those few cases where there is a clear and widely-accepted requirement for concerted action in an area of high national priority and where the private sector of State and local governments are obviously incapable of adequately meeting this requirement. The Federal government should ensure that, where privately-operated transportation services essential to the national well-being are being threatened by financial or other problems, timely action is taken to solve those problems so as to preclude the need for Federal takeover or "nationalization."

—*Claude S. Brinegar, Secretary of Transportation, before the House Appropriations Subcommittee on Transportation, March 5, 1974.*

### On Railroad Reorganization

As our needs for transportation grow, as they surely will, we are going to need the carrying capacities, the energy efficiencies, and the long-haul economics the railroads provide. I am confident that once we lift the burdens of regulatory drag, inadequate returns, and operational inertia, the danger of future rail bankruptcies will be lessened and the prospects for better service improved. Hopefully, we have learned from the miseries of the Penn Central problem the high risks and high costs of allowing our railroads to run down hill. By taking preventive action now, I believe we can avoid these risks and costs elsewhere.

—*Secretary Brinegar, to the National Transportation Institute, January 30, 1974.*

### On Regional Rail Reorganization Act

It is my hope that this Act marks the beginning of a rail "turnaround"—the beginning of a new era of growth for this vital link in our National transportation system. I wish to stress that I view this Act not as a step toward nationalization, with all its evils, but rather a step away from it. The procedures provided in this Act will, in time, *strengthen* the private sector role of the Nation's rail freight system.

Without such strengthening we could well find ourselves driven toward Federal ownership as a last-ditch way of preserving essential operations. This Act gives us a far better option.

—*Secretary Brinegar at press briefing on the Regional Rail Reorganization Act, January 2, 1974.*

### On Balanced Transportation

More and more, it's becoming clear that our long-term concentration on highways and automobiles—to the point where we now have 3.4 million miles of the former and 100 million plus of the latter—is no longer appropriate. Highway growth properly served to tie the country together over the past 30-40 years and the automobile industry has, of course, provided a vital underpinning to our economy. However, I believe that the priority demands of the 1970's and 1980's—led by problems of urban congestion, air pollution, and an energy shortage—now give us little option but to shift our direction.

—*Secretary Brinegar, to the National Defense Transportation Association, September 26, 1973.*

### On Urban Transportation

The major obstacles to improving urban transportation are more human than technical. We are especially concerned about: (a) the lack of comprehensive local planning that is broad enough to embrace the entire spectrum of urban issues; (b) the lack of a public decision-making mechanism to solve local problems; and (c) the lack of comprehensive management of the transportation system of each urban area.

—*Secretary Brinegar, to Scientific American Energy Conservation in Transportation Roundtable Conference, March 17, 1974.*

### On Public Transportation

The commitment to the resurrection and renewal of public transit has yielded a most significant milestone in this, the fourth year of that commitment. The annual decline in total U.S. transit ridership has stopped, and, for the first time since the end of World War II, the trend is moving upwards.

—*Secretary Brinegar, to the American Transit Association, October 15, 1973.*

### On Safety Belts

The arguments against safety belts are weak. By turning from the negative to the positive aspects of the issue, we have a chance to achieve in this country what Australia already has demonstrated—an increase in safety belt usage to an estimated 80 percent and a decline in traffic deaths of at least 20 percent.

I urge speedy enactment of safety belt usage laws in those States where such laws are pending and prompt introduction of similar bills in the other State legislatures. By giving legal status to our confidence in the efficiency of protective restraint systems, we can make the safety belt the most popular put-on in America.

—*Secretary Brinegar, to the National Safety Belt Usage Conference, November 28, 1973.*

### On Saving Energy

The Nation clearly can bring about a substantial savings in energy usage by revising its transportation habits. A greater use of mass transit and carpooling can produce sizable savings. Our analysis of the relative efficiencies of the private and public transportation modes shows that the average automobile delivers about 30 passenger miles per gallon and considerably less under conditions of urban congestion. A transit bus, on the other hand, can deliver over 100 passenger miles per gallon of fuel. Even a moderate shift from travel by car to travel by bus can produce significant oil savings.

—*Secretary Brinegar, to the American Association of State Highway Officials, November 12, 1973.*

### On Alcoholism Countermeasures

We know that alcoholism on the highways will not respond just to enforce-



... privately operated transportation services essential to the national well-being ...



ment, or just to education, or just to social action. Alcoholism is a complex problem and only a balanced program of careful diagnosis, strict enforcement, prudent adjudication, professional rehabilitation, and constant alertness by all the agencies involved can bring the progress we so much want and need. We are confident that alcohol countermeasures can be effective. But they will save lives only if they are applied, which means that State and community leaders must be equally convinced of their value. Alcohol-related traffic deaths will fall only if State and local safety initiatives make them fall.

—Secretary Brinegar, to the National Conference of Governor's Highway Safety Representatives, September 24, 1973.

#### On Cargo Security

Well-designed and managed security efforts can pay for themselves and add

to profits. But the Federal arm is neither long enough nor clever enough to reach out from Washington to police the movement of goods every step of the way from origin to destination. That is not the Federal role. We will continue to be involved, but we will look increasingly to the carriers, wholesalers, and warehousemen to adopt proven procedures for the protection of the merchandise entrusted to them.

—Secretary Brinegar, to the National Cargo Security Conference, September 6, 1973.

#### On Traffic Congestion

Our excessive dependence on the automobile was threatening to overwhelm us. Downtown traffic congestion was destroying the inner city. Our health was threatened by auto-engendered air pollution and the financial and human losses from highway accidents was becoming a national scandal. That is why we in the Federal govern-

ment have been busily at work promoting public alternatives to private transportation. We want to see public transit and railroads prosper.

—Under Secretary of Transportation John W. Barnum, at groundbreaking ceremonies for a new railroad station, Bridgeport, Connecticut, February 26, 1974.

#### On the Electric Car

The ideal electric-powered car obviously is still some distance from reality, but the target is certainly attractive enough to warrant our continued funding of exploratory research and development work, both on high performance batteries and in the examination of other potentials. Our funds for these purposes are not extensive at the moment, but we will be responsive to any demonstration by the industry of a real breakthrough in electric propulsion. We do not intend to lose sight of long-



term solutions merely because of the severity of the immediate problem.

—*Under Secretary Barnum, before the Third International Electric Vehicle Symposium, February 20, 1974.*

### On Carpooling

We in the Department are now at work on a national program to promote the growth of carpools. Carpools are not the final or complete answer but they offer the quickest way to achieve substantial fuel savings. The average occupancy rate of automobiles used in all work trips is now 1.25 passengers per vehicle. If we could raise that figure to 2.5 through carpooling, the savings would amount to 6 billion gallons a year. It is worth noting that present carpooling efforts are already resulting in the saving of 1.7 billion gallons a year.

—*Under Secretary Barnum, before the Highway Research Board, January 23, 1974.*

### On Bicycling

The bicycle is a welcome addition to the Nation's transportation resources. Its safety aspects, particularly in the urban traffic picture, are worrisome but not beyond improvement. As an adjunct to conventional means of commuter travel, the bicycle has significant potentials.

Since its introduction nearly a century ago, the bicycle's fortunes have waxed and waned. But I am convinced that the bicycle's surge in popularity in recent years is not a momentary fancy or a passing fad. The forces that have created a high demand for bicycle mobility will not disappear quickly or easily. We are committed to a country of cleaner air and to a policy of energy conservation.

—*Under Secretary Barnum, to the Bicycle Institute of America, February 5, 1974.*

### On Oil Spills

The increased supplies of fuel that we will require will result in a rapid growth in tanker traffic and a steady increase in the size of the tankers involved. Both of these factors, greater numbers and increased volume, increase the potential threat of massive environmental damage. Analyzing statistics on tanker collisions worldwide, we found that over a ten year period there were

500 collisions, 80 percent of which occurred while entering or leaving a harbor. Anticipating these conditions the Ports and Waterways Safety Act of 1972 provided for the establishment of vessel traffic systems in congested areas. . . . Acting under this authority we have established vessel traffic systems in San Francisco and Puget Sound. A third system is under construction at the Houston-Galveston Channel. Other ports are being studied and where circumstances justify, we will recommend an appropriate vessel traffic system. . . . Our aim is to reduce the probability of ship collisions

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**"Hopefully, we have learned from the miseries of the Penn Central problem the high risks and high costs of allowing our railroads to run down hill. By taking preventive action now, I believe we can avoid these risks and costs elsewhere."**

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or groundings with the resulting damage to the environment that is likely in such incidents. . . . Also, we expect that vessel traffic systems will expedite ship movements. Often ships may be able to arrive or depart even under adverse weather conditions because we will be able to furnish the traffic information they need to navigate safely.

Coast Guard statistics indicate that some 65 percent of the pollution incidents relating to tankers are caused by collisions, groundings or rammings. Vessel traffic systems should materially reduce this source of damage to the marine environment.

—*Admiral C. R. Bender, Commandant, U.S. Coast Guard, to Navy League/World Affairs Council, Portland, Oregon, August 30, 1973.*

### On Aircraft Noise

Legislation in 1968 first gave the Federal Aviation Administration specific authority to control aircraft noise. Our regulatory actions have prevented the escalation of noise. Indeed, the noise levels of new aircraft have been reduced substantially. Furthermore, FAA regulatory actions will set noise standards for other aircraft types and classes and we plan to make noise

standards for a future generation of transport aircraft even more stringent.

The FAA is exercising a leadership role in aircraft noise abatement. We shall continue to do so until the problem is solved and aircraft-generated noise is reduced to thoroughly acceptable levels.

—*Alexander P. Butterfield, Administrator, Federal Aviation Administration, to the Committee for National Airport, Arlington, Virginia, February 13, 1974.*

### On Skyjacking

It has now been almost a year since we ordered airline passengers to undergo a metal detector test and to have their hand luggage inspected. In that time, there has not even been an attempt against a specific aircraft. The skyjack ratio for the U.S. stands at zero.

—*Benjamin O. Davis Jr., Assistant Secretary of Transportation for Environment, Safety and Consumer Affairs, to Florida Public Relations Association, St. Petersburg, Florida, December 7, 1973.*

### On the Highway Program

Change has been coming with increasing rapidity to the highway program. More changes can be anticipated. For example, we expect that the Federal Highway Administration is going to gradually evolve from being primarily an engineering organization to one that is concerned with the management of our transportation network, including, in cooperation with UMTA, mass transit in our urban areas. Building new freeways is no solution in itself unless we know how to manage the traffic that uses them, so that we can prevent traffic congestion and accidents. In other words, we must know how to most efficiently manage the facilities we have.

—*Norbert T. Tiemann, Administrator, Federal Highway Administration, to the Western Association of State Highway Officials, Portland, Oregon, June 4, 1974.*

### On the Federal Role

The Federal government has a stake in the future of our cities. Therefore I strongly believe that the Federal gov-



ernment has an aggressive role to play in helping cities solve their urban transportation problems. The Federal government, however, cannot do it all—it must be a partnership relationship. The Federal government should provide financial assistance to the cities and provide assistance in a manner that does not bias transporta-

tion choices. The amount of Federal resources that can be devoted to urban transportation is a matter for debate and must be examined in the context of the total Federal budget. But, I feel that urban transportation should be considered a priority, and that the Federal government should participate to the prudent limit.

—*Frank C. Herringer, Administrator, Urban Mass Transportation Administration, before the American Road Builders Association, Las Vegas, Nevada, March 27, 1974.*

### On Rail Regulation

It is strange, indeed, that our basic regulatory policy towards the railroad industry has changed very little since 1887 when the Interstate Commerce

Act was adopted and the Interstate Commerce Commission formed. In the intervening period, the competitive position of the railroad industry has changed dramatically with the rise of alternative modes of transportation—pipelines, trucks, barges, and air. Whatever monopoly position railroads may have enjoyed in 1887, today railroads face intense competition from other modes of transportation. Basic competitive conditions in transportation have changed dramatically, but Federal policy towards the railroad industry has not.

—*Robert Henri Binder, Assistant Secretary for Policy, Plans and International Affairs, before the Pittsburgh Chapter, National Defense Transportation Association, Pittsburgh, Pennsylvania, March 18, 1974.*

... our long-term concentration on highways and automobiles ...





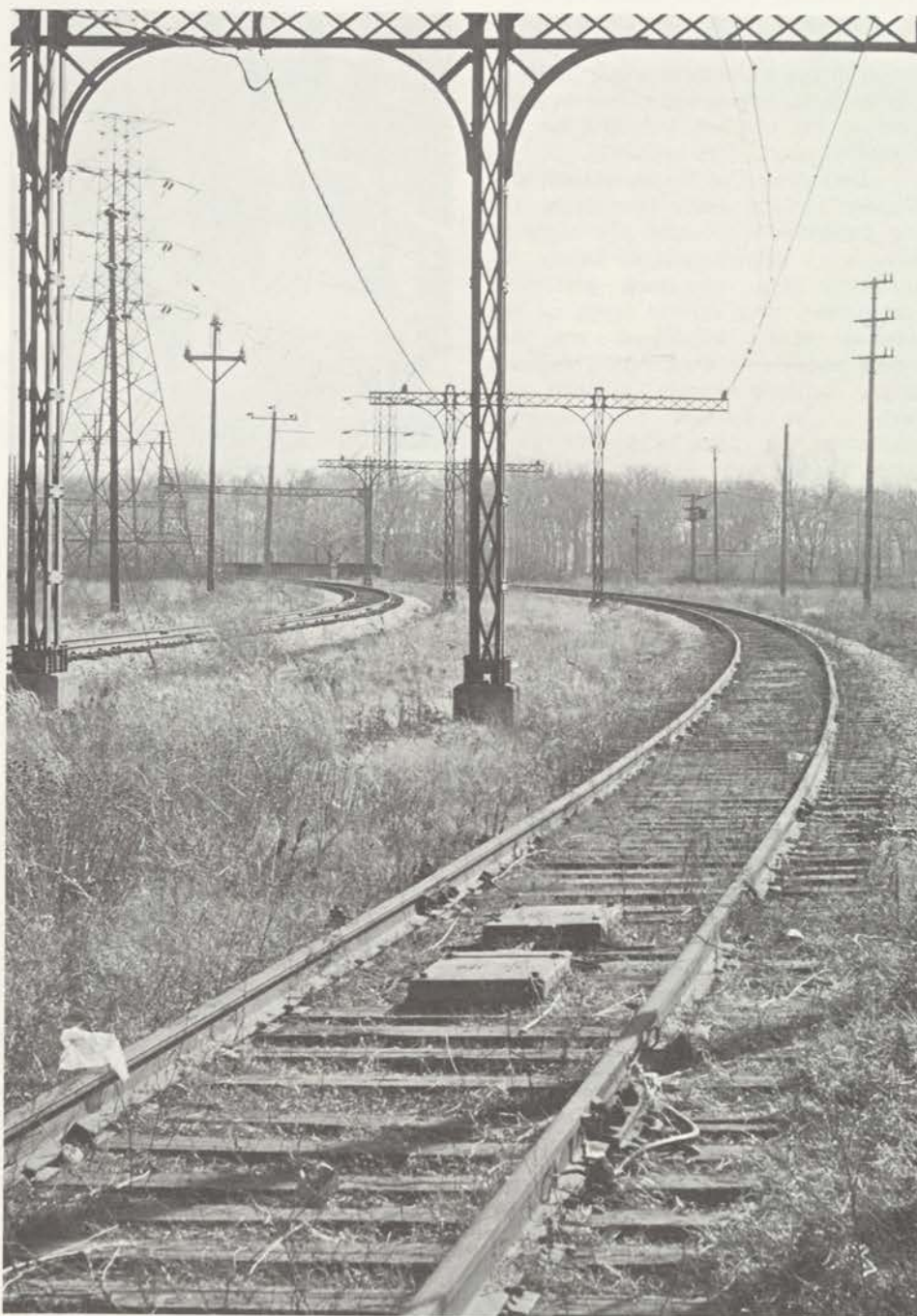
## CHRONOLOGY OF MAJOR EVENTS IN FISCAL YEAR 1974

- August 3 The Department of Transportation awards contract for first federally funded pilot demonstration of diagnostic auto inspection for safety and emission control.
- August 3 The Department of Transportation announces new policy to permit States to use Federal-Aid Highway money to provide special housing for persons whose homes are displaced by Federal-Aid Highway projects and cannot find housing.
- August 13 President Nixon signs into law new Federal-Aid Highway Act of 1973.
- September 1 New 1974 autos have stronger bumpers, stronger doors and improved lap and shoulder belts.
- September 7 The Federal Aviation Administration issues first edition of National Airport System Plan.
- October 16 The Federal Aviation Administration proposes new noise standards for small, propeller-driven aircraft.
- October 22 The Federal Highway Administration estimates 1973 motor fuel consumption will exceed 115 billion gallons—up 6 percent over 1972.
- October 24 The Federal Aviation Administration orders 101 instrument landing systems for installation at airports throughout the country.
- November 7 Study shows late-model automobiles driven at 70 mph consume 30.5 percent more gasoline than at 50 mph.
- November 12 New Office of Transportation Energy Policy is created to coordinate Department's energy conservation efforts.
- November 17 New U.S. Coast Guard icebreaker, Polar Star, is launched.
- November 20 The Federal Aviation Administration announces seven-point plan for conserving jet aircraft fuel.
- November 28 The Department of Transportation sponsors a three-day national conference to emphasize need for States to enact safety belt usage laws.
- December 10 Highway construction costs in third quarter of 1973 show 6.3 percent increase over previous quarter.
- January 5 U.S. Coast Guard's Marine Environmental School is opened.
- January 6 Clocks are set ahead to introduce daylight saving time on a year-round basis.
- January 7 Highway traffic decreases nationwide by nearly 14 percent following the President's request that service stations close on Sundays.
- January 28 Figures from 50 States show a reduction of almost 23 percent in the number of highway fatalities for January 1974, compared with the same month in 1973.
- February 1 United States Railway Association is incorporated.
- February 1 Secretary Brinegar releases his recommendations for revitalizing the bankrupt Northeast railroads.
- February 7 Shipping operations end in the Great Lakes—seven weeks later than the normal December 15 closing date.
- February 16 Federal Highway Administration approves carpool demonstration projects for Portland, Oregon; and Dallas and Fort Worth, Texas.
- February 28 Reports from 17 states indicate gasoline sales for February 1974 dropped 8 percent below the same month in 1973.
- February 28 Total highway fatalities in February are 774 below the same month in 1973.
- March 5 Secretary Brinegar delivers fundamentals of new national transportation policy to Congress.
- March 25 The Department of Transportation releases new guidelines authorizing for the first time expenditure of Federal Aid Highway funds for the construction of bike-ways and sidewalks outside the normal right-of-way along Federal Aid highways.



- April 5 All States are in compliance with new national 55 mph speed limit.
- May 21 Highway construction costs in first quarter of 1974 increase nearly 12 percent over the previous quarter.
- May 31 Admiral O. W. Siler is sworn in as 15th Commandant of the U.S. Coast Guard.
- June 12 The Department of Transportation proposes criteria and procedures for motor vehicle emission inspections.
- June 25 The Department of Transportation releases action plan to help financially pressed Pan American World Airways and Trans World Airlines.

... February 1—Secretary Brinegar releases his recommendations for revitalizing the bankrupt Northeast railroads ...





## HISTORICAL BACKGROUND

The founding of the U.S. Department of Transportation in April of 1967 brought together some 30 Federal transportation bureaus and offices.

The mission of the new Department was, and is, to foster and promote the various modes of transportation and to regulate them for safety's sake. In day-to-day operations, it administers the construction of the Nation's Interstate Highway System; it operates and staffs the air traffic control systems as well as the St. Lawrence Seaway and the Alaska Railroad. At the same time, the Department's United States Coast Guard ensures safety at sea while other modal specialists work for increased safety in aviation, in the pipeline industry, on the highway, and on the railroads.

Department of Transportation employees include many specialists. On the Department's roster are highway designers, aircraft pilots, safety inspectors, radar operators, electronic technicians, and various types of engineers. Many employees are stationed outside of Washington working at the Nation's airports, at ports and harbors, at aircraft manufacturing plants, at the locks of the St. Lawrence Seaway, and at the Transportation Test Center in Pueblo, Colorado.

Several dozen laws govern the Department and its program. Some laws set policy through the economic regulation of various transportation modes. The Interstate Commerce Act is one example.

The act establishing the Department (Public Law 89-670), signed into law on October 15, 1966, gave the Department its original direction by delineation of purposes and responsibilities. But subsequent legislation, much of it enacted in 1970, has more firmly shaped programs of transportation investment and operation.

The 1970 legislation included an innovative Federal-Aid Highway Act, the Urban Mass Transportation Assistance Act, the Rail Passenger Service Act, and the Airport and Airways Development Act.

The 1970 Highway Act established the Federal-Aid Urban System and authorized the use of highway money for such projects as exclusive or preferential bus lanes, traffic control, and improved bus loading areas. The Federal-Aid Highway Act of 1973 added further diversification to the use of the Highway Trust Fund by permitting for the first time the use of



... from its beginning, DOT has been sensitive to the preservation of environmental quality ...

highway funds for mass transit capital expenditures.

The Mass Transportation Act of 1970 set in motion a 12-year multi-billion dollar program to improve public transportation.

The Rail Passenger Service Act of 1970 moved the greater part of the Nation's intercity rail passenger service from failing private operation to a Federally supported system under the National Rail Passenger Corporation (Amtrak).

The Airport and Airway Development and Revenue Act of 1970 expanded the Department's ability to improve and modernize the air traffic control system and to assist local airport sponsors in the financing of airport improvements. To support this effort, the Act authorized user taxes on aviation fuels, airline passengers, and air freight shippers.

From its beginning, DOT has been sensitive to the preservation of environmental quality. A mandate given

the Department by its establishing act calls for the preservation of the natural beauty of the countryside, public parks and recreation lands, wildlife and waterfowl refuges, and historical sites. Additionally, all legislation establishing modal programs specifically provides for environmental protections.

From the outset, the improvement of safety in all modes of transportation has been one of the Department's most important missions. Increased emphasis was afforded in 1970, when responsibility for department-wide safety was placed at the Secretarial level with the creation of the Office of the Assistant Secretary for Safety and Consumer Affairs. In the same year, the National Highway Traffic Safety Administration was established by elevation from a bureau in the Federal Highway Administration. In virtually every year since its inception, the Department has strengthened and broadened its safety programs.



... Department of Transportation employees include many specialists ...





**TABLE I U.S. DEPARTMENT OF TRANSPORTATION PROGRAM LEVELS, BUDGET AUTHORITY, OBLIGATIONS, AND OUTLAYS, FISCAL YEAR 1974**

Organization	Program Levels <sup>1</sup>	Budget Authority	Obligations	Outlays
Office of the Secretary.....	\$ 61.3	61.3	58.4	49.2
United States Coast Guard.....	804.4	802.4	813.9	850.5
Federal Aviation Administration.....	1,940.9	1,633.3	1,906.8	1,855.1
Federal Highway Administration.....	5,005.8 <sup>2</sup>	11,509.8 <sup>3</sup>	5,336.9 <sup>5</sup>	4,585.3
National Highway Traffic Safety Administration.....	142.6	338.3	141.2	157.2
Federal Railroad Administration.....	77.6	77.6	94.5	93.4
National Railroad Passenger Corporation (AMTRAK).....	140.0	140.0	127.5	128.6
Urban Mass Transportation Administration.....	1,080.2	3,095.3 <sup>4</sup>	1,080.2	419.0
Saint Lawrence Seaway Development Corporation.....	--	--	4.8	-2.8
Subtotals.....	9,252.9	17,658.1	9,564.3	8,135.6
Deduct: Proprietary Receipts from the Public.....	--	-31.3	--	-31.3
TOTALS.....	\$ 9,252.9	17,626.7	9,564.3	8,104.2

(dollars in millions)

<sup>1</sup> A COMBINATION OF BUDGET AUTHORITY, OBLIGATIONS AND ADMINISTRATIVE RESERVATIONS WHICH IS THE BEST BUDGETARY INDICATOR OF THE DEPARTMENT'S ACTIVITIES.

EXCLUDES \$325 MILLION OF CONSTRUCTION PROJECTS WHICH WERE APPROVED FOR THE INTERSTATE SYSTEM IN FY 1973, BUT WHICH DID NOT BECOME FEDERAL OBLIGATIONS UNTIL FY 1974 UNDER THE SECTION OF THE FEDERAL-AID HIGHWAY ACT USED TO APPROVE THE PROJECTS.

<sup>3</sup> INCLUDES TWO YEARS OF CONTRACT AUTHORITY DUE TO LATE ENACTMENT OF HIGHWAY LEGISLATION.

<sup>4</sup> AUTHORITY FOR USE IN YEAR ENACTED AND SUBSEQUENT YEARS.

<sup>5</sup> INCLUDES AN ESTIMATED \$325 MILLION FOR CERTAIN HIGHWAY PROJECTS PLANNED FOR FY 1973.

Note: Columns may not add due to rounding.

**TABLE II U.S. DEPARTMENT OF TRANSPORTATION GRANTS BY GRANT PROGRAM, FISCAL YEAR 1974**

Program	(Dollars in thousands)
Airports (Planning/Development).....	\$ 287,302
Boating Safety.....	3,509
Federal Aid Highways.....	5,318,810
Gas Pipeline Safety.....	1,175
Highway Traffic Safety.....	85,386
Railroad Safety.....	211
Urban Mass Transportation.....	869,873
TOTAL GRANT AWARDS.....	\$6,566,266

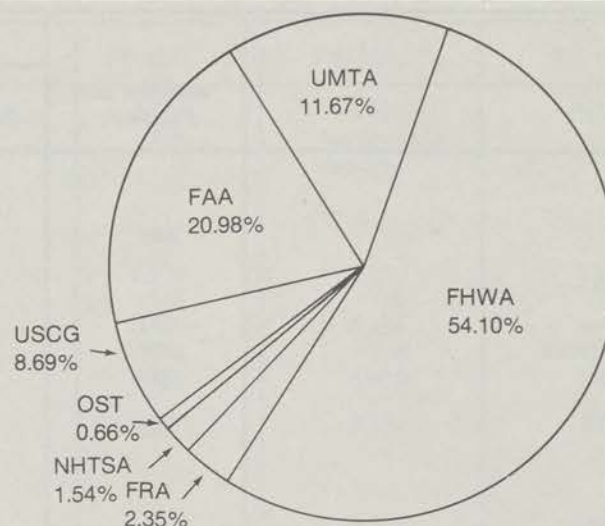
**TABLE III U.S. DEPARTMENT OF TRANSPORTATION AUTHORIZED FULL-TIME PERMANENT POSITIONS, FISCAL YEAR 1974**

Office of the Secretary.....	2,141
United States Coast Guard <sup>1</sup> .....	44,120
Federal Aviation Administration.....	56,486
Federal Highway Administration.....	5,006
National Highway Traffic Safety Administration.....	881
Federal Railroad Administration.....	1,387
Urban Mass Transportation Administration.....	361
Saint Lawrence Seaway Development Corporation.....	193
TOTAL.....	110,575

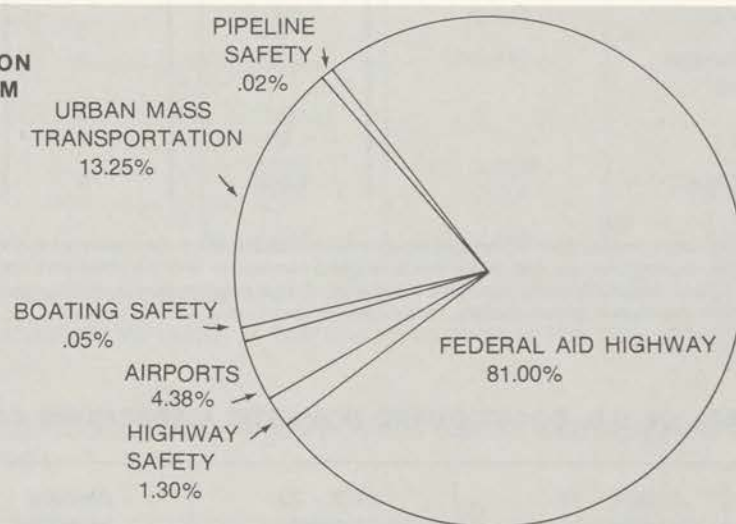
<sup>1</sup>INCLUDES 6,520 CIVILIAN AND 37,600 MILITARY.



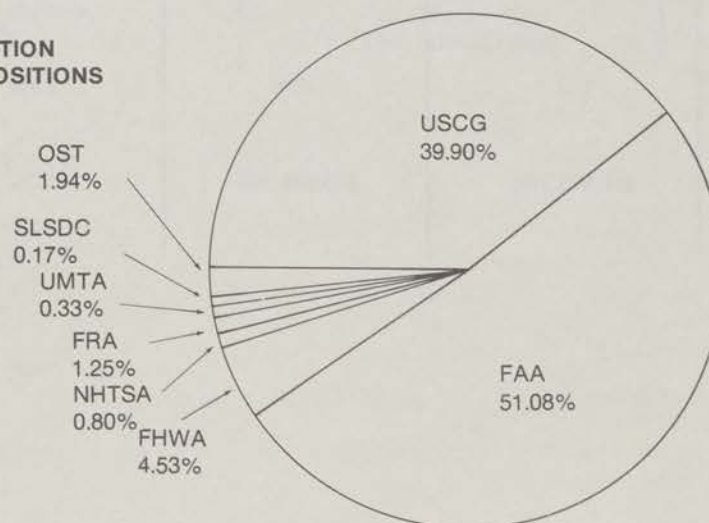
**FIGURE 1**  
U.S. DEPARTMENT OF TRANSPORTATION  
PROGRAM LEVELS  
FISCAL YEAR 1974



**FIGURE 2**  
U.S. DEPARTMENT OF TRANSPORTATION  
GRANT AWARDS BY GRANT PROGRAM  
FISCAL YEAR 1974



**FIGURE 3**  
U.S. DEPARTMENT OF TRANSPORTATION  
AUTHORIZED FULL-TIME PERMANENT POSITIONS  
FISCAL YEAR 1974





**TABLE IV SUMMARY OF REPORTED GAS PIPELINE FAILURES AND CASUALTIES, CALENDAR YEAR 1973**

Type of Pipeline	Number of Failures	Number of Fatalities		Number of Injuries	
		Employees	Non Employees	Employees	Non Employees
Distribution Pipelines:					
TOTAL	893	1	32	48	285
Subtotal by cause:					
Corrosion	133	1	2	0	69
Damage by Outside Forces	602	0	16	13	133
Construction Defect or Material Failure	92	0	11	10	53
Other causes	66	0	3	25	30
Transmission Pipelines:					
TOTAL	471	1	1	2	16
Subtotal by cause:					
Corrosion	63	0	0	1	0
Damage by Outside Forces	272	0	0	0	15
Construction Defect or Material Failure	111	0	0	0	0
Other causes	25	1	1	2	1
GAS INDUSTRY TOTALS	1,364	2	33	51	301

Note: In addition to the above data compiled from written gas pipeline failure reports which were received by the Office of Pipeline Safety during 1973, there were seven fatalities and 25 injuries resulting from gas distribution incidents which occurred in 1973 but which were not reported until after December 31, 1973. Also, additional incidents reported to OPS by telephonic notice during 1973, but which did not require follow-up written reports, indicated that there were 17 additional fatalities and 47 additional injuries from distribution system failures. These casualty figures have not been verified.

**TABLE V SUMMARY OF U.S. COAST GUARD DOMESTIC ICEBREAKING OPERATIONS, 1971-1974**

	1971 - 72 Season	1972 - 73 Season	Percent Increase	1973 - 74 Season	Percent Increase
Icebreaking Operating Hours	531	1,057	99%	3,872	266%
Number of Vessel Assists	132	224	92%	423	89%
Total Value of Cargo Assisted	\$16,991,794	\$26,698,186	57%	\$45,640,302	71%



**TABLE VI SUMMARY OF U.S. COAST GUARD COMMERCIAL VESSEL SAFETY ACTIVITIES, FISCAL YEARS 1971-74**

<i>Material Safety Activities</i>	<i>FY 1971</i>	<i>FY 1972</i>	<i>FY 1973</i>	<i>FY 1974</i>
Vessels certificated.....	9,737	9,294	8,689	9,055
Vessels issued original certificates.....	536	No longer reported		
<i>Inspected Vessels by Type</i>				
Cargo and miscellaneous.....	2,075	1,917	1,519	1,656
Tank ships.....	378	113	328	402
Tank barges.....	3,129	3,156	3,659	3,689
Passenger (over 100 gross tons).....	146	136	105	137
Small passenger.....	4,009	3,672	3,078	3,171
TOTAL .....	9,737	9,294	8,689	9,055
<i>Marine Personnel Activities</i>				
Licenses issued.....	21,399	19,999	27,899 <sup>1</sup>	34,321 <sup>2</sup>
Merchant Mariner's Documents issued.....	21,343	22,831	20,162	19,211
Seamen discharged from voyage articles.....	381,293	292,876	351,813	360,718
Security checks for employment.....	23,781	13,486	12,806	15,729
TOTAL .....	447,816	349,192	412,655	429,979
<i>Casualties</i>				
Personnel Casualties.....	1,902	2,052	1,515	1,577
Vessel Casualties.....	2,575	2,002	3,104	3,388
TOTAL .....	4,477	4,654	4,619	4,965

<sup>1</sup> INCLUDES 6,367 TOWBOAT OPERATORS LICENSES ISSUED UNDER 46 CFR 10.16-71

<sup>2</sup> INCLUDES 12,560 TOWBOAT OPERATORS LICENSES ISSUED UNDER 46 CFR 10.16-71. (AUTHORITY FOR THIS "GRAND-FATHER CLAUSE" EXPIRED 30 DEC 74)

**TABLE VII U.S. COAST GUARD BRIDGE CONSTRUCTION APPROVALS UNDER SECTION FIVE OF THE INTERNATIONAL BRIDGE ACT, FISCAL YEAR 1974**

<i>Applicant</i>	<i>Type of Bridge</i>	<i>Location</i>	<i>Date Approved</i>
San Benito International Bridge Company	Dual Highway Bridge	Rio Grande River, Los Indios, Texas	17 June 1974 (P 47-74)



TABLE VIII U.S. COAST GUARD FINANCIAL STATEMENT, FISCAL YEAR 1974

<b>Appropriated Funds</b>	<b>Funds Available<sup>1</sup></b>	<b>Net Total Obligation</b>	<b>Unobligated Balances<sup>2</sup></b>
Operating Expenses.....	\$589,162,860	\$589,162,860	- - -
Acquisition, Construction, and Improvements.....	120,457,408	81,978,675	38,478,733
Alteration of Bridges.....	9,674,760	9,621,000	53,760
Retired Pay.....	86,750,000	86,339,074	410,926
Reserve Training.....	27,152,000	27,150,649	1,351
Research, Development, Test, and Evaluation.....	17,521,601	16,876,028	645,573
State Boating Safety Assistance.....	3,604,899	3,594,810	10,089
Oil Pollution Fund.....	12,785,046	4,429,964	8,355,082
<b>TOTAL APPROPRIATED FUNDS</b>	<b>\$867,108,574</b>	<b>\$819,153,060</b>	<b>\$47,955,514</b>
<b>Reimbursements</b>			
Operating Expenses.....	\$ 10,765,870	10,673,418	92,452
Acquisition, Construction, and Improvements.....	1,827,778	1,140,000	687,778
Research, Development, Test, and Evaluation.....	352,752	340,000	12,752
<b>TOTAL REIMBURSABLE FUNDS</b>	<b>\$ 12,946,400</b>	<b>\$ 12,153,418</b>	<b>\$ 792,982</b>
<b>Trust Funds</b>			
Coast Guard General Gift Fund	\$ 46,347	28,637	17,710
Surcharge Collections, Sales of Commissary Stores.....	211,283	106,388	104,895
Coast Guard Cadet Fund.....	4,197,188	4,197,188	- - -
<b>TOTAL TRUST FUNDS</b>	<b>\$ 4,454,818</b>	<b>\$ 4,332,213</b>	<b>\$ 122,605</b>
<b>Intra Governmental Revolving Funds</b>			
Coast Guard Supply Fund.....	\$ 49,425,442	\$ 49,387,602	\$ 37,840
Coast Guard Yard Fund.....	35,962,462	27,475,538	8,486,924
<b>TOTAL REVOLVING FUNDS</b>	<b>\$ 85,387,904</b>	<b>\$ 76,863,140</b>	<b>\$ 8,524,764</b>
<b>GRAND TOTAL</b>	<b>\$969,897,696</b>	<b>\$912,501,831</b>	<b>\$57,395,865</b>
<b>Accrued Gross Expenditures</b>	<b>Total Expenditures</b>	<b>Direct Expenditures</b>	<b>Reimbursable Expenditures</b>
Operating Expenses	\$ 593,460,110	581,307,407	12,152,703
Acquisition, Construction, and Improvements	124,519,536	122,498,406	2,021,130
Alteration of Bridges	11,922,472	11,922,472	- - -
Retired Pay	86,313,931	86,313,931	- - -
Reserve Training	27,429,943	27,429,943	- - -
*Research, Development, Test, and Evaluation	16,812,432	16,529,148	283,284
State Boating Safety Assistance	3,834,997	3,834,997	- - -
Oil Pollution Fund	3,113,679	3,113,679	- - -
Coast Guard General Gift Fund	30,564	30,564	- - -
Surcharge Collections, Sales of Commissary Stores	105,497	- - -	105,497
Coast Guard Cadet Fund	4,197,188	- - -	4,197,188
Coast Guard Supply Fund	48,573,789	- - -	48,573,789
Coast Guard Yard Fund	24,443,832	- - -	24,443,832
<b>TOTAL</b>	<b>944,757,970\$</b>	<b>852,980,547</b>	<b>91,777,423</b>



<sup>1</sup> FUNDS AVAILABLE INCLUDE UNOBLIGATED BALANCES BROUGHT FORWARD FROM PRIOR YEAR APPROPRIATIONS AS FOLLOWS:

Operating Expenses Reimbursements	\$ 90,394
Acquisition, Construction, and Improvements	
Appropriated Funds	44,957,408
Reimbursements	687,778
Alteration of Bridges	5,674,760
Research, Development, Test, and Evaluation	
Appropriated Funds	3,521,601
Reimbursements	12,752
State Boating Safety Assistance	104,899
Oil Pollution Fund	10,374,305
Coast Guard General Gift Fund	35,250
Surcharge Collections, Sales of	
Commissary Stores	60,530
Coast Guard Cadet Fund	- - -
Coast Guard Supply Fund	126,276
Coast Guard Yard Fund	3,258,551
TOTAL	\$68,904,504

<sup>2</sup> UNOBLIGATED BALANCES REMAIN AVAILABLE FOR OBLIGATION IN FISCAL YEAR 1975 AS FOLLOWS:

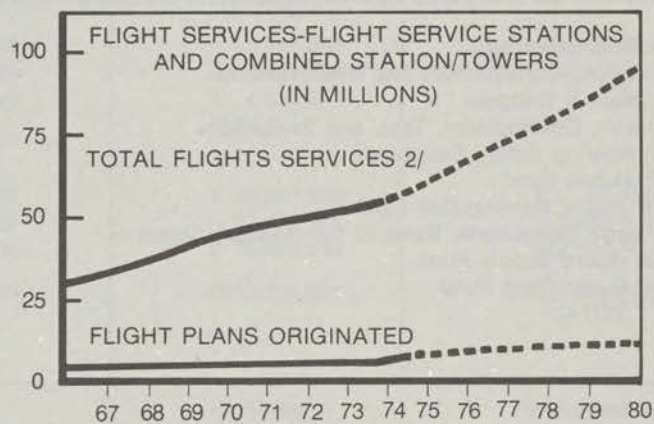
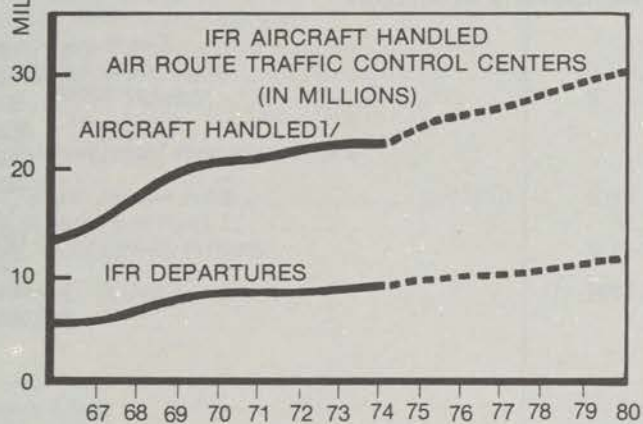
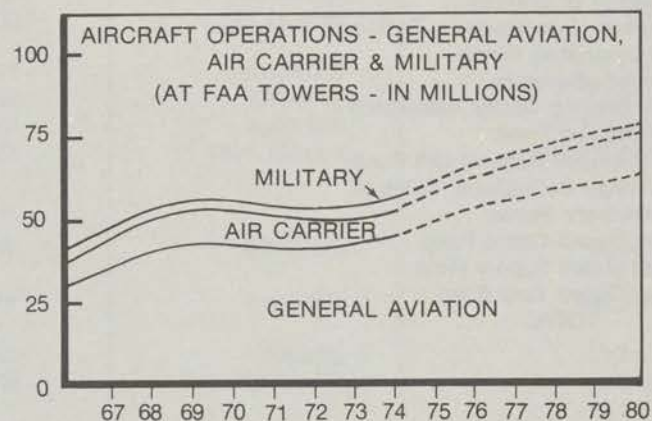
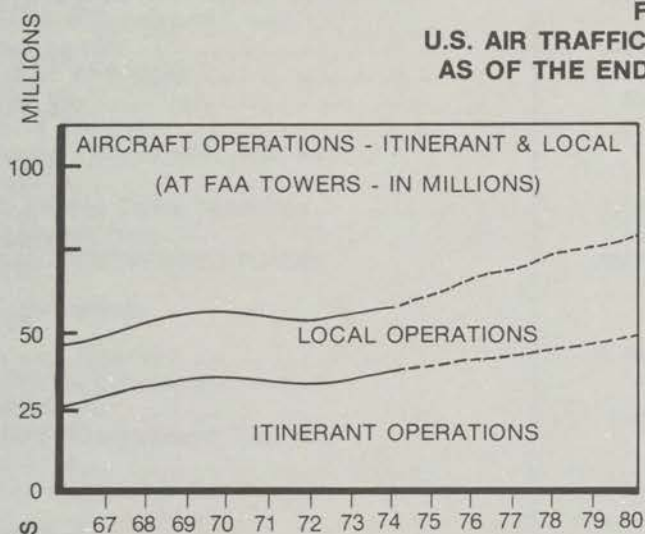
Operating Expenses <sup>a</sup>	\$ 92,452
Acquisition, Construction, and Improvements <sup>a</sup>	39,166,511
Alteration of Bridges <sup>a</sup>	53,760
Research, Development, Test, and Evaluation <sup>a</sup>	658,325
State Boating Safety Assistance	10,089
Oil Pollution Fund	8,355,082
Coast Guard General Gift Fund	17,710
Surcharge Collections, Sales of Commissary Stores	104,896
Coast Guard Supply Fund	37,840
Coast Guard Yard Fund	8,486,923
TOTAL	\$56,983,588

<sup>a</sup> Accounts receivable for costs of repairs or replacements of Coast Guard property damaged by private parties, proper for credit to fiscal year current at the time collections are realized, as authorized in 14 U.S.C. 642

	Coast Guard Projects	Department of Defense Projects
<sup>b</sup> For projects deferred in fiscal year 1974 to be subsequently accomplished	7,137,000	- - -
For projects deferred in fiscal year 1973 and prior years to be subsequently accomplished	12,059,000	200,000
For completion of projects started in fiscal year 1974 and prior years	19,282,733	487,778
<sup>c</sup> For completion of project started in prior year	53,760	- - -
<sup>d</sup> For completion of projects started in fiscal year 1974 and prior fiscal year	645,573	12,752
TOTAL	39,178,066	700,530



**FIGURE 4**  
**U.S. AIR TRAFFIC OPERATIONAL TRENDS**  
**AS OF THE END OF FISCAL YEAR 1974**



**Data Qualifications:**

1/ Obtained by adding IFR overs & 2X IFR departures.

2/ Obtained by adding aircraft contacted, 2X flight plans originated & 2X pilot briefs.



**TABLE IX U.S. CERTIFICATED ROUTE AIR CARRIER ACCIDENTS, FATALITIES, PASSENGERS CARRIED, PASSENGER MILES FLOWN, AND FATALITY RATES, IN SCHEDULED DOMESTIC AND INTERNATIONAL PASSENGER SERVICE, 1964-73**

Year	Accidents		Fatalities				Passengers Carried <sup>1</sup>	Passenger-Miles Flown (000)	Rate Per 100 Million Passenger-Miles Flown
	Total	Fatal	Pas-senger	Crew	Other	Total			
1964	53	9	200	26	1	227	81,762,273	61,022,488	0.261
1965	63	7	226	27	0	253	94,662,314	71,796,399	0.315
1966	53	4	59	13	0	72	109,390,556	83,142,197	0.071
1967	51	8	226	24	5	255	132,088,038	103,381,996	0.219
1968	53	13 <sup>2</sup>	305	34	6	345	150,162,701	119,612,578	0.255
1969	48	7	132	17	3	152	159,213,414	132,161,593	0.100
1970	39	2	2	0	1	3	171,697,097	139,157,806	0.001
1971	41	6 <sup>2</sup>	174	14	6	194	173,664,737	145,678,876	0.119
1972	43	7	160	13	13	186	188,938,932	159,722,015	0.100
1973	32	6	197	20	0	217	202,207,000	171,436,549	0.115

1 BEGINNING IN 1970, CARRIERS WERE REQUIRED TO REPORT REVENUE PASSENGER ENPLANEMENTS, WHEREAS PRIOR TO 1970 REVENUE PASSENGER ORIGINATIONS WERE REPORTED.

2 INCLUDES MIDAIR COLLISIONS NONFATAL TO AIR CARRIER OCCUPANTS.

Note: Passenger deaths occurring in sabotage accidents are included in the passenger fatality column but excluded in the computation of passenger fatality rates (1964-41)

SOURCE: NATIONAL TRANSPORTATION SAFETY BOARD

**TABLE X U.S. CERTIFICATED ROUTE AIR CARRIER ACCIDENTS, AIRCRAFT MILES FLOWN, AIRCRAFT HOURS FLOWN, DEPARTURES, AND ACCIDENT RATES, IN ALL SCHEDULED SERVICE, 1964-73**

Year	Accidents		Aircraft-Miles Flown (000)	Aircraft-Hours Flown	Departures	Accident Rates					
						Per Million Aircraft-Miles		Per 100,000 Aircraft-Hours		Per 100,000 Departures	
						Total Accidents	Fatal Accidents	Total Accidents	Fatal Accidents	Total Accidents	Fatal Accidents
1964	59	11	1,189,135	3,774,771	3,954,083	0.049	0.008	1.537	0.265	1.467	0.253
1965	65	8	1,353,499	4,071,987	4,197,489	0.048	0.006	1.596	0.196	1.549	0.191
1966	56	5	1,482,273	4,232,982	4,373,229	0.038	0.003	1.323	0.118	1.281	0.114
1967	54	8	1,833,563	4,924,080	4,945,969	0.029	0.004	1.097	0.162	1.092	0.162
1968	56	13 <sup>1</sup>	2,146,038	5,521,931	5,299,987	0.026	0.005	1.014	0.199	1.057	0.208
1969	51	8	2,385,082	5,892,254	5,337,302	0.021	0.003	0.866	0.136	0.948	0.149
1970	43	4	2,417,550	5,780,503	5,100,201	0.018	0.002	0.744	0.069	0.843	0.078
1971	43	7 <sup>1</sup>	2,380,664	5,706,270	4,999,093	0.018	0.002	0.754	0.088	0.860	0.100
1972	46	7	2,347,864	5,659,485	4,966,256	0.020	0.003	0.813	0.124	0.926	0.141
1973	36	8	2,448,114	5,898,575	5,133,816	0.015	0.003	0.610	0.136	0.701	0.156

<sup>1</sup> INCLUDES 2 MIDAIR COLLISIONS NONFATAL TO AIR CARRIER OCCUPANTS, EXCLUDED IN FATAL ACCIDENT RATES.

Note: A sabotage accident which occurred 5/7/64 is included in all computations except rates.

SOURCE: NATIONAL TRANSPORTATION SAFETY BOARD



**TABLE XI U.S. GENERAL AVIATION ACCIDENTS, FATALITIES, AIRCRAFT HOURS FLOWN, AIRCRAFT MILES FLOWN, AND ACCIDENT RATES, 1964-73**

Year	Accidents		Fatalities	Aircraft-Hours Flown (000)	Aircraft Miles Flown (000)	ACCIDENT RATES			
						Per 100,000 Aircraft-Hours Flown		Per Million Aircraft-Miles Flown	
	Total	Fatal				Total	Fatal	Total	Fatal
1964	5,069	526	1,083	15,738	2,180,818	32.2	3.34	2.32	0.241
1965	5,196	538	1,029	16,733	2,562,380	31.1	3.22	2.03	0.210
1966	5,712	573	1,151 <sup>1</sup>	21,023	3,336,138	27.2	2.73	1.71	0.172
1967	6,115	603	1,333 <sup>1</sup>	22,153	3,439,964	27.6	2.72	1.78	0.175
1968 <sup>2</sup>	4,968 <sup>3</sup>	692 <sup>3</sup>	1,399	24,053	3,700,864	20.6	2.86	1.34	0.186
1969	4,767	647	1,495 <sup>1</sup>	25,351	3,926,461	18.8	2.55	1.21	0.164
1970	4,712 <sup>3</sup>	641 <sup>3</sup>	1,310	26,030	3,207,127 <sup>4</sup>	18.1	2.46	1.47	0.200
1971	4,648	661	1,355	25,512	3,143,181	18.2	2.59	1.48	0.211
1972	4,256 <sup>3</sup>	695 <sup>3</sup>	1,426 <sup>1</sup>	26,974	3,317,100	15.8	2.57	1.28	0.209
1973	4,251 <sup>3</sup>	722 <sup>3</sup>	1,411	30,048	3,728,500	14.1	2.40	1.14	0.193

1 INCLUDES AIR CARRIER FATALITIES (1966-2, 1967-104, 1969-82, 1972-5) WHEN IN COLLISION WITH GENERAL AVIATION AIRCRAFT.

SOURCE: NATIONAL TRANSPORTATION SAFETY BOARD

2 COMMENCING JANUARY 1, 1968, THE DEFINITION OF SUBSTANTIAL DAMAGE WAS CHANGED; THEREFORE, FEWER ACCIDENTS WERE REPORTED. CARE SHOULD BE USED IN COMPARING WITH SIMILAR DATA FOR PRIOR YEARS.

3 SUICIDE/SABOTAGE ACCIDENTS INCLUDED IN ALL COMPUTATIONS EXCEPT RATES (1968-3, 1970-1, 1972-3, 1973-2).

4 BEGINNING IN 1970, THE DECREASE IN AIRCRAFT-MILES FLOWN IS THE RESULT OF A CHANGE IN THE FAA STANDARD FOR ESTIMATING MILES FLOWN.

**TABLE XII SUMMARY OF MOTOR VEHICLE STATISTICS, 1967, 1972, AND 1973**

Registered Motor Vehicles (in thousands)	1967	1972	1973 <sup>1</sup>	1967 - 1973 Change in percentage
Automobiles	80,414	96,860	101,237	+ 25.89
Trucks	16,193	21,239	22,804	+ 40.83
Buses	338	407	437	+ 29.29
Motorcycles and other vehicles	1,953	3,798	4,222	+ 116.18
Total	98,898	122,304	128,700	+ 30.13
Licensed Drivers (in thousands)	103,172	118,414	122,594	+ 18.82
Motor Vehicle Miles (in billions)	965	1,268	1,306	+ 35.34
Motor Vehicle Fatalities	52,924	56,910	56,056	+ 5.92
Fatalities per 100 million motor vehicle miles	5.48	4.49	4.29	- 21.72

<sup>1</sup> ESTIMATED



FIGURE 5  
RELATIVE CHANGES IN HIGHWAY FATALITIES  
BY PRINCIPAL CATEGORIES, 1967-73

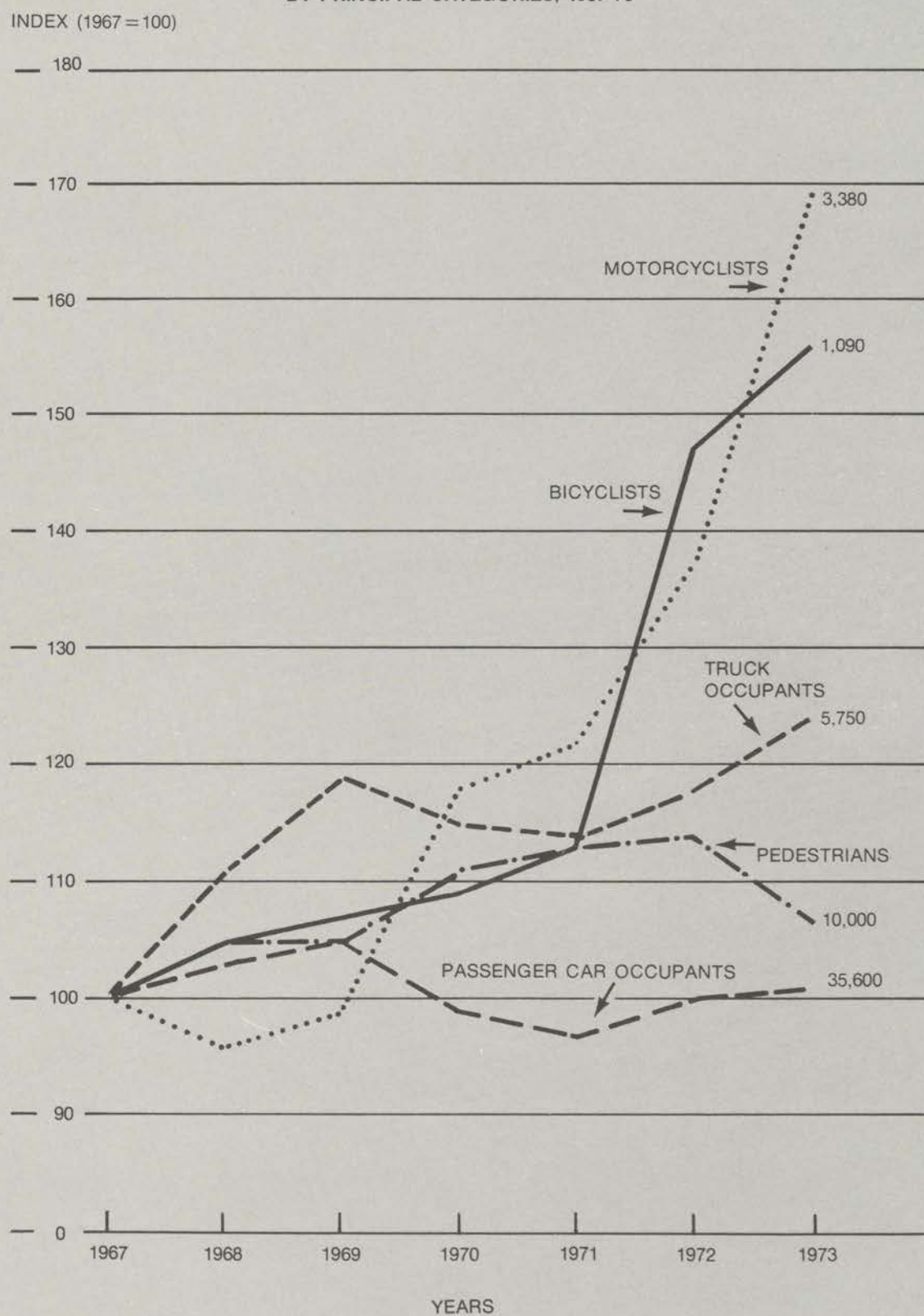




TABLE 1. A. J. BENTLEY AND L. R. MONTGOMERY, FISHING, ANCHORY POINTS, B. J. BENTLEY AND L. R. MONTGOMERY, 1964-70

