STUDY BY THE STAFF OF THE U.S.

General Accounting Office

Transportation: Evolving Issues For Analysis

This study is based on GAO's current assessment of the major factors affecting the economic viability and efficiency of the U.S. transportation system. Every part of the system, including domestic and international aviation, highways, inland waterways, intercity buses, motor vehicles, ocean shipping, pipelines, rail freight and passenger service, trucking, and urban mass transit, is included in GAO's plan for future audits of Federal programs. The study also emphasizes Congress' interest and concerns, which are reflected by the Federal Government's expenditures of $24 billion on transportation-related agency programs in 1981.

CED-82-15
JANUARY 6, 1982

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FOREWORD

The Federal Government alone has spent about $24 billion in 1981 on transportation-related agency programs. These programs include financial and technical aid, development and operation of transportation facilities and support services, economic regulation, research and development, and safety regulation.

Transportation affects the daily lives of all Americans--as passengers, consumers, employees, shippers, and investors. Transportation influences population distribution; economic development; the shape of cities; energy consumption; the balance of trade; business and farm access to markets and materials; and the pace, style, and quality of life. Internationally, transportation is the connecting link which permits the exchange of goods and people among the nations of the world.

The diversity of transportation programs, problems, and policy issues and their changing nature influences the scope and direction of our plan for auditing Federal transportation programs. This study is based on our current assessment of the major factors affecting the economic viability and efficiency of the U.S. transportation system. The information contained in this study is used for planning purposes.

Chapter 1 presents a perspective on the current and emerging transportation issues which our audit work must address. Chapters 2 through 10 discuss selected major issues in detail and summarize our related audit work. Chapter 11 discusses long-range trends in energy, the environment, and new technology which will affect transportation in the future. Appendix I presents an overview of the Government agencies, congressional committees, private sector lobby groups, and research organizations involved in transportation issues.

Please call Jim Blume, Issue Area Planning Director/ Transportation, (202) 426-1777 for information on this study and our current and planned work in transportation.

Henry Eschwege

Director
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Contents

ABBREVIATIONS

Amtrak	National Railraod Passenger Corporation
CAB	Civil Aeronautics Board
Conrail	Consolidated Rail Corporation
DOT	Department of Transportation
FAA	Federal Aviation Administration
FHwA	Federal Highway Administration
FTC	Federal Trade Commission
GAO	General Accounting Office
ICC	Interstate Commerce Commission
NHTSA	National Highway Traffic Safety Administration
UMTA	Urban Mass Transportation Administration
USRA	United States Railway Association
WMATA	Washington Metropolitan Area Transit Authority

CHAPTER 1

PERSPECTIVE ON TRANSPORTATION ISSUES

The national transportation bill--the total cost of all private and Government (excluding military) spending for transportation equipment and services--amounts to about $500 billion per year. The National Transportation Policy Study Commission has estimated that total private and Government spending on transportation from 1975 through 2000 will exceed $14 trillion The Federal Government alone has spent about $24 billion in 1981 on transportation-related agencies and programs, excluding its own purchases of transportation goods and services. These cost estimates actually understate the impact of transportation on our society since they exclude the indirect social and environmental costs of accidental deaths and injuries, environmental pollution, urban sprawl, reduced mobility for the elderly and handicapped, and dependence on foreign energy sources.

Federal, State, and local governments have many responsibilities regarding transportation. Federal responsibilities include:

--Promoting the development of an efficient and accessible national transportation system.

--Encouraging fair competition and protecting the public from abuse of monopoly power.

--Protecting the safety of travelers and cargo.

--Balancing environmental, social, and energy goals with transportation needs.

AREAS OF CONCERN

The diversity of transportation programs, problems, and policy issues influences the scope and direction of our audit work. There is no single Federal program or "transportation problem" on which our work focuses. As a result, we address many different problems and policy issues.

For planning purposes, we have divided the transportation area into the following nine areas-of-concern which are discussed in chapters 2 through 10.

--Transportation problems are becoming increasingly complex, traversing the traditional boundaries of transportation modes and Federal agency jurisdictions. Our most difficult transportation problems are frequently multimodal (affecting several transportation modes) and/or intermodal (involving the interaction among transportation modes).

How can we plan, coordinate, and manage multimodal/intermodal transportation policies and programs more effectively? (See ch. 2.)

--Mass transit is facing a financial crisis. The transit operating deficit was more than $3 billion in 1980 and may exceed $6 billion by 1985. The Reagan administration is proposing a cutoff of Federal operating subsidies and is cutting back on other Federal aid to transit. What can be done to control transit costs and increase transit revenues? How can Federal transit programs be made more efficient and effective? (See ch. 3.)

--Freight railroads are experiencing severe economic and financial difficulties in the Northeast and Midwest. Despite billions of dollars in Federal aid, Conrail is still not financially self-sufficient. The Reagan administration plans to sell Conrail and sharply reduce other Federal rail assistance programs. What can be done to improve the efficiency and effectiveness of Conrail's management? How can adequate rail service be assured for the Northeast and Midwest? (See ch. 4.)

--Automobiles play a vital role in the U.S. transportation system, but they impose substantial costs on society. For example, over 50,000 people were killed in traffic accidents in 1980. Also, automobiles are one of the largest contributors to air pollution and a major consumer of scarce energy supplies--automobiles account for 40 percent of U.S. petroleum consumption. How effective are Federal efforts to assist State and local traffic safety programs? How effective are Federal motor vehicle safety standards? How effective are Federal efforts to improve automobile fuel economy and protect the economic interests of automobile owners and operators? (See ch. 5.)

--The condition of the Nation's highways is declining. Billions of dollars are needed to preserve the highway system, but State and Federal revenues are failing to keep pace with highway needs. How effective are Federal and State efforts to finance and preserve the Nation's highways? How efficiently and economically are Federal highway programs being administered and controlled? (See ch. 6.)

--After many years of controversy and debate, the Congress has enacted legislation which substantially reduces the Interstate Commerce Commission's (ICC's) regulation of the trucking, railroad, and household goodsmoving industries. Pending legislation would deregulate ICC's controls over intercity bus service. What has been the impact of deregulation on truck, rail, and household goods carriers and on shippers and consumers? Is ICC responding efficiently and effectively to its changed role and responsibilities? (See ch. 7.)

--Aviation faces problems--uncertainties about the impacts of airline deregulation, questions about efforts to meet future airport capacities, and the Federal Aviation Administration's (FAA's) management of its equipment and facilities. Are Federal responsibilities for the national aviation system being managed efficiently and effectively? Is airline deregulation having any adverse effects on the industry or consumers? (See ch. 8.)

--Intercity rail passenger service carried less than one-third of 1 percent of total intercity passenger mileage, but received more than $900 million in Federal subsidies in fiscal year 1980. The Reagan administration is reducing Federal aid to Amtrak. How much rail passenger service do we need and at what price? (See ch. 9.)

--Despite billions of dollars in Federal subsidies, our maritime industries are declining and our ocean transportation system may be inadequate to meet national defense mobilization needs in a crisis. Can we find cost-effective ways to revitalize the U.S. merchant marine and shipbuilding industries? (See ch. 10.)

The transportation issues are in a state of flux. For the most part, the issues identified above are not new. But congressional interests and needs are shifting rapidly in directions which are not yet clear. The recent administration change has sharply modified the Federal Government's goals and objectives for transportation. It has proposed major cutbacks in Federal involvement and activities in almost every area of transportation. The administration has proposed legislation reducing Federal spending on aviation, highways, mass transit, railroads, and the civilian maritime industry and cutbacks in regulations ranging from Federal motor vehicle safety standards to Federal requirements for full accessibility by the handicapped to mass transit systems.

The Congress is presently reviewing the new administration's proposals, and the outcome will not be clear for some time. Over the long-term, the enactment of the administration's proposals could result in substantial shifts in the nature and focus of our audit work in transportation. In the interim, our strategy will be flexible and emphasize audit work which will not be unduly affected by the success or failure of the administration's proposals.

Although most of our future work in transportation will focus on the areas-of-concern listed above, congressional needs and our responsibilities for audit coverage of Federal transportation programs will require some audits which address other transportation issues.

We will also conduct audits with implications for Federal transportation programs in such areas as accounting and financial reporting, energy, environmental protection programs, Federal procurement of goods and services, science and technology policies and programs, consumer and worker protection, land use planning and control, housing and community development programs, water and water-related programs, tax policy, and food.

Subsequent chapters examine the nine areas-of-concern in detail and summarize our related audit activities. Chapter 11 discusses long-term trends in energy, the environment, and new technology which will affect the future development of the U.S. transportation system. Appendix I presents an overview of Government agencies, congressional committees, private sector lobby groups, and research organizations involved in transportation.

CHAPTER 2

PLANNING, COORDINATING, AND MANAGING MULTIMODAL/INTERMODAL TRANSPORTATION POLICIES AND PROGRAMS

Most Federal transportation programs are narrowly focused on a limited set of problems relating to a single transportation mode. Historically, new transportation programs and agencies were created whenever new problems arose and little emphasis was placed on coordinating the new activities with existing programs. Over the years, this process of piecemeal and incremental growth produced the present decentralized organization of Federal transportation programs. As a result, the Department of Transportation (DOT) often has difficulty coordinating the the plans and programs of its semiautonomous operating departments, such as FAA and the Federal Highway Administration (FHwA). Other Federal agencies with transportation-related programs are completely outside of DOT's control; specifically, the independent Transportation Regulatory Commission and the Army Corps of Engineers. The Maritime Administration was recently transferred from the Department of Commerce to DOT.

During most of the history of the United States, the rapid growth in national economic wealth and the abundance of natural resources made the need for transportation planning and coordination seem unimportant. But natural resources such as petroleum and clean air, which were abundant and cheap, have become scarce and expensive. Also growth in economic productivity and wealth has slowed. National standards for the quality of transportation have continued to rise in areas such as personal mobility, speed and comfort, environmental compatibility, cleanliness, and safety. We must spend increasingly more money to meet our transportation needs. All these factors have caused our transportation problems to become more complex, traversing the traditional boundaries of transportation modes and Federal agency jurisdictions. As a result, our most difficult transportation problems are frequently multimodal.

The need for careful planning, coordination, and management of the multimodal and intermodal aspects of our transportation policies and programs is becoming increasingly apparent. The Congress recognizes that (1) Federal policies regarding inland waterways, coal slurry pipelines, and trucking industry deregulation affect the Nation's railroads, (2) the Federal highway program has important effects on Federal mass transit policy, and (3) uncoordinated Federal policies for automobile safety, fuel economy, and air pollution may adversely affect the economic health of the automobile industry. There is also increasing awareness that better intermodal coordination and cooperation among competing transportation modes can increase the overall efficiency of the transportation system and improve transportation productivity. The importance of multimodal/intermodal

planning, coordination, and management is underlined by the National Transportation Policy Study Commission's forecast that total public and private transportation spending will exceed $14 trillion over the 1975-2000 period.

STRATEGY FOR SELECTING LINES-OF-EFFORT

We selected two lines-of-effort to address this area-of-concern in the near future. Our first line-of-effort focuses on the effectiveness of national transportation policymaking. The second focuses on the economy, efficiency, and effectiveness of DOT's multimodal/intermodal functions and responsibilities. This latter line-of-effort integrates the issues of multimodal/intermodal planning, coordination, and management. Our intention is to provide a framework for addressing transportation issues and problems which traverse organizational boundaries and modal lines. Although these are complex and difficult issues to analyze, we believe that multimodal/intermodal planning, coordination, and management offer great potential for increasing the transportation system's effectiveness and productivity.

Effectiveness of Federal efforts to plan and coordinate a cohesive national transportation policy

This very complex and politically controversial issue has been the subject of numerous studies and investigations by the Congress, the executive branch, and private organizations. In recent years, studies of the issue have been completed by DOT, the Senate Committee on Governmental Affairs (with our assistance), the National Transportation Policy Study Commission, and the U.S. Chamber of Commerce. The issue presents difficult problems of analysis, which are complicated by its sensitive and highly political nature.

In defining our approach to this issue, we are trying to avoid questions which are primarily political and to focus on more objective matters relating to Government organization and management. Accordingly, our line-of-effort will focus on the effectiveness of Federal efforts to plan and coordinate national transportation policy--that is, on the management of the policymaking process rather than on the pros and cons of specific political issues and decisions.

Economy, efficiency, and effectiveness of DOT's multimodal/intermodal planning, coordination, and management functions

Most of DOT's functions and programs are administered by its semiautonomous operating departments, such as FAA. Generally, these activities are oriented toward a single mode of transportation: highways or aviation or mass transit. But an increasing

number of important transportation problems traverse these traditional organizational and modal boundaries.

The increasing number of State and local regulations relating to hazardous materials transportation is an example of problems traversing traditional boundaries. Many of these regulations focus on problems relating to a single type of hazardous material, a single mode of transportation, or a specific locality. The result is an increasingly fragmented and uncoordinated regulatory environment which is confusing to shippers and transporters and may actually reduce their ability to operate safely and efficiently. The Secretary of Transportation has broad regulatory authority relating to hazardous materials under the Hazardous Materials Transportation Act; a coordinated and uniform Federal approach to this problem would appear to be essential. But, DOT's hazardous materials programs are divided among five different operating departments, and serious questions exist regarding the coordination, comprehensiveness, and uniformity of DOT's efforts.

The problem of increasing hazardous materials regulations is one of several key transportation issues which are multimodal and/or intermodal. The establishment of DOT in 1967 was intended to provide an organizational framework for planning, coordinating, and managing the Federal Government's involvement in multimodal/ intermodal issues. But, DOT's decentralized organization has presented major barriers to effective planning, coordination, and management of the multimodal and intermodal aspects of its responsibilities and functions. In such areas as hazardous materials transportation regulation, research and development, safety, intermodal port facilities' needs, and Federal transportation planning requirements, the result has been inconsistent and fragmented policies and programs of questionable economy, efficiency, and effectiveness.

This second line-of-effort is essentially functional. It is intended to provide a framework for our analysis of key issues relating to DOT's multimodal/intermodal planning, coordination, and management functions and responsibilities. We plan to conduct a series of reviews focusing on crosscutting departmental issues and problems in such areas as research and development, urban transportation planning requirements, safety information management, and program evaluation which will continue beyond our current planning period. We also plan to use this line-of-effort for work in other areas-of-concern which raise multimodal/ intermodal transportation issues; for example, internal audit and fraud prevention.

--How effectively is DOT planning, coordinating, and managing specific functionally related policies, programs, and activities of its semiautonomous operating departments?

--How efficient and economical are specific multimodal/ intermodal programs and activities?

--Are the multimodal/intermodal implications and effects of specific transportation problems and issues receiving adequate consideration by DOT?

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--Policymaking, planning, and budgeting in the Office of the Secretary of Transportation.

--Role, functions, and management of DOT's Transportation Systems Center.

--Economy, efficiency, and effectiveness of Metropolitan Planning Organizations.

GAO reports

"American Seaports: Changes Affecting Operations and Development" (CED-80-8, Nov. 16, 1979)

"Promotion of Cargo Security Receives Limited Support" (CED-80-81, Mar. 31, 1980)

"The [National] Transportation Safety Board Could Improve Its Planning Process" (CED-80-101, May 28, 1980)

"The Department of Transportation and the Environmental Protection Agency Acted Within the Scope of Their Responsibility in Providing Contract Funds for Operation of the Citizen/Government Transportation Planning Center in Windsor, Connecticut" (CED-80-99, June 19, 1980)

"Transportation Issues in the 1980's" (CED-80-133, Sept. 8, 1980)

"Programs for Ensuring the Safe Transportation of Hazardous Materials Need Improvement" (CED-81-5, Nov. 4, 1980)

"Trans-Alaska Oil Pipeline Operations: More Federal Monitoring Needed" (EMD-81-11, Jan. 6, 1981)

"U.S. Grain Transportation Network Needs System Perspective To Meet Future World Needs" (CED-81-59, Apr. 8, 1981)

"Congressional Action Is Needed to Resolve the Northeast Corridor Cost-Sharing Dispute" (CED-81-97, Apr. 30, 1981)

CHAPTER 3

DEVELOPING EFFICIENT AND EFFECTIVE MASS TRANSIT SYSTEMS

The cost of mass transit has grown dramatically in recent years, while farebox revenues have not kept pace and productivity has declined. Increasing levels of Federal, State, and local government assistance have been needed to sustain transit operations during this period. Indications are that the amount of Federal assistance available for mass transit will not be increased and may decline. The following major issues face mass transit.

--Controlling transit costs.

--Improving transit productivity.

--Increasing transit revenues.

--Minimizing the cost impacts of Federal requirements.

--Adopting less costly public transportation alternatives than traditional scheduled fixed-route service.

--Funding mass transit operating deficits.

It should be noted that the Reagan administration is not eliminating the Federal Government's transit assistance. But, the administration has proposed phasing out Federal operating assistance by 1985 and limiting capital investment assistance to bus purchases, rehabilitation of existing transit systems, and completion only of new subway systems already under construction. Even if the Congress accepts the new administration's proposals, the Federal Government will still play a major financial role in mass transit, with capital authorizations amounting to $3 billion in fiscal year 1985 (compared with $4.4 billion in the Carter budget).

The administration's proposals are receiving substantial opposition from members of both parties, opposition which has been heightened by the recent severe financial problems of transit systems nationwide. We, therefore, anticipate that congressional interest in our work in this area will continue. As discussed below, our planned work will emphasize issues relating to Federal transit spending, particularly economy and efficiency issues.

Population trends and corresponding land use and development patterns influence the type of transportation systems that develop. In central cities and the more densely populated areas of the Nation, conventional transit systems--buses and fixed guideways--will probably continue to be an important way of

meeting the mobility needs of people. Conventional transit systems usually represent a substantial investment in these areas. Although most transit systems are no longer losing riders and many have shown ridership gains, the cost of providing mass transit service has increased substantially. So have operating deficits, which exceeded $3 billion in 1980 and are expected to continue to increase.

During the late 1970's, concerns over energy problems generated proposals to expand mass transit capacities so that more commuters could travel by transit during peak hours. However, the expansion may add to transit operating deficits and increase the need for Government subsidies. In response to increasing deficits, the transit industry is being challenged to be more productive and effective and to recover a greater portion of their costs from the farebox. Increasing transit productivity, efficiency, and farebox revenues is complicated by many factors: (1) increasing transit fares could negatively affect transit ridership, which the transit industry has been encouraged to increase, (2) poor transit productivity is often the result of inefficient labor practices called for in union contracts which are difficult to change because of federally mandated labor protection requirements, and (3) Federal requirements for full accessibility to transit systems for the elderly and the handicapped and specifications for mass transit vehicles add to the cost of mass transit, making it difficult for transit operators to control costs. Thus, what to finance is an important issue in mass transit. Another issue is the appropriate roles and functions of Federal, State, and local governments in funding, managing, and regulating mass transit.

Although the Federal Government has initiated major new efforts to revitalize central cities, and some changes are beginning to occur, indications are that most new population and economic growth will continue to be in lower density areas. The Federal Government needs to decide the extent to which it will support the development of transportation services in less densely populated areas, where conventional transit systems have not been cost effective. Support for transit services in these areas will most likely be for forms of flexible route and schedule transportation systems, using vehicles of varying size that are smaller than conventional transit buses.

One of the great needs today is to reduce energy consumption. As illustrated by the gasoline shortage in mid-1979, transit systems cannot cope with sudden shifts in the demand for transit services. Even modest shifts from the automobile can strain public transit systems beyond capacity. With the prospect of continuing tight energy supplies, reliance on the single-occupant automobile, particularly for work trips, makes the Nation vulnerable to serious economic and social consequences. Other means to reduce fuel consumption, such as increasing vehicle occupancy, are needed. Although increases in vehicle occupancy rates can drastically reduce energy consumption, such a shift requires

individual freedom of choice. As a result, these actions will not be taken quickly without incentives or mandates. What the Government does to reduce or change transportation demand and reduce energy consumption will influence both transportation system development and energy consumption.

The issue of how best to meet the transit needs of the elderly and the handicapped is one of continued controversy. Supporters of a fully accessible system for the elderly and the handicapped believe that equal access to all mass transit is a civil right. The Federal Government has issued regulations which require full accessibility. Most transit system officials believe that the cost to provide such a system will be very high and that the use of the system by the handicapped would be low. They also question the availability of dependable equipment. The transit industry prefers to provide specialized transit service (paratransit). Legislative attempts to change the requirement for full accessibility have been unsuccessful, but future legislation to change the requirement is expected. In fact, DOT has drafted legislation that would give local governments the option of meeting the transportation needs of the elderly and the handicapped either through full accessibility or paratransit services.

When this study was being prepared, the Reagan administration was proposing major changes in Federal mass transit assistance. Changes being considered include significant reductions in Federal mass transit assistance to include phasing out Federal operating assistance and deferring new subway construction. Depending on how the Congress deals with these proposals, the objectives of Federal mass transit programs and the Federal Government's role in mass transit could change significantly.

The Reagan administration's interest in reducing Federal assistance and regulation will require that difficult decisions be made in allocating more limited Federal assistance among (1) the needs of older established transit systems and services, (2) the expansion of existing services, and (3) the establishment of new transit services. Also, it will be even more important that transit capital investment projects, such as transit equipment procurement and facilities construction, be prudently managed so that the available capital assistance will be used in the most efficient manner. A reduced level of Federal assistance will also require that greater emphasis be directed at getting better use of existing transportation resources including (1) more efficient and effective transit operations and (2) complementing traditional transit services with coordinated use of nontraditional forms of mass transit services, such as carpools, vanpools, shared-ride taxis, and other forms of paratransit. In light of these expected changes in Federal mass transit assistance, our work will concentrate on opportunities for controlling costs and improving transit efficiency and productivity.

STRATEGY FOR SELECTING LINES--OF-EFFORT

We selected five lines-of-effort to address this area-of-concern. The first line-of-effort focuses on improving transit operating efficiency and cost control--a critical issue in view of possible Federal aid cutbacks. The second line-of-effort addresses labor productivity and personnel management; our recent report on transit operating subsidies found labor productivity problems to be a key factor in transit cost increases. The third line-of-effort focuses on the economy, efficiency and effectiveness of Federal capital assistance projects, emphasizing the areas of bus and rail rehabilitation, bus procurements, and maintenance facilities. The fourth line-ofeffort focuses on the impact of Federal requirements on transit decisions and operations and whether requirements imposed as a condition of receiving Federal aid are unnecessarily restricting local options for reducing costs. Our fifth line-of-effort focuses on the construction and operation of the Washington Metropolitan Area Transit Authority (WMATA)--a subject of continuing importance and interest to the Congress.

How can transit operations be made more efficient, effective, and less costly so as to enhance the transit industry's contributions to national goals of increased mobility and reduced congestion?

This line-of-effort reflects the emphasis being placed on reduced Federal funding and the need for improved efficiency and cost control by the industry. In addition to expected reductions in Federal mass transit funding, State and local governments are concerned about their ability to keep pace with the industry's requests for increasing subsidy levels. Faced with the prospect that Government subsidies may remain at their present level or even decline, the transit industry must find ways to generate more revenues and minimize its operating costs. The line-of-effort will be directed at identifying ways in which this can be accomplished and efforts that will be required.

As indicated, this line-of-effort focuses on the efficiency as well as the effectiveness of mass transit operations. Our objective is to stimulate effectiveness, efficiency, and cost improvements in transit operations. Our strategy will be to review selected activities and assess the Urban Mass Transportation Administration's (UMTA's) role in assuring that transit operations are run efficiently, effectively, and economically. In doing so, we will address the following questions.

- --What are the factors of transit operations and Federal assistance that negatively affect transit cost, efficiency, and effectiveness?
- --What kinds of actions are needed to alleviate or at least minimize these negative effects?

--What can the Federal Government do to encourage improvements in transit cost, efficiency, and effectiveness?

Effectiveness of Federal efforts to assist the transit community in improving its staff recruitment, training, and other developmental activities and overall transit labor productivity

Qualified and adequately trained management and operating personnel are needed to achieve efficient, effective, and economical transit operations. Many transit systems have had problems in recruiting and developing the qualified management and operating personnel they need. This line-of-effort also addresses labor productivity problems, including those caused by federally mandated labor protection requirements.

Our objective under this line-of-effort is to stimulate improvements in the quality of transit management and operational personnel and their productivity. Our strategy will be to identify (1) the key factors that prevent the transit industry from recruiting, training, and developing personnel with the skills and abilities the industry needs and contribute to poor labor productivity and (2) actions that can be taken to address these factors. Our work will address the following questions:

--What is the nature of the transit industry's labor productivity and personnel problems?

--What are the causes and contributing factors?

--How are these problems affecting transit operations?

--What efforts have the industry and UMTA made to resolve the problems and what has resulted from these efforts?

--What else does the industry and/or UMTA need to do and what are the obstacles to doing it?

How efficiently and effectively has Federal capital assistance been used to meet transit needs?

This line-of-effort was established to give greater attention to evaluating the economy, efficiency, and effectiveness of Federal capital assistance. The Reagan administration believes that this form of assistance should be the primary focus for Federal involvement in the transit area. However, the proposed reductions in Federal capital assistance require a new emphasis on identifying ways to improve the use of capital funds so that as many transit system needs as possible can be met with the limited Federal funds available.

Our objectives under this line-of-effort are to identify ways to achieve effective and efficient use of Federal capital assistance and to assess the contributions achieved with these funds in terms of meeting the national transit goals of increased mobility and reduced congestion. Because the Reagan administration has indicated that it will not fund construction of new rail starts and rail extensions under current economic conditions, our review efforts will be concentrated on capital projects related to bus and rail rehabilitation, bus procurements, and maintenance facilities.

Our strategy will be to examine the way UMTA works with local transit systems to identify transit needs, select capital projects to meet those needs, and manage the acquisition or construction of capital projects. We will address the following questions:

--In selecting capital projects for funding, has UMTA made sure that all possible alternatives, such as rehabilitation versus replacement, have been considered so that transit needs can be met at the minimum cost possible?

--In selecting capital projects for funding, has UMTA made sure that all costs have been considered and not just the cost to obtain the equipment or facility?

--What assurance has UMTA required concerning whether the transit system has the funds, facilities, and technical capability to adequately operate and maintain the equipment being obtained with Federal funds?

--What steps has UMTA taken to ensure the most effective and efficient use of the Federal funds provided?

--How effectively and efficiently does UMTA manage the capital grant fund?

--What has been UMTA's role in contributing to the design, development, and procurement of efficient, economical, and reliable transit equipment?

The impact of Federal requirements on transit decisions and operations

With the proposed reductions in Federal capital assistance and the phase out of Federal operating subsidies, we believe it is necessary to examine the impact of Federal requirements on transit decisions and operations. In an environment where transit systems are striving to reduce costs to cope with reduced Federal assistance, it is important to consider whether the legislative and administrative requirements imposed as a condition of Federal assistance are unnecessarily restricting local options for reducing costs.

Our objective under this line-of-effort is to assess the impact of legislative and administrative requirements that are imposed as a condition to Federal transit assistance to determine if there are any alternative ways to achieve the objectives of these requirements with lower costs or less intrusion on local decisionmaking.

Our strategy will be to examine transit system operations to determine the results achieved and the constraints experienced as a result of various legislative requirements (such as the section 13(c) labor protection provision) or administrative regulations (such as planning requirements, required contract provisions, and required financial and operational data reporting). We will address the following questions:

--What were the original objectives that were to be achieved by imposing these requirements?

--Are these objectives being achieved or exceeded?

--Have these requirements been manipulated to achieve purposes not originally intended?

--What costs are incurred in meeting these requirements in terms of additional time, required paperwork, etc.?

--Have these requirements become obstacles that hinder efforts to improve transit efficiency and effectiveness?

--Could the intended objectives be achieved by alternative methods that would not be as restrictive?

--Are these requirements and restrictions appropriate, considering the level of Federal Government funding?

Assessing the issues confronting WMATA and their implication for its future

The construction and operation of the transit system for the Nation's capital is a subject of continuing importance and interest to the Congress. The Reagan administration has indicated a willingness to expend about $1 billion of Federal funds to complete only a 62-mile system, rather than a planned 101-mile system. Because of this and the fact that in prior years the Congress provided separate appropriations to construct the regional rapid-rail system, a separate line-of-effort is warranted to determine whether the most effective use has been made of these capital funds and to evaluate the adequacy of maintenance and operational procedures to protect the Federal Government's investment. Because WMATA must now compete with other transit systems for available Federal capital and operating assistance, most of the other transit issues affecting the WMATA system will be addressed as part of assignments dealing with issues on the other lines-of-efforts on a national basis.

Our objective under this line-of-effort will be to determine (1) what can be done to minimize the Federal funds needed to complete the regional rapid-rail system, (2) if the best possible use is being made of the funds provided, and (3) what improvements are needed to ensure adequate operation and maintenance of the system to protect the Federal Government's investment.

Our strategy will be to conduct a series of reviews of WMATA's management of its construction program and operating and maintenance activities. We will address the following questions:

--What is the estimated cost to complete the approved segments of the rapid-rail system and how reasonable are these estimates?

--What could be done to minimize future cost growth for construction of the rapid-rail system?

--Has the rapid-rail construction project been managed efficiently and effectively?

--Have arrangements been made to obtain sufficient funds to adequately operate and maintain the transit system?

--Have operational problems been promptly identified and resolved to minimize their impact on transit service?

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--Transit maintenance problems--their impact on system efficiency, effectiveness, and equipment needs and actions that might be taken to alleviate the problems.

--The role of commuter rail in achieving mass transit goals.

--The peaking phenomenon of urban travel and efforts made to minimize the peaks.

--The impact of transportation assistance on increasing and coordinating transportation services in nonurban areas.

--The administration and impact of capital project grants for mass transit awarded to the Massachusetts Bay Transit Authority.

--The effectiveness of the bus development and procurement process, including UMTA's role, in providing reliable and efficient buses needed by the transit industry at the lowest possible cost.

--The adequacy of UMTA's organization in processing grant applications and overseeing project development.

--The effectiveness of grant programs administered by UMTA's Region III.

--Problems in constructing and operating the Washington, D.C., rapid-rail system.

GAO reports

"Transit Equipment Warranties Should Be Enforced" (PSAD-80-12, Dec. 7, 1979)

"Need for Controls by the Urban Mass Transportation Administration Over No-Prejudice Authorizations" (PSAD-80-27, Mar. 19, 1980)

"Metropolitan Atlanta's Rapid Transit System: Problems and Progress" (PSAD-80-34, Apr. 9, 1980)

"The Rapid Transit System of Metropolitan Dade County, Florida, Has Slipped Its Starting Date 16 Months" (PSAD-80-49, June 5, 1980)

"Better Justification Needed for Automated People Mover Demonstration Projects" (CED-80-98, Aug. 19, 1980)

"Davis-Bacon Act Has Inflationary Impact on METRO Construction" (HRD-81-10, Oct. 2, 1980)

"Massachusetts Bay Transportation Authority's Termination of Contract for Light Rail Vehicles" (PSAD-81-11, Nov. 10, 1980)

"Increasing Commuting by Transit and Ridesharing: Many Factors Should Be Considered" (CED-81-13, Nov. 14, 1980)

"Soaring Transit Subsidies Must Be Controlled" (CED-81-28, Feb. 26, 1981)

"The Urban Mass Transportation Administration's Involvement in Bus Specification and Testing" (CED-81-105, June 5, 1981)

"Transportation Contingency Plans for Future Gas Shortages Will Not Meet Commuter Needs" (CED-81-79, July 1, 1981)

CHAPTER 4

ASSURING ADEQUATE RAIL FREIGHT TRANSPORTATION

After almost a decade of direct Federal financial intervention, brought about initially by the financial collapse of the Penn Central and six other northeastern railroads in 1970, railroading remains a troubled industry. Two of the country's largest railroads, the Milwaukee and the Rock Island, have gone bankrupt. The Rock Island has ceased operations and the Milwaukee is being reorganized and greatly reduced in size. The rate-of-return for the industry as a whole has been extremely low for many years, and even the most profitable railroads do not consistently earn rates-of-return comparable to other industries. The Federal Government has spent over $5 billion to acquire the properties of bankrupt railroads in the Northeast and to operate and improve the region's rail service under the Consolidated Rail Corporation (Conrail).

The fundamental problems that brought the railroads to this present state are unchanged, except in the regulatory area. The Staggers Rail Act of 1980 made many changes in Federal regulation of railroads' rates and services, but it is too early to tell how much the railroads will benefit from these changes. (See ch. 7.) Meanwhile, the railroads continue to face the problem of obsolete and deteriorated track, facilities, and equipment caused by inadequate earnings. This problem in turn results in poor service to shippers, encouraging them to seek other modes of transportation which further reduces railroad earnings. In addition, the recent economic downturn has further exacerbated the railroads' economic problems.

Regardless of their problems, the railroads remain an indispensable part of our transportation system, and their importance may grow as an efficient system for moving bulk commodities such as grain and coal. Additionally, the railroads seem to be the best way to carry hazardous materials such as chlorine and liquified natural gas.

Although the Congress has enacted a number of programs over the past 7 years to try to help the industry solve its problems, the Reagan administration has proposed a drastic reduction in these programs. The administration has proposed that the local rail service continuation program for low-traffic branch lines be terminated and reductions be made in the program for providing financing for rehabilitating railroads (which expires at the end of fiscal year 1982) and in railroad research and development. On the other hand, the administration's attempt to increase user charges for barge operators could help the railroads by reducing subsidies to one of their major competitors.

Conrail's financial fortunes have improved steadily in 1981, and its management says it may not need additional Federal funds, even those already appropriated to it. As a result of this improvement and other factors, legislation was enacted in August 1981 that will eventually terminate Federal involvement in Conrail. The legislation contains several provisions that should help improve Conrail's profitability; for example, it eliminates Conrail employees' lifetime job protection and makes it easier for Conrail to abandon unprofitable lines.

The August 1981 legislation also makes the Comptroller General of the United States a member of the United States Railway Association's (USRA's) Board of Directors. USRA is the Government corporation that monitors Conrail and provides Federal subsidies. It also helps determine how the Government's interest in Conrail will be disposed of.

The August 1981 legislation, especially the provision making the Comptroller General a member of USRA's Board of Directors, may make additional audit work at Conrail impractical because of the Comptroller General's apparent conflict of interest in both influencing and evaluating Conrail activities. The Comptroller General's Board activities will require, however, that we stay informed about Conrail issues.

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area of concern.

Studies in process

--The effectiveness of the Federal Railroad Administration's rail safety regulation and enforcement activities.

GAO reports

"Employee Protection Provisions of the Rail Act Need Change" (CED-80-16, Dec. 5, 1979)

"Conrail's 5-year Plan for Abandoning or Discontinuing Service Over Its Rail Lines" (CED-80-51, Jan. 15, 1980)

"How the Law To Prevent Discrimination and Encourage Minority Participation in Railroad Activities Is Being Implemented" (CED-80-55, Feb. 1, 1980)

"Conrail's Reduced Capital Program Could Jeopardize the Northeast Rail Freight System" (CED-80-56, Mar. 10, 1980)

"Conrail's Attempts To Control Labor Costs and Improve Its Labor Productivity" (CED-80-61, June 20, 1980)

"Federal Assistance To Rehabilitate Railroads Should Be Reassessed" (CED-80-90, June 27, 1980)

"Problems in Implementing Regulatory Accounting and Costing Systems for Railroads" (FGMSD-80-61, July 17, 1980)

"Examination of United States Railway Association's Financial Statements, Fiscal Year 1979" (CED-80-107, July 31, 1980)

Letter report to the President, USRA, on Management Control Issues Identified During Our Financial Audit of USRA (B-347492, July 16, 1980)

"There Is No Shortage of Freight Cars--Railroads Must Make Better Use of What They Have" (CED-81-2, Nov. 10, 1980)

"Keeping the Railroad Retirement Program on Track--Government and Railroads Should Clarify Roles and Responsibilties" (HRD-81-27, Mar. 9, 1981)

"Conrail Needs To Further Improve Inventory Control and Management" (CED-81-140, Sept. 4, 1981)

CHAPTER 5

IMPROVING MOTOR VEHICLE SAFETY AND EFFICIENCY

Americans' love affair with the automobile has provided our society with a lifestyle and freedom of movement enjoyed nowhere else in the world. The private automobile remains the mainstay in the movement of people. Automobiles and buses provide the overwhelming majority of passenger transportation. Motor vehicles, from the small pick-up truck and van to the huge, heavy-duty 18 wheeler, also carry a large portion of freight. The U.S. automobile industry is a major sector of the Nation's economy, and many industries support the manufacture, sale, operation, and maintenance of motor vehicles. Approximately one-fifth of all U.S. workers are employed by motor vehicle-related industries.

While providing social benefits, motor vehicles also impose substantial burdens and costs on individual owners and society as a whole. For example, purchase and maintenance costs are major items in the family budget. Inadequate and faulty automobile repair is a major consumer problem. Traffic accidents kill and maim thousands and account for a multibillion dollar national repair bill annually. Huge quantities of gasoline are consumed each day, necessitating greater reliance on foreign oil with devastating consequences to the Nation's international trade balance. Finally, tons of pollutants from engine emissions are spewed into the atmosphere each year. Consequently, these detrimental side effects of motor vehicles is vitally important to all Americans and is of continuing concern to the Congress.

A number of Federal programs deal with these detrimental side effects. DOT has the authority and responsibility to (1) improve safety on the Nation's highways, (2) improve automotive fuel economy, and (3) promote cost savings in owning and operating motor vehicles. The Environmental Protection Agency, under its responsibility to reduce air pollution, has the authority to regulate exhaust emissions from motor vehicles. The Federal Trade Commission (FTC), under its broad investigative and enforcement powers to stop unfair and deceptive acts and practices, addresses consumer complaints about automobile repair problems.

The current administration is shifting the Government's emphasis toward less Federal regulation, less Federal involvement, and less Federal expenditures. It has identified several items in the motor vehicle area which it believes warrant early and careful study: the 55 mph speed limit law, the passive restraint standard, the recall program, and fuel economy standards beyond 1985. Consequently, it is highly probable that many changes will be offered, debated, and modified in the coming

months that will dramatically affect the types of programs and the degree of Federal involvement in them.

STRATEGY FOR SELECTING LINES-OF-EFFORT

In this area-of-concern, we will cover those programs within DOT addressing safety, fuel economy, and cost savings of motor vehicle transportation. Environmental Protection Agency and FTC programs are covered under other issue areas and as such will not be discussed below.

For this planning period, we identified four lines-of-effort, placing priority on reviews of motor vehicle safety standards and consumer-related aspects of automobile ownership. We are not planning any major new work in the remaining two lines-of-effort--highway traffic safety and fuel economy programs--but will continue to monitor these activities in order to be prepared for possible congressional requests.

Effectiveness of Federal efforts to assist State and local government highway traffic safety programs

Traffic accidents continue to be a leading cause of accidental death in the United States. Traffic fatalities hit a peak in 1972 when over 56,000 deaths were recorded. A sharp decline in the number of deaths occurred when the 55 mph speed limit was enacted after the 1973 oil embargo, and deaths dropped to 44,500 by 1975. Unfortunately, the decline was temporary, and the number of deaths has again risen to over 50,000 in 1978, 1979, and 1980. For 1981, the death toll is estimated to be close to 52,000.

Increasing the safety of motor vehicle travel is being pursued in two major ways--regulating, controlling, or modifying driver behavior and regulating vehicle design or operating characteristics. Because States traditionally have had primary responsibility for driver programs, the Federal role is geared toward establishing basic minimum highway safety standards and financially assisting State and local governments to accelerate their own programs to meet Federal requirements. As for the vehicle itself, the Federal role is regulatory in nature with minimum Federal motor vehicle performance safety standards which all manufacturers are required to meet. (This latter role is the major focus of our second line-of-effort discussed on the following page.)

Because highway traffic safety is primarily the responsibility of the States, it was not until 1960 that the Congress took initial steps to involve the Federal Government by establishing a National Driver Register as an aid to State licensing

authorities. Six years later, the Congress took a major step toward Federal involvement by enacting the Highway Safety Act of 1966. The act called for a coordinated national effort to improve traffic by reducing traffic accidents and corresponding deaths and injuries. The overall effect of this act was to involve the Federal Government directly in the quality and quantity of State highway safety programs.

Eighteen Federal highway safety standards were established in an attempt to achieve uniformity among the States' highway safety operations and related programs. The States have not universally accepted all of the requirements of the Federal standards, and considerable differences still remain in the way individual States address safety issues. The most controversial areas are the 55 mph speed limit, the drinking-driver, and the nonuse of motorcycle helmets.

An auxiliary Federal matching grant program also was set up, primarily as a catalyst to assist the States in improving and upgrading their programs to meet Federal requirements. This program has grown from an annual appropriation of $2 million in 1967 to over $200 million in 1980 for a total of $1.5 billion. The Federal funds represent only a small portion (2 to 3 percent) of the total funds spent by State and local governments on safety activities. Over the years, considerable debate has centered around which specific safety activities the States should be focusing on.

This grant program has been targeted for dramatic reduction under the Reagan budget-cutting efforts. A revised fiscal year 1982 budget request was submitted which would reduce the program from $177.2 million to $77 million. A major aspect of this reduction was the elimination of funds for State enforcement of the national maximum speed limit.

A Federal research, development, and demonstration program was set up to help increase the effectiveness of State and local safety programs. This program was intended to explore, test, and demonstrate the usefulness or feasibility of new methods or techniques in addressing the safety issue. Over $300 million has been spent in this program since 1967.

How well Federal agencies manage these programs and the extent to which these programs carry out the congressional mandate and achieve measurable improvements in traffic safety are the major issues this line-of-effort addresses.

Because this area is undergoing major changes, we do not believe that narrowing the line-of-effort is currently feasible. We believe that the Federal Government's role in highway safety will continue to be of interest to the Congress, and that a broad line-of-effort recognizing this interest is most appropriate. Our primary objectives will be to maintain a presence in the area and to monitor efforts to change and improve DOT's

activities relating to driver-oriented safety. The Reagan administration will be proposing changes which will limit and/or refocus the Federal Government's involvement in this area, but additional attention probably will be given to improving the competence of drivers.

We plan to monitor the administration's recommended changes as they become known. We may also perform limited followup work in traffic safety programs we have previously reviewed, such as the drinking driver, the 55 mph speed limit, or periodic motor vehicle inspections. Once the administration's future goal and directions are finalized, we will be in a better position to select a highway safety standard or program to review. In the interim, we are not planning to begin any self-initiated assignments. However, we expect to receive congressional requests for work in this area.

We expect future work to address the following questions:

--What is the nature, focus, and purpose of the various driver-oriented programs?

--What priorities have Federal agencies set for individual programs, and do the States agree with these priorities? How are these priorities being addressed?

--How is the success or failure of a program measured, and are these measurements generally accepted within the safety community?

Effectiveness of Federal efforts to implement and enforce motor vehicle safety standards

The National Traffic and Motor Vehicle Safety Act of 1966 was enacted along with the Highway Safety Act to define the Federal Government's involvement in traffic safety. The former act focuses on the vehicle itself and calls for establishing minimum safety standards for motor vehicle performance or motor vehicle equipment performance. To date, over 50 individual standards have been established. Some standards apply to all types of vehicles while others apply only to certain types, such as passenger cars, or to certain equipment, such as the child restraint system and motorcycle helmets. The National Highway Traffic Safety Administration (NHTSA) issues these standards and is responsible for seeing that motor vehicle manufacturers comply with them.

In the past few years, there has been much controversy between the manufacturers and NHTSA over many of the standards and proposed standards. Manufacturers claim that the standards are imposing too great a financial burden on them, while NHTSA insists they are not too costly and must be included to upgrade safety of the vehicles.

Current emphasis appears to be directed toward a reversal of NHTSA's position, and new standards may be less frequent and less costly. We must be alert to the consequences of having the pendulum swing in the opposite direction. New problems are arising because of prolonged inflation and the emphasis on energy conservation. Trucks are becoming larger, automobiles smaller, and more buses and motorcycles are on the roads. These and other factors are going to present many unforeseen problems which will have to be addressed.

Our primary objectives under this line-of-effort will be to maintain a presence in this area, especially at this time of transition, and to improve NHTSA's operations in the area of vehicle safety. This area will apparently be deemphasized by the Reagan administration, and we need to keep abreast of changes that take place to evaluate their consequences. We plan to monitor the administration's specific recommended changes to this program as they become known. We will assess the potential impact of these changes based on our prior findings and recommendations as well as the results from our current work.

Our current work is intended to give us a better perspective and overview of emerging safety problems because of the changing mix in the size of vehicles on the road. With this knowledge, we will be in a better position to focus on specific areas in NHTSA's operations which would warrant further review. We expect our work to focus on the following questions:

--What new safety problems will be created with the changing vehicle fleet?

--Have proposed standards been evaluated for cost effectiveness?

--Are manufacturers complying with standards?

--How adequate is NHTSA's problem identification and analysis of alternatives for rulemaking?

--How adequate is NHTSA's program for evaluating standards?

Effectiveness of Federal efforts to implement vehicle fuel economy standards

The gasoline shortages in the early 1970's and the growing dependence on and escalating costs of foreign oil led to the enactment of the first major energy crisis legislation in 1975--the Energy Policy and Conservation Act. A key part of this legislation requires that automakers double the fuel efficiency of their new cars in 10 years. In 1975, the fleet of new cars was averaging between 13 and 14 mpg whereas by 1985, each company's corporate average fuel economy must be at least 27.5 mpg. Similar fuel economy standards established for the light

truck fleet were raised to 21 mpg by 1985 by administrative action. The automakers are currently predicting that they will achieve and surpass these fuel economy levels by 1985.

The major issue under this line-of-effort is whether or not more stringent Federal standards would be required in the post-1985 era to assure continued improvement in fuel economy. Considerable debate surrounds this question. On one hand, some believe the market place should be allowed to dictate the level of fuel efficiency of the vehicles since this has become a prime consideration in the purchase decision. On the other hand, some believe the market demand is too volatile to assure continued progress in the area.

Although gasoline is likely to become more expensive, most observers believe that motor vehicles will continue to be the dominant mode of urban transportation for the remainder of this century. Accordingly, the number of highway passenger miles and motor vehicles can be expected to increase. Moreover, the expected reductions in vehicle size and weight to save energy will also produce vehicles which are more susceptible to severe damage in accidents. The Congress is concerned about the apparent lack of coordination among Federal programs for automobile fuel conservation, safety, and air pollution emmission control.

Our prime objective under this line-of-effort is to maintain a presence in the area. We do not plan any major assignments within this planning period, although there is a possibility that we will receive congressional requests.

We will continue to monitor congressional and administration activities regarding fuel economy standards as well as the actions taken or proposed concerning the current financial crisis in the domestic automobile industry. This will allow us to respond quickly to any congressional inquiries or to apprise interested congressional committees.

Effectiveness of Federal safety program efforts to protect the economic and consumer interests of automobile owners and operators

Concerning its safety legislation, the Congress has also focused attention on the economic impact of owning an automobile and protecting the consumer. Part of the 1966 safety legislation required that a uniform quality grading system for tires be established. In the Motor Vehicle Information and Cost Saving Act of 1972, the Congress mandated bumper standards to reduce vehicle damages and odometer requirements to prohibit tampering with vehicle mileage figures; established demonstration projects to test the feasibility of diagnostic inspection procedures; and required a comprehensive Federal study of vehicle damage susceptibility, degree of crashworthiness, ease of diagnosis, and repairability.

The major issues in this line-of-effort involve the progress being made in developing meaningful consumer information regarding crashworthiness ratings for automobiles, the efficiency of bumper standards, and tire quality grading. This line-of-effort also involves how Federal automobile safety standards affect consumer insurance premiums.

For many years, Federal efforts to develop consumer ratings for passenger cars were unfruitful. In 1979, a new impetus was placed on these attempts through the initiation of a New Car Assessment Program. Under this program, new cars are crash-tested at speeds above those Federal safety standards now require. In December 1980, the results of these tests were published in a booklet for consumers entitled "The Car Book." The booklet received mixed reviews by the automakers, consumer groups, the academic world, and the public. The principle item being disputed is the booklet's simplistic "pass/fail" crash-worthiness presentations. Also, the Uniform Tire Quality Program went into effect on October 1, 1980, and is being administered by NHTSA. It is designed to help consumers buy the best tire for the money. Tires are rated on expected treadwear, traction, and temperature resistance. The tire industry has strenuously opposed this new program, which was first authorized in 1966.

A bumper standard has been set which will limit the damage to a vehicle in a low-speed collision--that is, up to 5 mph. The cost effectiveness of this standard has been questioned, and various congressional attempts have been made to lower that speed to a 2.5-mph limit. This standard has major implications for consumer automobile insurance premiums since the more durable bumper is primarily justified by its potential impact in reducing accident costs.

Our objective under this line-of-effort is to raise the Congress' awareness of the issues, concerns, and potential implications of proposed actions relating to Federal involvement in automotive consumer matters. We also want to contribute to the development of useful consumer information, particularly with regard to crashworthiness. We will monitor activities and proposals concerning the bumper standard and the Uniform Tire Quality Grading Program in order to be ready to respond to any congressional inquiries. Our work will emphasize possible reductions in insurance costs. We plan to address the following questions:

--Can legislative requirements be carried out effectively?

--Have Federal agencies proceeded in the best manner possible?

--How can agencies improve their operations?

--How valid are agency cost/benefit analyses?

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--Safety problems associated with smaller cars on today's roadways.

--Implications of higher automotive fuel economy standards.

GAO reports

Letter report to the Administrator, NHTSA, on NHTSA's section 403 highway safety administrative expenses (Sept. 20, 1979)

Letter report to the Chairman, Subcommittee on Oversight, House Committee on Ways and Means, on improvements needed in DOT's truck size and weight study (CED-80-41, Jan. 14, 1980)

"Policy Conflict-Energy, Environmental and Materials: Automotive Fuel-Economy Standards' Implications for Materials" (EMD-80-22, Feb. 5, 1980)

"The Government Should Buy More Fuel-Efficient Trucks and Truck Tractors" (EMD-80-27, Feb. 21, 1980)

Letter report to the Administrator, NHTSA, commenting on the agency's plan to evaluate the occupant crash protection standard (CED-80-70, Feb. 28, 1980)

"The Federal Government Should More Actively Promote Energy Conservation by Heavy Trucks" (EMD-80-40, Mar. 13, 1980)

"Highway Safety Research and Development--Better Management Can Make It More Useful" (CED-80-87, July 28, 1980)

"Highway Safety Research and Development--Better Management Can Make It More Useful" (CED-80-87A, July 28, 1980); supplement evaluating DOT's comments on our report

"Highway Safety Grant Program Achieves Limited Success" (CED-81-16, Oct. 15, 1980)

"Highway Safety Grant Program Achieves Limited Success" (CED-81-16, Oct. 15); supplement evaluating DOT's comments on our report

Letter report to the Administrator, NHTSA, commenting on the agency's management information systems (Jan. 16, 1981)

"Consumers Need More Reliable Automobile Fuel Economy Data" (CED-81-133, July 28, 1981)

CHAPTER 6

DEVELOPING AND MAINTAINING A SAFE, ADEQUATE, AND COST-EFFECTIVE NATIONAL HIGHWAY SYSTEM

Highways are and will continue to be an important element of the Nation's total transportation system. Nearly 90 percent of the intercity passenger miles traveled occurs on highways--more than eight times the volume of aviation, the next most frequently used mode. More than one-fourth of the ton-miles of intercity freight is shipped on the Nation's highways. Between 1970 and 1978, automobile and truck travel increased 31 and 62 percent, respectively.

More than half of all public transit passenger miles are by bus. DOT data shows that there are about 500,000 buses nationally and that the number will probably increase. Even in urban areas having subways or elevated trains, buses provide passenger-access to rail transit systems.

Americans have paid a high price for their highways. Over the last 60 years, Federal, State, and local governments, which share the responsibility for building, maintaining, and operating these highways, have spent more than $600 billion. Though sizable, this investment is small when compared with the cost of replacing the network--estimated to be from $1 trillion to $3 trillion. State and local governments have the primary responsibility for these highways, but the Federal Government provides aid for certain highways called Federal-aid highways, the best known of which is the Interstate Highway System. These highways comprise about one-fifth of the national highway mileage but account for nearly 80 percent of the vehicle miles traveled.

Spending for construction and maintenance of these roads has increased dramatically, but because of decreasing capital investment, inflation, and increased usage, these highways are wearing out faster than they are being repaired. In addition to declining highway conditions, the Nation is also faced with the ever-increasing cost of completing the Interstate Highway System.

The major issues relate to completing the Interstate Highway System and determining the appropriate Federal role in managing and maintaining the existing highway system. Additionally, because of the great demand for limited amounts of highway funds, more emphasis will need to be directed at ensuring the quality of highway construction and maintenance operations and the efficient and economic use of the limited funds available. FHwA and the States also will need to improve the capacity of the present highway system with operating changes which do not require major capital investments.

STRATEGY FOR SELECTING LINES-OF-EFFORT

We selected five lines-of-effort for possible attention during the upcoming planning period. Our first line-of-effort focuses on the effectiveness of Federal and State efforts to finance and preserve the highway system, emphasizing the currently controversial issue of highway maintenance and financing. Our second line-of-effort addresses the efficiency and economy of highway program administration and the adequacy of Federal controls over Federal funds being spent. Because of the current budget crisis, this area of possible cost savings appears to be particularly suitable for review at this time. The third line-of-effort examines the effects of not completing the Interstate Highway System, which is a subject of special interest to the Congress. Finally, our fourth and fifth lines-of-efforts identify areas in which we plan no self-initiated work but which we intend to monitor for possible congressional inquiries. They include the possible highway problems resulting from increased coal and agricultural traffic on the highways and the effectiveness of a number of special-purpose Federal highway funding programs.

Effectiveness of Federal and State efforts to finance and preserve the Nation's highways

Under the existing Federal highway program, the Federal Government provides financial aid to the States on a matching basis, primarily for building new highways and bridges and restoring and rehabilitating existing facilities. Generally, the States are responsible for maintaining and preserving these structures. Over the years, highway conditions have been reported to be declining, and construction and maintenance costs have been increasing rapidly, while the States have been experiencing increasing difficulties in raising sufficient revenue to preserve and build highways. The Congress and the public have expressed increasing concern over such issues as the condition of the highways, the ability and willingness of the States to finance needed preservation and maintenance, and the appropriate Federal role in highway financing and maintenance.

We intend to continue assessing the effectiveness of State and Federal efforts to finance and preserve the Nation's highways and provide the Congress information to aid in its deliberations on expected modifications of highway legislation.

How efficiently and economically are Federal highway programs being administered and controlled?

The need for greater highway expenditures has been increasing as the Nation's highways deteriorate and as inflaton takes its toll on available revenues. At the same time, revenue growth is slowing. The economic and political climate of the Nation is such that increased Government expenditures are extremely unpopular and program cuts are the order of the day. Accordingly, it is becoming increasingly important that existing programs be conducted in the most efficient and economical manner possible and that the greatest return be obtained for the highway dollars spent.

Our major objectives under this line-of-effort will be to (1) assess how efficiently and economically Federal highway programs are being carried out, (2) identify factors unnecessarily adding to costs, and (3) determine where changes can improve operational efficiency or reduce costs.

Our primary strategy will be to survey several Federal highway programs in a State(s) to identify specific programs warranting detailed investigation. We anticipate initiating several reviews on specific areas identified by the survey. In addition, indications exist that multiple responsibilities for building and maintaining roads on Federal lands has resulted in duplication of effort and unnecessary cost to the Government and varying degrees of service and safety to the motoring public. At this time, we expect that our work will address the following questions:

--Are Federal and State controls adequate to assure Federal funds are properly accounted for?

--Do Federal specifications and requirements promote efficiency and economy or do they add unnecessarily to the costs?

--What efforts are the States and the Federal Government undertaking to reduce highway costs?

Determining the effects of not completing the Interstate Highway System

Although most of the Interstate Highway System is open to traffic, a number of portions remain to be completed. The cost of completing these portions is very large and will increase as inflation drives up construction costs. To expedite completion of the System, the Congress has directed that any projects for which environmental impact statements have not been submitted by September 30, 1983, and for which construction contracts have not been met by 1986, will be removed from the System.

A number of these gaps are caught up in litigation and/or strong opposition by local or environmental groups and may not meet the congressionally imposed deadlines, and others are likely to be withdrawn by the States. To hold down Federal expenditures and further expedite completion, FHwA would like to reevaluate the uncompleted portions and delete those which are not essential. The major issue under this line-of-effort involves the effect these actions have on local and interstate transportation.

The major objective under this line-of-effort will be to provide information to the Congress on the status of system construction, the chances of meeting established deadlines, and the potential impact of not completing the System. We plan to address the following questions:

--What is the status of the System?

--Which portions of the System are unlikely to be completed by the deadline dates and why?

--What can be done to expedite completion?

--What alternative actions are the States planning if portions cannot be completed?

What highway problems are resulting from shifting agriculture and energy product shipments from rail to highways?

State highway officials are concerned that rail deregulation will result in increasing shipment by truck of heavy agricultural products and energy materials that were previously shipped by rail. These heavy and frequent loads may be shipped on roads not designed for such purposes and so aggravate the already serious problem of deteriorating highways.

We plan to collect background information and monitor development on this issue. Any congressional request work we would receive will probably address the following questions:

--Has there been a shift from rail to highway shipments? If so, what effect has it had on highway safety, condition, and congestion?

--What effect has it had on State and local financial needs?

--What actions are State, local, and Federal governments taking?

--What Federal action is needed?

Effectiveness of special or limited-purpose highway programs

Federal highway legislation provides for some 14 programs which are limited in geographical coverage and/or purpose. The major issues under this line-of-effort relate to whether these programs use Federal funds effectively.

Although there is continuing interest in these special programs, we believe they do not demand as high a priority as others, and further, the administration's highway bill would eliminate funding for these programs after 1981. The administration contends, however, that most of these activities could be carried out under regular Federal-aid programs. Accordingly, we plan no self-initiated work in this line-of-effort until the Congress acts on the legislation. Possible work in this area would address such questions as:

--Why is Federal funding necessary?

--What other funding sources are available?

--What progress has been made in meeting the programs' objectives?

--How effectively are the programs being administered?

CURRENT AND PAST GAO WORK

The following listing includes our completed and ongoing work in this area-of-concern.

Studies in process

--Federal specifications and requirements for bridge replacement and rehabilitation.

--Financial management of Federal highway funds.

--Tri-State Planning Commission's approval of Westway project.

--Management of lands acquired with Federal highway funds.

GAO reports

Letter report to the Administrator, FHwA, on the Interstate Resurfacing, Restoration, and Rehabilitation Program (CED-79-126, Oct. 31, 1979)

Letter report to Sam M. Gibbons, Chairman, Subcommittee on Oversight, House Committee Ways and Means, on DOT truck size and weight study (CED-80-41, Jan. 14, 1980)

Letter report to Representative Ted Weiss on West Side Highway Project Cost Estimate (CED-81-33, Dec. 4, 1980)

Letter report to the Administrator, FHwA, on the Federal Highway Administration's redesigning its accounting system to eliminate inefficient uses of computers and people (FGMSD-80-22, Jan. 11, 1980)

"Actions Needed To Increase Bicycle/Moped Use in the Federal Community" (EMD-81-41, Jan. 19, 1981)

"Deteriorating Highways and Lagging Revenues: A Need To Reassess the Federal Highway Program" (CED-81-42, Mar. 5, 1981)

"Better Targeting of Federal Funds Needed To Eliminate Unsafe Bridges" (CED-81-126, Aug. 11, 1981)

CHAPTER 7

DEREGULATION OF THE SURFACE TRANSPORTATION INDUSTRY

The Interstate Commerce Commission is an independent Federal agency with responsibility for economic regulation of the surface transportation industry. After many years of controversy and debate, the 96th Congress enacted legislation which will substantially reduce ICC's control over the trucking and railroad industries. The Motor Carrier Act of 1980 (Public Law 96-292) makes major changes in ICC's regulation of the trucking industry, eliminating many traditional controls over entry into the industry, routes served, and commodities carried. The Staggers Rail Act of 1980 (Public Law 96-448) gives the railroads greater pricing and operational flexibility by reducing ICC's control over railroad ratesetting, service abandonments, and contractual agreements with shippers. The Household Goods Transportation Act of 1980 (Public Law 96-454) removes most of ICC's control over the household goods moving industry. The provisions of the deregulation legislation will be phased in over several years and will require major changes in ICC's traditional practices and procedures.

Because of the potential economic impacts of deregulation on the transportation industry, shippers, and consumers, the Congress is closely monitoring the implementation of the deregulation process. The deregulation legislation includes requirements for periodic reports to the Congress by ICC and for regular congressional oversight hearings. At the request of the Senate Committee on Commerce, we reviewed the effects and implementation of the Motor Carrier Act of 1980 and testified at the committee's oversight hearings in June 1981.

The Congress is particularly concerned with the following issues:

--Are the effects of the deregulation legislation consistent with the intent of the Congress?

--Is ICC implementing the deregulation legislation economically, efficiently, and effectively and is the legislation consistent with the intent of the Congress?

--Are consumers, shippers, or the transportation industry experiencing problems which require corrective action by the Congress?

Monitoring and assessing the effects and implementation of deregulation legislation

The Congress is interested in how ICC deregulation is working out. This interest focuses primarily on the impacts of deregulation on consumers, shippers, and the transportation industry. The controversy which preceded enactment of the deregulation legislation grew out of the strong concern by these groups that their economic interests would be damaged, and this concern remains as deregulation gets underway. ICC continues to have extensive regulatory authority and many responsibilities, including implementing the deregulation statutes. The Congress wants to know how economically, efficiently, and effectively ICC is implementing the required changes and whether ICC's actions are consistent with the intent of the new laws. We anticipate a continuing requirement to assist the Congress in monitoring and assessing the deregulation process. Our efforts will be aimed at assisting the Congress in its periodic oversight hearings on deregulation.

Our work under this line-of-effort will attempt to support the Congress in discharging its oversight responsibilities for ICC's deregulation process. We will give primary attention to determining whether the effects and implementation of deregulation are consistent with congressional intent and whether unanticipated problems require corrective action by the Congress. Our strategy will be to work closely with the responsible congressional oversight committees, focusing our investigations on their needs for information and evaluations. We expect to address the following questions:

--What are the impacts and effects of deregulation on consumers, shippers, and the transportation industry? Are these consistent with the intent of the Congress?

--How economically, efficiently, and effectively is ICC implementing the deregulation legislation? Are ICC's actions consistent with the intent of the Congress?

--Are any unanticipated problems occurring which require corrective action by the Congress?

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--Effectiveness of ICC's implementation of rail deregulation.

--Effectiveness of ICC's implementation of household goods deregulation.

GAO reports

"ICC's Enforcement Program Can Be More Effective in Halting Violations and Preventing Their Recurrence" (CED-80-57, May 19, 1980)

"Problems in Implementing Regulatory Accounting and Costing Systems for Railroads" (FGMSD-80-61, July 17, 1980)

"There Is No Shortage of Freight Cars--Railroads Must Make Better Use of What They Have" (CED-81-2, Nov. 10, 1980)

"ICC Needs To Eliminate Improper Leasing Practices by Certified Motor Carriers" (CED-81-24, Dec. 31, 1980)

"Accounting Changes Needed in the Railroad Industry" (AFMD-81-26, Feb. 4, 1981)

"The Trucking Industry's Federal Paperwork Burden Should Be Reduced" (GGD-81-32, Mar. 3, 1981)

CHAPTER 8

MANAGING A SAFE AND EFFICIENT AVIATION SYSTEM

The Federal Aviation Administration is primarily responsible for promoting and developing a safe and efficient aviation system. To accomplish this, FAA conducts research; promulgates equipment and personnel standards; inspects and certifies airports, aircraft, and pilots; and operates a national air traffic control and navigation system for the orderly, safe, and efficient movement of aircraft through U.S. air space. In addition, FAA provides grants for airport planning and construction and partly finances air traffic and navigation facilities and equipment from aviation trust fund revenues received from taxes on passenger fares, freight bills, and fuel. FAA's budget request for fiscal year 1982 was $3.4 billion.

Efficient and effective Federal management in the aviation system and careful coordination of Federal economic and safety responsibilities for aviation present difficult and complex problems.

Most of the airports in the United States have a comfortable surplus of capacity. However, there is an airport capacity problem in areas of high population density. Years ago, airports were considered good neighbors and the solution would have been simple--merely build new ones or expand existing ones. Because of the use of land for other purposes and opposition from an environmental standpoint, additional airport capacity is now hard to come by in the areas where it is most needed.

Because of the projected increase in traffic and because of aging equipment, the 1980's will be extremely trying times for FAA as it attempts to maintain a safe and effective air traffic control system. The computers used in this system are obsolete and have experienced an increasing number of failures during peak workloads, resulting in traffic delays and requiring controllers to rely on manual systems. FAA plans to replace the system, but this will not happen until at least 1987.

Of growing concern to the Congress is whether the general aviation safety record can be improved. General aviation, which has many more accidents and more fatalities than air carriers, improved its safety record through 1977, but in 1978 the accident rate increased somewhat. In 1979 and 1980 the accident rates decreased, consistent with the downward trend since 1970. Pleasure flying, a category of general aviation, accounted for about 30 percent of the total general aviation hours flown but had about one-half of the total number of accidents and about 60 percent of the fatal accidents.

Like many other businesses, airlines continue to be plagued by rising costs, primarily labor and fuel. Many of FAA's safety and noise standards and regulations require equipment additions or modifications to the carriers' fleets, changes which can be costly. Delays encountered in the air traffic system are also costly to the airlines--over $800 million in 1977, plus 700 million gallons of fuel. Without appropriate increases in the capacity of the major airports, delays are expected to increase substantially in future years. Low-cost capital alternatives to physically expanding airports, such as peak-hour pricing and quotas at airports, might relieve some aircraft congestion and delays. These issues were addressed in our September 1979 report to the Congress.

In addition to its other responsibilities, FAA manages and operates Washington National and Dulles International Airports. From time to time questions have been raised about the effectiveness of FAA's management of these airports. In September 1980, the Congress blocked FAA's efforts to put a "cap" on activities at National Airport.

Historically, the Civil Aeronautics Board (CAB) was responsible for economic regulation of the commercial air carrier industry--authorizing entry into the industry, selecting intercity routes, and controlling the establishment of passenger fares and cargo rates. All this has now changed. Legislation deregulating domestic air cargo operations (Public Law 95-163) was enacted in November 1977, and CAB now has only limited control over the air cargo industry. Although some shippers have complained about declines in service, increased freight rates, and decreased carrier liability limits, overall reaction to deregulation of the air cargo industry seems favorable.

Legislation to deregulate the domestic airline passenger industry was enacted in October 1979 (Public Law 95-504). The legislation allows the forces of competition in the marketplace to determine the price, quality, and variety of air service for the air transportation system. The deregulation is to take place in scheduled phases with no more CAB regulation of domestic route matters after December 31, 1981. CAB will no longer regulate domestic passenger fares after January 1, 1983, and will cease to exist as an agency on January 1, 1985. However, legislation has been introduced in the 97th Congress (H.R. 1426) to terminate CAB as early as September 30, 1982.

STRATEGY FOR SELECTING LINES-OF-EFFORT

We plan to address the issues in the aviation area-of-concern by doing work in three lines-of-effort. For deregulation, we plan to continue to monitor activities and changes in the airline industry and to identify matters of importance and concern to the Congress. The second line-of-effort deals with past and future efforts to increase system capacity. We plan to examine the

effectiveness of FAA's past and planned efforts to increase this capacity. The third line-of-effort will deal with FAA's economy, effectiveness, and efficiency in managing activities and facilities.

Overall, we are concentrating on matters where economical, effective, and efficient management can be improved and which help achieve budget and expenditure reductions and control. We believe that improvements in economy, efficiency, and effectiveness will improve safety.

What are the problems and what has been the effect of airline deregulation?

Legislation providing for a phased deregulation of the airline industry was passed in 1978. Under this legislation, CAB would cease to exist on January 1, 1985. We expect that the Congress will continue to want information about changes in the price, quality, and variety of service of both commuter and certified air carriers as deregulation proceeds through the planned phases. As deregulation has proceeded, for example, there has been a significant increase in the number of commuter airlines providing service to small- and medium-sized communities. Also, because of the varying profitability of individual markets nationwide, service has increased to some communities and has been lost at others. These changes affect the subsidy program and the maintenance of essential service. Increased commuter service makes it important for us to identify and analyze any issues and problems that the commuter industry has.

Another area of congressional interest is the effects of deregulation on the financial health of the aviation industry. This is a complex issue to evaluate. In recent months, inflation, recession, and rising fuel costs have created serious economic problems for the airlines and impacted on the industry's performance. The relationship between these impacts and deregulation is unclear.

Our objective under this line-of-effort will be to continue to identify issues, concerns, and problems for the Congress and CAB. The information we obtain may help to establish the need for action by the Congress in changing legislation or by CAB where administrative, operational, or program action is appropriate. Our purpose will be to determine the changes and the effects of changes that have occurred since deregulation as they relate to the price, quality, and variety of services of air carrier and commuters; issues and problems of air carrier and commuters; and the needs and changes in subsidy programs and essential service to small- and medium-sized communities. We plan to address the following questions:

--How has deregulation affected the airline industry?

--What changes in essential air services provided to small- and medium-sized communities have occurred since deregulation?

--Are there any changes needed in the subsidy program for providing essential air service to small- and medium-sized communities?

--Are there problems or issues in the commuter airline industry that the Congress or CAB should address?

--Is CAB's sunset planning adequate?

How effective are Federal efforts to meet future airport capacity needs?

The Airport and Airway System Development Act of 1970 was the beginning of significant Federal efforts intended to establish a nationwide system of public airports adequate to meet present and future civil aviation needs. Obligational authority for this program expired September 30, 1980. After 10 years and $3 billion spent under the program, traffic delays at airports are still costing airlines and passengers more than $500 million a year. Seventy-five percent of these delays occur at the 25 busiest airports. The Congress is considering legislation to extend program funding, but no agreement exists between the House and the Senate regarding the emphasis and direction the program should take through the 1980's. Our work under this line-of-effort will focus on what has been done in the past, what the effort has accomplished, and the long-range planning being done at the Federal level.

The objective of this line-of-effort will be to assess the effectiveness of Federal efforts to plan for and develop airport capacity to meet future needs. The result of our assessment will be to provide the Congress and FAA recommendations on planning and programs necessary to address airport capacity problems. We expect that two of our ongoing assignments will answer the following questions:

--Does FAA have a long-range plan and is the plan being followed?

--Has airport capacity increased because of FAA programs?

--Should the development program include all major airports?

--Should the emphasis be to plan and develop additional capacity or to improve accessibility, reliability, and maintenance of existing airports?

Is FAA managing its activities and facilities economically, effectively, and efficiently

Each agency is responsible for managing Federal resources--money, people, and facilities--economically, effectively, and efficiently. This responsibility has greater significance during the upcoming planning period because of the current efforts to reduce Federal spending and balance the budget. To become more economical, effective, and efficient, FAA must find out where and how improvements can be made, change procedures or take action to achieve improvements, and evaluate results to assure that the changes actually resulted in improvements. FAA manages a variety of programs and facilities, including two of the Nation's major airports, hundreds of training programs, and research and development activities relating to unique and complex technology. Our work under this line-of-effort will analyze FAA's management of selected activities and facilities; evaluate their economy, effectiveness, and efficiency; and identify to the Congress and to FAA areas where improvements can be achieved. As another measurement of management, we plan to examine how FAA has dealt with our past recommendations.

The objective of this line-of-effort is to assess the economy, effectiveness, and efficiency of FAA's management of selected activities and facilities and make recommendations for their improvement.

We hope to identify for the Congress and FAA those management issues involving the operation of National and Dulles Airports that need attention, as well as concerns relating to management of research and development programs and training programs. Some of the questions we plan to address include:

--Is continued Federal ownership and management of National and Dulles Airports the best alternative available?

--Is FAA managing National and Dulles Airports economically, effectively, and efficiently?

--Is FAA managing its training programs economically, effectively, and efficiently?

--Is FAA managing its research and development activities economically, effectively, and efficiently?

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--Long-range airport planning: its adequacy and effectiveness.

--Airport development grants, activities, accomplishments, and issues.

--Management of National and Dulles Airports.

GAO reports

Letter report to the Chairman, CAB, on the need to expand CAB's sunset planning (CED-80-46, Jan. 4, 1980)

"How To Improve the Federal Aviation Administration's Ability To Deal with Safety Hazards" (CED-80-66, Feb. 29, 1980)

"FAA Has Not Gone Far Enough with Improvements to Its Planning and Acquisition Processes" (PSAD-80-42, June 4, 1980)

"Misuse of Airport Land Acquired Through Federal Assistance" (LCD-80-84, Aug. 13, 1980)

"The Changing Airline Industry: A Status Report Through 1979" (CED-80-143, Sept. 12, 1980)

Letter report to Senator David L. Boren on FAA's management of two grants to the Tulsa International Airport (CED-81-8, Nov. 3, 1980)

"FAA Is Making Air Traffic Control Procedures at New Orleans International Airport More Efficient" (CED-81-64, Feb. 27, 1981)

"FAA Misses Opportunities To Discontinue or Reduce Operating Hours of Some Airport Traffic Control Towers" (CED-81-100, June 1, 1981)

"The Changing Airline Industry: A Status Report Through 1980" (CED-81-103, June 1, 1981)

"FAA Can Improve the Operation of Its General Aviation District Offices" (CED-81-114, June 29, 1981)

"Controller Staffing and Training at Four FAA Air Traffic Control Facilities" (CED-81-127, July 9, 1981)

CHAPTER 9

INTERCITY RAIL PASSENGER SERVICE: HOW MUCH DO WE NEED AND AT WHAT PRICE?

In enacting the October 1970 Rail Passenger Service Act, the Congress hoped to halt the decline of intercity passenger train service and to retain and revitalize a realistic national network of rail passenger routes. The resulting intercity rail passenger service operated by the quasi-public National Railroad Passenger Corporation (Amtrak) recently celebrated its 10th anniversary, but its prospects for future anniversaries are cloudy.

The Federal Government has spent about $7 billion on Amtrak, including purchasing and improving the Northeast Corridor, and seems to have achieved many of the improvements originally intended. But, Amtrak's annual subsidy needs have grown enormously, and the Congress reluctantly has recognized what we said years ago that, contrary to its original goal, Amtrak will never earn a profit.

Amtrak's need for large Federal subsidies and the public's preference for other modes of travel (Amtrak carries less than 1 percent of the intercity travelers) make Amtrak a prime target for President Reagan's budget cutters. The administration persuaded the Congress to reduce Amtrak's fiscal year 1982 funding authorization to $735 million from the nearly $1 billion requested and will probably try to reduce Amtrak's subsidy even more. Amtrak has managed to retain nearly all of its nationwide system, however, and there seems to be substantial congressional support for continuing a nationwide system.

STRATEGY FOR SELECTING LINES-OF-EFFORT

The uncertainty about Amtrak's future and the nature of future congressional concerns about intercity rail passenger transportation requires us to be very flexible in planning our work in this area. But, we must plan work in this area in addition to our internal needs and requirements. A 1974 amendment to the Rail Passenger Service Act (Public Law 93-496) requires us to conduct annual performance (management efficiency-type) audits of Amtrak's activities and transactions. After the cognizant congressional committees have completed their deliberations on Amtrak's future, we will be consulting with them to determine what our work pursuant to this provision should cover. We presently see our work over the near future as addressing three lines-of-effort:

--How effective is Amtrak's management in minimizing its subsidy needs and maximizing its service?

--What are the transportation effects of Amtrak's budget and service cutbacks?

--What is the progress and management performance of the Northeast Corridor Improvement Project?

If Amtrak survives the budget cuts, and we expect that it will but with a substantially reduced system, the Congress will still be interested in minimizing the Government's financial burden and providing the best passenger train service possible for the money. Accordingly, we plan to emphasize the line-of-effort dealing with this issue. We do not plan substantial work in the line-of-effort concerning the transportation effects of the cutbacks unless a high level of congressional and/or public interest develops or a serious move develops to restore several routes previously terminated. We also do not plan to start any new self-initiated work in the line-of-effort on the Northeast Corridor Improvement Project but may receive congressional requests in this area.

If, as proposed, Amtrak takes over Conrail's commuter operations, we might need to schedule additional work to cover this activity.

How effective is Amtrak's management in minimizing its subsidy needs and maximizing its services?

Our primary objective of finding ways of saving money will probably not change as long as we continue doing work in Amtrak. For this line-of-effort, our basic objective is being broadened slightly to also include other ways of reducing Amtrak's need for Federal funds, such as increasing its revenues. We are also including another facet of managing Amtrak: providing the best service possible with the funds available. The issues and other factors in the remaining work are described below.

(1) After the Congress sets Amtrak's funding level for fiscal year 1982, our initial strategy will be to review a subject area that will be of interest to the cognizant congressional committees for the fiscal year 1982 authorization/appropriation process in early 1982. This will be a relatively short review so that we can complete it in time for the authorization/appropriation process. A possible area of review would be Amtrak's planned spending for new equipment, since existing equipment will be released by the route cutbacks to take place in October 1981.

(2) If, as expected, Amtrak continues to reduce its system, possibly to a series of shorter, unconnected lines, we may review the efficiency with which Amtrak makes the transition.

In addition to possibly having excess equipment, Amtrak will need to restructure its reservation system, its personnel, and its management.

(3) Amtrak's Northeast Corridor is generally regarded as the region where good passenger rail service makes sense and has the best chance of being financially viable. Financial viability has been elusive in the Northeast and passenger traffic recently has declined. The $2 billion Northeast Corridor Improvement Project to reinstitute high-speed rail service in the Northeast may have disrupted Amtrak operations and caused some loss of passengers, but other factors related to rail passenger service's basic viability may be developing.

(4) As the Amtrak situation clarifies, broader reviews of its efficiency and economy may be appropriate, concentrating on the operating areas that are the most costly.

(5) Amtrak has had serious problems with its service quality over the years and has invested billions of dollars in new and refurbished equipment, facilities, and other activities to improve its service. The unanswered question is: How effective has this investment been in improving service and, more importantly, have revenue increases resulted that have reduced subsidy needs?

What are the transportation effects of Amtrak's budget and service cutbacks?

If we find it advisable to conduct work under this line-of-effort during the near future, our objectives will be to assess the impacts and implications of reductions in Amtrak's routes and services. An important difference from previous periods is that the cutbacks will probably be much more extensive in 1981 than they were in 1980. Our interests will be limited to factors clearly related to transportation and will deal with social and economic issues only to the extent that transportation issues are involved.

The political debate is just now beginning on this issue, and we have no way of knowing whether a high level of congressional and/or public interest will continue after the changes are implemented. Our posture is to be prepared to address this issue if we receive a congressional request, but we will not undertake any self-initiated work.

What is the progress and management performance of the Northeast Corridor Improvement Project?

The objective of this line-of-effort is to assess the progress and management performance of the Northeast Corridor Improvement Project--a project to improve the rail system between Washington, D.C., and Boston, Massachusetts.

We do not plan any major new work under this line-of-effort during the near future. However, congressional interest in this project has been very high in the past and we could receive requests for additonal work.

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--Amtrak's equipment status and plans and related budgeting impacts.

GAO reports

"Amtrak's Inventory and Property Controls Need Strengthening" (CED-80-13, Nov. 29, 1979)

"Alternatives for Eliminating Amtrak's Debt to the Government" (PAD-80-45, Mar. 28, 1980)

"How Much Should Amtrak Be Reimbursed for Railroad Employees Using Passes To Ride Its Trains?" (CED-80-83, Mar. 28, 1980)

"Impact of Work Cutbacks on Northeast Corridor Improvement Project" (CED-81-23, Oct. 31, 1980)

"Further Improvements Are Needed in Amtrak's Passenger Service Contracts, But They Won't Come Easily" (CED-81-35, Jan. 7, 1981)

"The Federal Investment in Amtrak's Assets Should Be Secured" (PAD-81-32, Mar. 3, 1981)

"Amtrak's Productivity on Track Rehabilitation Is Lower Than Other Railroads'--Precise Comparison Not Feasible" (CED-81-60, Mar. 13, 1981)

"Keeping the Railroad Retirement Program on Track--Government and Railroads Should Clarify Roles and Responsibilities" (HRD-81-27, Mar. 9, 1981)

CHAPTER 10

DEVELOPING AN ADEQUATE AND COST EFFECTIVE MARITIME INDUSTRY AND OCEAN TRANSPORTATION SYSTEM

The Maritime Administration and the Federal Maritime Commission are the two primary Federal agencies involved in the U.S. maritime industry. The Maritime Administration is responsible for subsidies and other programs to promote a strong U.S. merchant marine for the waterborne carriage of foreign and domestic commerce and to serve as an aid to national defense. The Federal Maritime Commission is responsible for economic regulation of water carriers engaged in the foreign and domestic commerce of the United States.

The United States emerged from World War II with the world's largest merchant marine. In the immediate postwar years, this fleet handled more than half of the Nation's foreign trade tonnage, transporting 58 percent of the U.S. import/export cargoes in 1947. With each successive year, foreign-flag fleets increasingly carried more of our foreign commerce, reducing U.S.-flag participation to 42 percent in 1950, 23 percent in 1955, 11 percent in 1960, and by 1969, 4.5 percent--significantly below the goal of the Merchant Marine Act of 1936, generally considered as 50 percent.

The Congress, recognizing that major changes were needed to revitalize the U.S. merchant marine, enacted the Merchant Marine Act of 1970. The overall goals of this act, the most comprehensive revision of national maritime laws in over three decades, provided for increasing the share of U.S. oceanborne foreign trade carried by U.S. flag ships and the expansion of the U.S. shipbuilding industry, while reducing the reliance of the maritime industry on Federal subsidies. These goals, despite Maritime Administration outlays of $4.9 billion in direct subsidies during fiscal years 1971-80, have not been met.

Events of the 1970's added new dimensions and greater complexity to the Congress' deliberations over national maritime policy. These included the increased Soviet presence in world shipping at apparently below cost rates; the emergence of new and sophisticated intermodal shipping concepts; more technologically advanced and costly ships; the rapidly rising cost of fuel, which puts the generally steam turbine driven U.S. flag fleet at a disadvantage compared with the more efficient diesel powered vessels of most foreign flag fleets; and the cutrate pricing of foreign shipyards.

The oil embargo of 1973 plunged the world shipbuilding industry into a deep depression. Until the oil embargo, demand for oil had been increasing rapidly for many years, outrunning the available supply of tankers to carry it. This shortage

of ships produced high shipping rates and great profits for tanker operators. Operators intent on capitalizing on this situation, placed orders for new vessels. In response, the world's shipyards greatly increased their capacities. However, with the onset of the oil embargo, many contracts for new ships were canceled and the large number of anticipated contracts never materialized, plunging the overbuilt world shipbuilding industry into depression.

The U.S. shipbuilding industry, notwithstanding its subsidies and contracts for domestic trade vessels, felt the impact. Many of the ships expected to result from the Merchant Marine Act of 1970 were never built. In addition, as foreign shipyards lowered their prices--some below cost--the differential between U.S. and foreign ship prices at times exceeded 50 percent, the legal maximum construction subsidy rate, which further reduced new federally subsidized ship contracting. In addition, anticipated Navy contracts never materialized.

During 1978-79, an interagency task force within the executive branch reviewed Federal maritime policies. The task force concluded that (1) Federal regulation of the ocean shipping industry deserved prompt review by the Congress, (2) programs to encourage construction of dry bulk vessels needed to be overhauled, (3) national policies favoring open ports and free competition for cargo should be reaffirmed, and (4) the Federal Government itself should address maritime problems in a more unified and coherent way. Recent statements by the Maritime Administration and Navy officials indicate that the U.S.-flag merchant marine is minimally adequate to meet U.S. mobilization needs in a defense crisis. The U.S. shipyard and mobilization base is barely adequate for national defense purposes and has experienced declining orders for new construction since the 1973 oil embargo. However, the shipyard community is encouraged over the prospect of increased Navy spending for new vessels.

During the past several years, numerous bills addressing both promotional and regulatory issues have been introduced in the Congress to revitalize and strengthen the U.S. maritime industry. Of those that were passed, the two most significant were the Ocean Shipping Act of 1978, which requires the development of new Federal Maritime Commission regulatory procedures for eliminating the threat of predatory ratecutting by foreign state-controlled carriers, and the Shipping Act amendments of 1979, which strengthen various provisions of law prohibiting rebate practices in U.S. foreign trades. Probably the most significant bill considered in the 96th Congress was an omnibus bill introduced by the Chairman and the Ranking Minority Member, House Committee on Merchant Marine and Fisheries. This bill addressed a number of promotional and regulatory issues, including the lack of a single, consistent, and effective national maritime policy; the failure of the Secretaries of Commerce and Navy to coordinate for providing a merchant fleet for national defense needs; and the need for coordination among all Federal agencies

concerned with maritime policies and programs. This bill was voted out of the committee, but because of changes made to the bill during review by the House Ways and Means and the Judiciary (monopolies subcommittee) Committees, it never reached the House floor.

In the 97th Congress, the Committee on Merchant Marine and Fisheries has indicated that it will propose narrower legislation rather than reviving the omnibus bill. Legislation to provide tax incentives for the maritime industry and create a national maritime policy appears likely to receive committee attention. In addition, legislation was passed which transferred the Maritime Administration from the Department of Commerce to DOT.

The President has stressed the need for a strong U.S. maritime industry. In March 1981, the new administration began a review of national maritime policies. The review will include an examination of alternatives to existing policies and consideration of both the commercial and defense aspects of the U.S. maritime industry. No timetable has been set for conducting and completing this review.

The March 10, 1981, Reagan administration budget provides no new 1982 appropriations for construction differential subsidies for the U.S. shipbuilding industry. Instead, appropriations (1981 and previous no year funds) available for 1981 totaling $37 million are being deferred until 1982. Currently, the administration is projecting only $100 million per year for 1983 and 1984. However, the Reagan budget proposes building about 30 new Navy ships per year whereas the 1982 Carter budget called for 16, a major increase in aid for U.S. shipyards.

The future prospects for U.S.-flag carriers do not appear any brighter for the 1980's than they were in the 1970's. The U.S.-flag fleet entered the 1970's carrying about 4.6 percent of total U.S. oceanborne foreign commercial cargo and, despite the passage of the Merchant Marine Act of 1970, ended the 1970's carrying about the same percentage.

Many of the same problems that plagued U.S.-flag carriers in the 1970's, including overtonnage on U.S. trade routes; illegal rebating; low-cost foreign competition; cutrate, State-controlled carriers; high fuel costs; and restrictive Federal operating subsidy requirements, continue. The effectiveness of the Ocean Shipping Act of 1978 and the Shipping Act amendments of 1979 in controlling ratecutting and rebating practices is questionable. The United States with its large amount of oceanborne cargoes and its free trade philosophy is the most accessible and lucrative market for the world's ocean carriers. This scenario offers limited hope to U.S.-flag carriers.

Trends to look for in the 1980's include the disappearance, through mergers or bankruptcies, of some of the subsidized

carriers. Also, the Congress might reduce the restrictions on Federal operating subsidies, possibly allowing U.S. carriers to build their vessels abroad and still get operating subsidies. (H.R. 2526, the Maritime Administration's fiscal 1982 authorization bill, contains a provision to provide this under certain circumstances.) The foreign building alternative will become more attractive as the Navy increases its vessel procurement and as the Reagan administration cuts back construction subsidy funds. A promising trend for U.S.-flag carriers is the "protectionism mood" of many countries, which will most likely result in increasing use of bilateral agreements and the acceptance by many countries of the United Nations Conference on Trade and Development Code for Liner Conduct. This proposal reserves 80 percent of a country's general cargo or liner trade for its own fleet and that of its trading partners (40/40). Other national carriers are eligible to carry the remaining 20 percent. The protectionism mood is carrying over to proposals for similar cargo splitting for the bulk trade which is the segment of the U.S.-flag fleet most in need of revitalization. Because many believe the United Nations code violates U.S. free trade principles, the United States has not yet decided whether to become a signatory to the code.

If the Reagan administration's proposals for increased naval shipbuilding are enacted by the Congress, this will have a major impact on the economic condition of the Nation's shipbuilding industry. Recent Navy testimony indicated that a range of from 15 to 19 private shipyards should be maintained for national security purposes. Even without much federally subsidized civilian ship construction, a 30 ship/year Navy program and a normal domestic fleet demand, including oil industry servicing vessels, should keep the number of active shipyards at about the 25-yard level.

STRATEGY FOR SELECTING LINES-OF-EFFORT

Because U.S. maritime promotional and regulatory policies are closely interrelated, we conclude that a single line-of-effort focusing on the overall efficiency and effectiveness of the Federal role is most desirable.

How efficient and effective are Federal efforts in providing for a U.S. maritime industry consistent with national objectives?

The Federal Government through various direct and indirect subsidies has worked to promote the growth and prosperity of the U.S. maritime industry. These efforts include the Maritime Administration's operating differential subsidy ($333 million in 1981), construction differential subsidy ($216 million in 1981), and financing guarantee programs (about $8 billion in outstanding commitments) and several

cargo preference laws which reserve certain Government cargoes for U.S.-flag vessels. Despite these efforts, the U.S. maritime industry remains heavily dependent on Government support. Only one U.S.-flag liner operator remains unsubsidized while three of the eight subsidized carriers are considered financially weak, even though the Federal Government picks up approximately 75 percent of wage costs. Although the U.S.-flag tanker fleet has been expanding, it carries only about 4 percent of our liquid imports. The U.S.-flag dry bulk fleet is almost nonexistent, as is the domestic general cargo fleet. In addition, there is concern that the 50-percent construction subsidy is no longer adequate to compensate U.S.-flag operators for their higher costs of building in U.S. shipyards.

Our objective in performing work under this line-of-effort will be to provide the Congress and the Maritime Administration with answers to the following questions:

--What are the U.S. maritime goals and are they achievable?

--What changes are necessary in order for the United States to achieve its maritime goals?

--What Federal efforts are needed to strengthen or maintain a viable maritime industry?

--How can the cost of Federal efforts to promote the U.S. maritime industry be reduced without a negative effect on the industry?

CURRENT AND PAST GAO WORK

The following listing includes our ongoing and completed work in this area-of-concern.

Studies in process

--The Maritime Administration's Operating Differential Subsidy Program.

--An economic analysis of the international liner shipping industry.

GAO reports

"American Seaports: Changes Affecting Operations and Development" (CED-80-8, Nov. 16, 1979)

"Essential Management Functions at the Federal Maritime Commission Are Not Being Performed" (CED-80-20, Jan. 18, 1980)

"The Coast Guard--Limited Resources Curtail Ability To Meet Responsibilities" (CED-80-76, Apr. 3, 1980)

CHAPTER 11

LONG-RANGE TRENDS: ENERGY, ENVIRONMENTAL QUALITY, AND NEW TECHNOLOGY

During the remainder of the 1980's and beyond, the U.S. transportation system will be strongly influenced by long-term trends and developments in energy, the environment, and new technology. The following discussion examines possible future interactions between these three issues and transportation. Future trends relating to specific subjects such as aviation or mass transit are also discussed in the chapters of the plan dealing with those areas-of-concern.

ENERGY

The energy crisis is likely to be one of the most important factors shaping the future development of the U.S. transportation system. The close relationship between transportation and energy was dramatically illustrated by the gasoline shortages in the spring and summer of 1979. During the subsequent rapid escalation of gasoline prices, millions of American motorists received a painful lesson on the economic relationships between energy and transportation. The transportation system is a vital economic sector for which adequate energy supplies at economically efficient prices must be assured, a prime target for national energy conservation efforts and a major element in the energy materials distribution system.

As the 1979 fuel shortages demonstrated, the energy supply is an essential factor of transportation production: Without energy, the transportation system cannot function. Even after the immediate shortages were past, the effects of substantially increased fuel costs continued to be felt throughout the transportation system. Consumer demand for large automobiles dropped sharply and apparently for good, contributing to the severe economic problems that now plague the U.S. automobile industry. The average price of jet fuel soared from 12 cents per gallon before the first oil embargo in 1973 to more than $1 per gallon in 1981. As a result, the airline industry's 1980 fuel bill was nearly $10 billion, undoubtedly contributing to the industry's $200 million loss in 1980. Increased fuel costs have also placed severe strains on the trucking and railroad industries by forcing major rate increases and reducing industry profits. For the foreseeable future, energy prices are likely to continue to exert powerful and possibly destructive effects on the economic stability and profitability of the transportation sector.

Because transportation is so dependent on energy and because the transport sector is such a major user of energy

resources, transportation will be a primary target of future national efforts to conserve energy. The U.S. transportation system is one of the Nation's largest energy consumers, accounting for 33 percent of end-use energy consumption and 70 percent of distributed petroleum products consumption. The automobile alone accounts for approximately 40 percent of U.S. petroleum consumption, and reducing automobile energy consumption is a major goal of Federal energy conservation plans. Future energy conservation efforts are likely to place particular emphasis on increased use of enegry-efficient transportation modes--mass transit, railroads, and inland waterways--and more efficient use of existing modes, such as vanpooling and carpooling.

Transportation also plays a vital role in distributing energy materials throughout the economy. Railroads, highways, inland waterways, supertankers, and liquid gas and slurry pipelines form a complex transportation network through which coal, petroleum, and natural gas are distributed to refineries, industries, utilities, and consumers. Economic inefficiencies in the energy transportation network are reflected in the delivered price of energy materials and thus in the price of energy as a factor of production. The future productivity of the U.S. economy will be strongly influenced by the efficiency with which we plan and operate the energy transportation network.

Toward the end of the decade, we expect that increased fuel costs will cause preferences for single-passenger, long-distance commuting by private automobile to change. Greater reliance on carpools, a shift toward shorter commuting trips, and increased commuting by public transit seem likely. Also likely is a change in the preferred location of middle-income residential areas from the outer suburbs to the inner suburbs and central city. Improved financial viability for public transit systems may also result as fuel costs make private automobile travel less attractive. Bicycle travel also may increase, particularly where protected bike paths are provided.

On the other hand, the importance of the automobile as the primary mode of urban travel appears likely to continue for some time, though cars will become smaller and more fuel efficient. Some transportation experts have concluded that the private automobile will become obsolete because of the unavailability of petroleum-based fuels. But alternative propulsion technologies have been available for many years. Electric-powered motor vehicles have been in operation for more than 50 years, and combustion engines burning coal-derived fuels were used extensively during World War II to propel trucks and automobiles. As the price of petroleum fuels continue to rise, use of these alternative technologies will become increasingly economically feasible.

It is unlikely that the energy crisis will radically change the modal characteristics of intercity passenger travel during the next 10 to 15 years. From the standpoint of energy

efficiency, a fully loaded passenger automobile compares favorably with other modes of intercity travel. Rising energy costs will foster more efficient use of existing modes, such as the recently introduced trans-Atlantic air shuttle. Some shifts of air and automobile passenger traffic to intercity buses and passenger trains are possible and probable if very large energy price increases or prolonged fuel shortages occur--Amtrak's ridership increased dramatically during the 1979 fuel shortage.

The energy crisis will also have major impacts on freight transportation. For the freight railroads, the expected increases in demand for coal transportation will create problems but also great opportunities. Massive requirements for new equipment and facilities and for modernization of the existing system will strain the railroads' financial and management capabilities. At the same time, the assurance of a growing and profitable market for rail freight services may be the financial medicine needed to cure the railroad industry's economic malaise. Coal slurry pipelines may capture a portion of this traffic, but serious questions exist concerning the potential economic and environmental impacts of this mode--especially its effects on the railroad industry and on western water supplies.

The energy crisis may also result in increased economic viability and public support for the inland waterway industry. Because the waterways are very energy efficient, they are well suited to line-haul transportation of high-bulk/low-value commodities like coal. In some cases, the use of less energy-efficient transportation modes like trucks to bring coal to and from the waterways may reduce the net energy savings, but the waterways appear likely to play an important role in the future coal transportation network. The resulting expansion of existing waterway facilities may also encourage greater use of the waterways for other transportation needs. However, recent proposals by the Reagan administration to recover a larger share of waterway costs through increased user fees may tend to place a limit on future waterway development.

ENVIRONMENTAL QUALITY

A second important factor in shaping the future U.S. transportation system will be the quality of the physical environment. The interaction of transportation and air quality will continue to present difficult and possibly insoluble conflicts. Historically, automobile emissions have been a major contributing factor to air pollution. Modifications in automobile technology have substantially reduced the emissions from individual vehicles, but aggregate emissions from all vehicles continue to present a serious problem.

One often proposed solution is the absolute prohibition of automobile travel in the most heavily impacted urban areas, coupled with drastic reductions in automobile travel elsewhere. To date, this and related solutions, such as heavy taxes on central city automobile travel, have been rejected because they seem incompatible with the need for personal mobility and with consumer preferences for the automobile.

In the future, the most promising areas for solving this conflict will be side effects of the energy crisis. Reductions in automobile size and energy consumption will also reduce air-polluting emissions from automobile engines. Shifts from single-occupancy driving to carpools and from automobiles to mass transit will also reduce air pollution. Finally, some new automotive technologies, such as battery-powered engines, will reduce emissions from individual cars and shift pollution effects to more easily controlled electric generating plants.

Concern for environmental quality will also shape the character and economic costs of additions to the transportation system's physical plant and equipment. For example, community concern over aircraft noise has already placed a virtual lid on new airport construction in many parts of the country. Requirements for Government ownership and control of noise-impacted zones around airports are likely to increase new airport costs and airport expansions. Meeting Federal aircraft noise standards also poses financial problems for commercial airlines which will be required to retrofit, reengine, or replace many existing aircraft, although legislation easing Federal aircraft noise standards was passed by the Congress in February 1980 (Public Law 96-193). The Environmental Protection Agency has proposed noise standards for medium and heavy trucks but is being severely criticized by the trucking industry--which asserts the potential cost could be $2.5 billion in the first 5 years of implementation.

Environmental quality considerations are also likely to exert a major influence on development of the future coal transportation system. The railroads are planning to make extensive use of continuous "unit" coal trains of up to 100 or more hopper cars in length (or more than 1 mile). At expected levels of up to 35 trains per day, some communities might be physically divided in half for several hours each day. This would disrupt traffic; delay essential hospital, fire, and police services; and disrupt the life of the affected communities. To avoid these consequences, major public investments will be needed to provide rail-highway grade separation structures and alleviate other adverse effects. As for port facilities, major dredging operations may be required to provide adequate capacity, with possible adverse affects on wetlands, fish and wildlife, and water quality.

NEW TECHNOLOGY

Traditionally, much of the speculation about future trends and developments in transportation has involved new technologies. Over the next decade, it is likely that some relatively new transportation technologies will come into greater use. However, there is little likelihood of a radical shift in the character of major transportation technologies.

It is unlikely that unconventional high-speed ground transportation modes, such as tracked air cushion vehicles and magnetically levitated vehicles, will achieve widespread use during the next decade. At present, these technologies are in operation as engineering prototypes but are not economically feasible. However, increased energy costs and further engineering refinements may permit the practical implementation of these technologies in short- to medium-distance intercity passenger service.

In urban transportation, the most likely new technologies (as previously discussed) will involve shifts in automotive propulsion technology to nonpetroleum fuel-based engines. Urban mass transit is likely to make increased use of an old technology, the personal rapid transit system. The streetcar is receiving increasing attention because of its flexibility and economy. The personal rapid transit system also is a possible alternative to the automobile. It uses a computer-based automatic command and control system to route small transit vehicles (5-10 passengers) directly to waiting travelers and then nonstop to their destination. If cost and reliability problems can be solved, this new technology could potentially combine the personal automobile's attractiveness to consumers with the societal advantages of public transit.

Improvements in communications technology are also likely to exert an increasing influence on transportation. As new forms of communications--visual telephones and computerized message systems--become less expensive, physical travel will become unnecessary for many purposes. While physical travel will continue to be preferred for personal reasons, such as visits to relatives and tourist sightseeing, business and government will make increasing use of electronic communications media as an economical alternative to physical travel.

POTENTIAL EFFECTS ON GAO

The potential effects of these future trends on our audit work in transportation are likely to be substantial. For example, it seems likely that the automobile will continue to be a major mode of transportation, despite rising energy costs. Thus, we will probably devote future resources to audits relating to the adequacy of the highway network and the safety of the automobile

itself. Energy conservation will mean smaller cars with different safety problems which we will have to consider. Concern over energy problems may mean that the Federal Government will shift the scale and character of its involvement in the various transportation modes--for example, with greater financial involvement in port facilities development. Our audit work will have to be adjusted accordingly. More generally, the future importance of energy considerations throughout the transportation system means that the economy, efficiency, and effectiveness of Federal transportation programs will be strongly influenced by the adequacy with which they address energy problems. Our audit work must recognize and respond to this relationship.

Environmental quality problems will also impact on our transportation work. In urban transportation, automobile air pollution emissions will still be a major problem for some time to come. Our audit work in urban transportation must recognize the importance of this problem and consider its implications for Federal transportation programs. Concern over airport noise is a major barrier to airport expansion--our aviation work must recognize and consider the environmental impact of Federal aviation programs. In such areas as coal unit trains, coal slurry pipelines, and port development, environmental impacts are likely to be among the most important factors in assessing the effectiveness and appropriateness of Federal transportation programs.

Finally, new technology also may impact on our transportation work. Introduction of new modes of transportation will raise possible safety problems and problems of cost effectiveness if Federal funding becomes an issue. If communications technology begins to actively displace physical travel, the relative importance of the transportation system might eventually decrease, and the need for our audit work might correspondingly decline.

ORGANIZATIONS INVOLVED

IN TRANSPORTATION ISSUES

FEDERAL AND FEDERALLY SUPPORTED AGENCIES

The Federal Government is involved in many programs which affect the U.S. transportation system. Some of the most important Federal transportation programs are administered by the Department of Transportation. However, many other Federal agencies also conduct transportation-related programs, ranging from the aviation and marine weather services of the Commerce Department's National Oceanic and Atmospheric Administration to the inland waterway development projects of the Army Corps of Engineers. Federal and federally supported agencies which administer transportation-related programs include:

Federal agencies	Mode(s)
Civil Aeronautics Board	Air
Congressional Budget Office	All
Congressional Research Service	All
Council on Environmental Quality	All
Department of Agriculture:	
Forest Service	Highway
Department of Commerce:	
National Oceanic and Atmospheric Administration	Air and water
Department of Defense:	
Military Research and Development	Air and water
U.S. Army Corps of Engineers	Water
Panama Canal Company	Water
Department of Energy:	All
Federal Energy Regulatory Commission	All
Department of Housing and Urban Development	Air, highway, and transit
Department of the Interior:	
Bureau of Indian Affairs	Highway
Bureau of Land Management	Highway and pipeline
National Park Service	Highway
Department of State	All
Department of Transportation:	
Office of the Secretary	All
U.S. Coast Guard	Water
Federal Aviation Administration	Air
Federal Highway Administration	Highway and transit
Federal Railroad Administration	Rail and transit

Federally supported agencies	Mode(s)
National Highway Traffic Safety Administration	Highway and transit
Research and Special Programs Administration	All
Saint Lawrence Seaway Development Corporation	Water
Urban Mass Transportation Administration	Transit
Department of the Treasury	All
Environmental Protection Agency	All
Federal Maritime Commission	Water
Interstate Commerce Commission	All except air
National Aeronautics and Space Administration	Air
Office of Technology Assessment	All
National Transportation Safety Board	All
Tennessee Valley Authority	Water
U.S. Railway Association	Rail
National Railroad Passenger Corporation	Rail
Consolidated Rail Corporation	Rail
Washington Metropolitan Area Transit Authority	Transit

CONGRESSIONAL COMMITTEES

Because of the numerous Federal programs and activities in the U.S. transportation system, many congressional committees have responsibilities relating to some aspect of transportation. These committees, including those with broad transportation-related charters or with jurisdiction over one of the major transportation agencies, are listed below.

House committees	Program category	Mode(s)
Appropriations		
Energy and Water Development	Facilities	Water
Transportation	All	All
Banking, Finance, and Urban Affairs		
Housing and Community Development	Financial	Transit
Government Operations		
Government Activities and Transportation	All	All

House committees	Program category	Mode(s)
Energy and Commerce		
Commerce, Transportation and Tourism	All	Rail and water
Merchant Marine and Fisheries		
Coast Guard and Navigation	All	Water
Merchant Marine	All	Water
Public Works and Transportation		
Aviation	All	Air
Surface Transportation	All	All
Water Resources	All	Water
Investigation and Oversight		
Science and Technology:		
Transportation, Aviation, and Materials	Research	All
Senate committees		
Appropriations		
Energy and Water Development	Facilities	Water
Transportation	All	All
Banking, Housing, and Urban Affairs	Financial	Transit
Commerce, Science, and Transportation		
Aviation	All	Air
Merchant Marine	All	All
Surface Transportation	All	All (except air)
Environment and Public Works		
Transportation	All	All
Water Resources	All	Water
Governmental Affairs	All	All

PRIVATE SECTOR LOBBY GROUPS

Transportation industry trade associations and consumer movement lobby groups play a major role in communicating the views of the private sector on national transportation issues to the Congress and the executive branch. Most of these lobby groups are Washington-based and can provide

background information and statistics on transportation problems as well as informed criticism of current Government programs and policies. Some of the most active private sector lobby groups are listed below.

Lobby group	Mode
Aircraft Owners and Pilots Association	Air
Airport Operators Council International, Inc.	Air
Air Transport Association of America	Air
American Association of State Highway and Transportation Officials	All
American Automobile Association	Highway
American Bus Association	Highway
American Institute of Merchant Shipping	Water
American Public Transit Association	Transit
American Trucking Associations, Inc.	Highway
Lake Carriers' Association	Water
American Waterways Operators, Inc.	Water
Association of American Railroads	Rail
Association of Oil Pipe Lines	Pipeline
Center for Automotive Safety	Highway
Insurance Institute for Highway Safety	Highway
Motor Vehicle Manufacturers Association	Highway
National Waterways Conference, Inc.	Water
Slurry Transport Association	Pipeline
Transportation Association of America	All
Water Transport Association	Water

RESEARCH ORGANIZATIONS

Research organizations provide an important source of independent views, expert analysis, and background information on transportation problems. University research institutes provide laboratory facilities, computers, and libraries for professors and students to conduct academic research. Such research is funded by universities, private sector sponsors, and Government agencies. Other private research organizations include independent nonprofit research institutes and profitmaking research corporations. These organizations primarily perform contract research for private industry and governmental clients. Some prominent nonprofit research organizations now active in the transportation area are listed below.

Organization	Type
American Enterprise Institute, Center for the Study of Government Regulation	Nonprofit
Batelle Memorial Institute	Nonprofit
Brookings Institution	Nonprofit
Johns Hopkins University, Applied Physics Laboratory	University

APPENDIX I

Massachusetts Institute of Technology, Center for Transportation Studies	University
National Academy of Sciences, Transportation Research Board	Nonprofit
Northwestern University, Transportation Center	University
Rand Corporation	Nonprofit
Southwest Research Institute	Nonprofit
Texas A & M University, Transportation Institute	University
The MITRE Corporation (METREK Division)	Nonprofit
The Urban Institute	Nonprofit
University of California, Institute of Transportation and Traffic Engineering	University
University of Michigan, Highway Safety Research Institute	University
University of North Carolina, Institute of Highway Safety	University

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