

### REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

# How Much Federal Subsidy Will Amtrak Need?

From 1976 through 1980, GAO estimates that at least \$6.2 billion of Federal funds will be required for Amtrak to function.

GAO offers recommendations for improving the reliability of Amtrak's future plans and estimates.

Amtrak's service needs further improvement but there is a general feeling of satisfaction among a large number of passengers.

707339 APRIL 21, 1976



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### COMPTROLLER GENERAL OF THE UNITED STATES WASHINGTON, D.C. 20548

B-175155

The Honorable John E. Moss
Chairman, Subcommittee on Oversight
and Investigations
Committee on Interstate and Foreign Commerce
House of Representatives

Dear Mr. Chairman:

Pursuant to your letter of June 16, 1975, this is our report on Amtrak's 5-year plan submitted to the Congress in August 1975, as requested by the House Rules Committee. In addition, the report summarizes Amtrak's financial condition and the amount of Federal financial assistance given to other modes of passenger transportation and information on the quality of service Amtrak provides to its passengers.

Our study showed that Amtrak's projected revenues were optimistic, expenses understated, many items not supported by documentation, and that the 5-year plan should have shown a need for greater Federal assistance than it did. Although we have not analyzed in this report some of the more recent developments affecting Amtrak, it is clear that the 5-year plan cannot now be considered as representative of future Amtrak operations. For example:

- --At the urging of the president of Amtrak, significant changes are being made in the type and quantities of long-range equipment commitments. The effect of many of these changes is not reflected in the plan.
- --Passage of the Rail Revitalization and Regulatory Reform Act of 1976 (Public Law 94-210) requires a substantial Federal outlay for Amtrak to take over and fix up the Northeast corridor. The full impact could not have been known at the time the plan was submitted.

--The Administration's budget proposals for fiscal year 1977 provide considerably less than is needed to keep Amtrak operating at its current level of service. According to Amtrak officials such budget cuts would require that several trains be dropped from service. This and other possibilities could not have been foreseen in preparing the plan.

We obtained comments from Amtrak on the matters covered in this report and their views were considered in its preparation. Amtrak stressed to us that it was making changes in its overall planning process and as a result the reliability of future 5-year plans would be greatly improved. We are making recommendations to Amtrak's president that we believe will assist him in improving the planning process.

We believe this report should be made available to the various House and Senate Committees concerned with Amtrak matters as well as to the president of Amtrak; the Director, Office of Management and Budget; the Secretary of Transportation; and the Chairman, Interstate Commerce Commission. We will be in contact with your office to discuss the release of the report so that further distribution can be made.

Sincerely yours,

Comptroller General of the United States

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	<u>ABBREVIATIONS</u>		
Amtrak	National Railroad Passenger Corporation		
GAO	General Accounting Office		
ICC	Interstate Commerce Commission	•	

#### DIGEST

Amtrak has needed and will need considerable Federal funding to survive. It cannot support itself.

Amtrak's 5-year plan calls for a \$914.8 million capital program which is needed to carry out its operations. These operations are estimated to generate revenues of \$2.3 billion at a cost of \$4.8 billion. Amtrak estimates required Federal funding over the 5-year period to be \$3.0 billion--\$858.6 million for the capital program and \$2.140 billion to offset deficits.

Amtrak's projected revenue and costs for fiscal years 1976 through 80 are optimistic. The plan does not present a realistic assessment of the level of Federal funding that may be required to carry out its plans and offset its losses over this period.

GAO believes the required Federal investment over the 5-year period will be at least \$3.439 billion, excluding major right-of-way improvements that Amtrak considers necessary. Amtrak estimates that these major right-of-way improvements will require Federal funding of at least \$2.8 billion over the 5-year period.

GAO believes the combined cost of operations, capital investment, and right-of-way improvements requiring Federal funding will amount to a minimum of \$6.2 billion from fiscal years 1976 through 80.

This level of funding might be increased if actual

- --revenues fall short of those estimated in the plan,
- --operating costs exceed GAO's adjusted cost estimates, and

--capital program needs or costs exceed the requirements and estimated costs set out in the 5-year plan.

Required Federal funding will probably exceed the amounts shown in the plan because:

- --Amtrak may not be able to achieve the optimistic ridership and revenue levels it has projected. (See chap. 2.)
- --Amtrak understates operating cost requiring Federal subsidy by a minimum of \$441 million. (See chap. 3.)
- --Many capital program estimates are tentative and therefore subject to change. (See chap. 4.)
- --The plan either does not address or does not request funds for several pending or necessary actions which will have to be funded by the Government. (See chap. 5.)

To provide the Congress with better estimates of the number of riders, revenue, operating costs, and Federal subsidies needed, GAO recommends that, in developing future plans, Amtrak avoid the deficiencies in estimation found in the current plan and make indepth studies of

- -- the potential riders in the areas it serves and plans to serve and
- -- the actions necessary to attract potential riders to train travel.

The president of Amtrak expressed general agreement with the facts as reported and GAO's recommendations. Concerning GAO's conclusion about the ridership projections, he stated his belief that the ridership goals, projected through fiscal year 1980, are achievable. He also indicated that a number of actions are being taken or planned which he believes will afford Amtrak greater opportunity to increase revenues and control costs while at the same time increase productivity and quality of service. (See app. I.)

Amtrak's service needs further improvement but there is a general feeling of satisfaction among a large number of passengers. (See chap. 8.)

#### CHAPTER 1

#### INTRODUCTION

On June 16, 1975, the Chairman, Subcommittee on Oversight and Investigations, House Committee on Interstate and Foreign Commerce, at the request of the House Rules Committee, asked us to assess the reasonableness of the National Railroad Passenger Corporation's (Amtrak) projected operations for fiscal years 1976 through 1980, and the resulting projected need for Federal funds.

In addition, the Chairman also asked us to provide information on

- -- Amtrak's financial condition,
- --projected levels of Federal support needed by Amtrak compared to Federal support provided to other forms of passenger transportation, and
- --Amtrak's quality of service to railroad passengers.

Amtrak was established by the Rail Passenger Service Act of 1970 (45 U.S.C. 501) as a for-profit corporation to operate and revitalize U.S. intercity passenger service. The act requires that the corporation use innovative operating and marketing concepts to fully develop the potential of modern rail service to meet the Nation's intercity passenger transportation requirements.

On May 1, 1971, Amtrak began service on 21 domestic routes which comprised its basic system. Changes have been made to the system over the years and it now has 35 routes covering a total of about 25,000 miles, including four routes that service points in Canada and Mexico.

The corporation reported financial losses on its operations each year since fiscal year 1972, totaling \$839 million as of June 30, 1975. Amtrak's operations are financed from passenger revenues and from Federal Government assistance. Only about 50 percent of its operating costs are recovered from revenues. For example, during fiscal year 1975, Amtrak's operating expenses totaled \$560 million. Revenues, primarily from the 17.3 million passengers carried by Amtrak, amounted to \$247 million, leaving it with a loss of \$313 million for the year.

#### FEDERAL FINANCING

The Federal Government has provided grants to offset most of Amtrak's operating deficits, and loan guarantees for capital improvements. As of June 30, 1975, \$634.6 million in Federal grants had been given to Amtrak.

Under the Rail Passenger Service Act of 1970, Amtrak's need for Federal assistance is channeled through the Department of Transportation and becomes part of the Department's budget requests that are ultimately submitted to the Congress. Federal funds appropriated by the Congress for Amtrak also flow through the Department.

As part of the overall budgeting process for executive agencies, the Office of Management and Budget requires that agencies prepare long-range (ususally 5 years) financial projections of their operations. Normally, the long-range projections are not made part of the official budget submissions to the Congress. However, Section 601(b) of the 1970 act, as amended, requires that Amtrak submit such long-range plans directly to the Congress at the same time they are submitted to the Department and the Office of Management and Budget.

Amtrak submitted its first 5-year plan to the Congress in November 1973. Its second plan was submitted in August 1974 and its latest plan in August 1975. The next plan is scheduled to be submitted to the Congress in October 1976. Amtrak officials told us that their planning process has improved with the development of each succeeding plan. The first three plans have been primarily financially oriented but their next plan will be designed to give more visibility to marketing and operational plans of the company. In essence each plan through 1975, shows actual financial data for the year just completed and estimates for the current year and 4 years beyond.

In its simplest terms, Amtrak's 5-year plan consists of four major elements.

- --Projected revenues based on estimated revenue passenger miles.
- --Estimated costs to operate the railroad.
- --Estimated costs to acquire needed equipment and facilities.
- --Estimated Federal subsidy needed.

### ASSUMPTIONS AND ALTERNATIVES CONSIDERED IN AMTRAK'S 5-YEAR PLAN

Amtrak's plan outlines the actions it feels are necessary to achieve its corporate goals and objectives as contained in the authorizing legislation.

- --Provide modern and safe intercity rail passenger service.
- --Develop and maintain an integrated, nationwide passenger system.
- --Operate efficiently on a for-profit basis.
- --Reduce congestion, conserve energy, and preserve the environment.
- --Serve the public convenience and necessity.

Amtrak states that these goals provide the basic principles upon which the 5-year plan was developed.

Amtrak's approach to the plan was to give priority to providing a modern and safe intercity rail passenger service. Because of the priority given to this goal, Amtrak's plan calls for an aggressive equipment modernization program with additional emphasis on improving equipment maintenance and other facilities. The revenue and cost projections in the plan reflect Amtrak's estimates of what it will cost to continue operations while carrying out the modernization program and the revenues it hopes to realize from operations during the period.

The plan shows the assumptions which were derived from the law, and the strategy adopted by Amtrak in developing its plan. Consideration of alternatives such as operating levels, route structure and equipment requirements were not integrated as part of Amtrak's planning process. Consequently, there is no formal record of the alternatives that were priced out, considered, and discarded during the planning process. We therefore concentrated our efforts on the plan that was developed and the estimates of cost and revenues associated with it.

#### CHAPTER 2

#### ASSESSMENT OF REVENUE PROJECTIONS

For intercity transportation, passengers pay a fare which varies generally with the length of the trip taken. Other than Federal assistance most of Amtrak's revenues are derived from passenger fares. Therefore, any projected increase in revenues must come from either an increased number of passengers or increased fares.

In fiscal year 1975 Amtrak received \$246.5 million in revenues. As shown in the following table the 5-year plan projects an increase to \$577.0 million in fiscal year 1980.

Fiscal year	Revenues ( <u>millions</u> )	Percent increase over preceding year
1976	\$314	27
Transition quarter	99	N/A
1977	389	24
1978	447	15
1979	506	13
1980	577	14

Most of this increase is predicted to result from increased ridership on existing routes and by starting up new routes. Fare increases are planned for October 1, 1976, and will be selectively applied to various routes to yield an overall 5 percent increase in existing fares. The 5-year plan provides for no further fare increases because Amtrak believes that they would adversely affect ridership. The corporation, however, has put in motion a variable fare structure designed to increase ridership in off-peak periods and on certain trains.

The following table shows Amtrak's prior revenues for fiscal years 1972 through 1975.

Fiscal year	Revenue (millions)	Percent increase over preceding year
1972	\$152.7	
1973	177.3	16
1974	240.1	35
1975	246.5	3

Revenues increased an average of 18 percent per year over this period. There were several factors underlying this growth that may not be present during fiscal years 1976 through 1980. First, the energy crisis in 1974 produced an abnormal demand for train travel that resulted in substantial increases in Amtrak's ridership and revenue. Second, between 1972 and 1975, numerous fare increases were made.

However, Amtrak's projections for the 5-year period, assume no fare increases beyond those programed for October 1, 1976, but assume revenue projections based primarily on increases in the level of ridership.

We believe Amtrak's calculations of revenue, assuming that ridership forecasts are achieved, are reasonable. However, we question ridership forecasts and consequently believe that the projected revenues over the 5-year period are optimistic.

#### RIDERSHIP PROJECTIONS

Ridership is measured by (1) the number of passengers and (2) revenue passenger miles. Amtrak's plan projects that, over the 5-year period, the number of passengers will increase from 17.3 million in fiscal year 1975 to 32.9 million in fiscal year 1980—a 90 percent increase—and revenue passenger miles will increase from 3.8 billion in 1975 to 8.6 billion in 1980—a 126 percent increase. To estimate revenues, the revenue passenger mile measurement was the one Amtrak used.

Amtrak ridership forecasts included in the 5-year plan were developed in two stages. For fiscal year 1976 the forecast was based on a combination of

- --historical trends,
- --mathematical calculations to discount the effect of the fare increases,
- --train consist1/ limitations, and
- --management judgments.

As a result, 1976 ridership was projected at 4.61 billion revenue passenger miles representing a 20 percent increase over fiscal year 1975.

<sup>1/</sup>train consist means the number and types of cars in a train.

Projections for fiscal years 1977 through 1980 were based on managements' judgment that systemwide ridership would experience a normal growth increase on existing routes of 10 percent in fiscal year 1977, 12 percent in fiscal year 1978, and 15 percent each in fiscal years 1979 and 1980. Ridership estimates reflecting this normal growth were then further adjusted to reflect

- -- route additions,
- --changes in train consists and frequencies by route, and
- --an estimated growth rate for each route.

The resulting ridership projections are summarized in the following table.

Fiscal year	Revenue passenger miles	Percent incr over previous	
1975 (actual)	3.85		.* ·.
1976	4.61	20.0	
1977	5.61	21.2	
1978	6.57	17.1	
1979	7.53	14.6	
1980	8.63	14.6	

## EVALUATION OF ASSUMPTIONS UNDERLYING AMTRAK PROJECTIONS

Our evaluation of ridership and resultant revenue projections required an assessment of the reasonableness of the following critical assumptions underlying Amtrak's projections.

- 1. There is a market for passenger rail transportation and that market can be reached by new equipment and improved scheduling, advertising, and marketing techniques.
- 2. Amtrak will experience a normal growth in ridership on existing routes even if no changes are made in its operation.
- 3. The introduction of new equipment will result in significant ridership increases above the "normal growth" rate.

### Market exists for passenger rail transportation

Early opinion polls on Amtrak concluded that a market exists for passenger rail service. However, these polls were nationwide in scope and not directed at specific markets. In developing their ridership projections for the fiscal years 1976 through 1980, Amtrak assumed that sufficient market potential existed along the routes they were operating to achieve their ridership projections. The projections, however, were not based on current market share studies that would identify the extent of market potential on existing routes and what actions would be necessary to attract the potential riders to train travel. Therefore, the relationship between ridership projections and market potential is uncertain.

#### Normal growth

The assumption that normal growth of 10 percent, 12 percent, 15 percent and 15 percent will occur respectively in fiscal years 1977 through 1980, without any changes in Amtrak operations was based on management judgments. Experience over calendar years 1973, 1974, and 1975—the only years for which comparable ridership data is available—does not show ridership growth approaching these projections.

Before January 1973, Amtrak did not collect systemwide data that could be used for comparing ridership changes from year to year. Beginning in January 1973 systemwide data was collected on the number of passengers riding Amtrak trains. Using this data, we compared ridership levels for calendar years 1973, 1974, and 1975 to obtain some measure of increased ridership over this period.

<u>Calendar year</u>	Number of passengers (millions)	Percent change
1973	14.5	
1974	17.2	18.6
1975	16.1	(6.4)

The growth in 1974 and subsequent decline in 1975 has been attributed to the energy crisis which generated an abnormal demand for passenger rail service during 1974. Consequently, a comparison of ridership levels for calendar years 1973 and 1975 provides the best indicator of ridership growth experienced to date by Amtrak. In 1975 there were 16.1 million passengers as opposed to 14.5 million in 1973. This represents a growth in ridership of

11 percent over a 2-year period--an annual growth rate of about 5.5 percent.

Based on ridership growth experience for calendar years 1973 and 1975, Amtrak's assumptions of normal growth ranging from 10 percent to 15 percent from 1977 through 1980, seems to be optimistic. Even Amtrak's projected growth for fiscal year 1976 seems to be very optimistic. From July through December 1975 Amtrak had projected a growth of 9.9 percent or an additional 205.9 million revenue passenger miles over the similar period for 1974. However, rather than increase, revenue passenger miles actually decreased by 55.1 million or 2.6 percent. Amtrak attributes this decrease to the slow pace of economic recovery.

### New equipment will probably increase ridership

Amtrak's 5-year plan reflects its belief that by introducing new equipment, a substantial increase in ridership over and above the assumed normal ridership growth will occur.

The greatest ridership increases are projected to occur in the 1976 to the 1978 time frame. This coincides with the planned delivery dates of new equipment. As of February 1976, however, only two routes have had new equipment long enough to measure its effect on increasing ridership. The experiences on these two routes conflict and therefore, do not fully support Amtrak's assumption.

The routes go between Chicago, Illinois and Detroit, Michigan, and Chicago and St. Louis, Missouri. Ridership did increase substantially on the Chicago to Detroit route after new equipment was added in May 1975. However, Amtrak data shows that passenger growth on this route had increased considerably before the new equipment was put in use. On the Chicago to St. Louis route growth only paralleled the average growth for similar distance routes from the time new equipment was introduced in October 1973. Because ridership growth did not meet expectations, Amtrak took five of the seven new trains out of service on this route and replaced them with four trains of old equipment in October 1975.

The relationship of ridership growth to new equipment is unclear. Even on the Chicago to Detroit route where significant increases resulted, other things were done along with the introduction of the new equipment. For example:

- --Amtrak and the State of Michigan jointly spent \$1,414,000 in 1975 to upgrade the Chicago-Detroit route including sidings, signaling, parking facilities, and maintenance facilities.
- --Amtrak also carried out an extensive advertising and promotion program relative to the introduction of the new equipment, at an estimated cost of \$292,379.
- --Michigan also hired passenger service representatives to ride and promote the trains at an estimated cost of \$30,000.

Consequently, because there are only two routes on which new equipment was introduced and because of the nature of these two experiences, we believe the validity of the assumption about new equipment increasing ridership remains uncertain. The introduction of new equipment will probably improve service and make rail travel more attractive. ever, Amtrak's plan needs to combine the introduction of new equipment with associated facility improvements and innovative marketing and advertising efforts on a route basis to achieve significant ridership growth like that experienced on the Chicago-Detroit route. At the time of our review, Amtrak's planning process did not effectively integrate facility acquisition and improvements and marketing efforts with the planned introduction of new equipment on specific routes.

### ASSESSMENT OF RIDERSHIP PROJECTIONS BY TYPE OF ROUTE

As stated in chapter 1, Amtrak has 35 separate routes covering about 25,000 miles. Each route is generally classified into one of four types—long distance, corridor, short distance, and international. In its 5—year plan Amtrak also projected different levels of growth over these four different types of routes with the majority of the total growth projected over its long distance routes. Therefore, in addition to assessing the reasonableness of the systemwide ridership projections we also assessed the reasonableness of the projections for the different types of routes.

### Ridership growth on long-distance routes

During fiscal year 1975 Amtrak ridership on all routes amounted to 3.85 billion revenue passenger miles producing revenues of \$242.6 million. Long-distance routes accounted

for 61 percent (2.4 billion revenue passenger miles) of systemwide totals. The 5-year plan indicates the following about ridership on the long-distance routes.

- --By 1980 ridership will grow to a level of 5.7 billion revenue passenger miles (241 percent of 1975 levels).
- --By 1980 long-distance routes will account for 66 percent of Amtrak's total revenue passenger miles (compared to 61 percent in fiscal year 1975).

Based on these projections it is evident that much of Amtrak's growth is anticipated on the long-distance routes. To obtain these projections, Amtrak's plan provides for 422 new bilevel cars to be used on the long-distance western routes, increased frequencies of service, and greater seating capacity. The new bilevel cars are designed so that passengers can ride on the upper level above dining facilities, baggage space, or lower level seats. This will allow space for additional revenue producing cars in the train consist. The new cars will have the capacity to carry between 86 and 108 passengers, depending on the type of car.

Bilevel cars will be added to the long-distance routes beginning in 1977, and continuing through 1979, and according to Amtrak, should provide the equipment capacity to handle its projected ridership for fiscal year 1980 over these routes.

The critical factor, however, as to whether or not Amtrak achieves this projected ridership, centers on the market potential of the long-distance routes and Amtrak's ability to attract new riders.

Amtrak's ridership experience with the long-distance routes for calendar years 1973 and 1975 (excluding 1974 because of the energy crisis) does not support its fiscal years 1976 through 1980 projections for long-distance routes. The annual rate of growth during this 2-year period was only 3 percent as compared to their projected annual increases of 19.2 percent, 24.5 percent, 20.6 percent, 15.9 percent, and 16.1 percent respectively for fiscal years 1976 through 1980. These projected annual percentage increases would produce a 1980 ridership level that is 241 percent of 1975 levels.

During the first half of fiscal year 1976, ridership on the long-distance routes decreased by 3.2 percent from the comparable fiscal year 1975 period. This decrease on

the long-distance routes accounted for 77.9 percent of the systemwide ridership decrease between these two periods.

In our opinion, the projected ridership and revenue figures for long-distance routes are optimistic because:

- --The projections are based on the ridership capacity that Amtrak plans to achieve on the long-distance routes without any study of the market potential.
- --Travel on Amtrak's long-distance routes is not competitive with air travel between the origin and destination points since the travel time is much shorter and some airlines offer excursion fares that are competitive with Amtrak fares.

Consequently, long-distance-route ridership will most probably be limited to

- (1) leisure vacation travel,
- (2) travel between intermediate stops not serviced by airlines,
- (3) passengers who are fearful of air travel,
- (4) airline overflow during peak travel periods, and
- (5) passengers that can be diverted from automobile travel.

### Ridership growth on shortdistance and corridor routes

Amtrak's ridership experience on the short-distance routes for calendar years 1973 and 1975 shows an annual growth rate of approximately 17 percent. Except for the fiscal year 1976 estimates the projected annual growth rates for the short-distance routes for fiscal years 1977 through 1980 (15.3 percent, 15.1 percent, 16.3 percent and 14.7 percent) seem to be reasonable based on the growth experienced between 1973 and 1975 and the planned introduction of new routes. The projected growth rate for fiscal year 1976 of 37.6 percent, however, is more than double the historical growth rate that has been experienced. The overall decline in ridership during the first half of fiscal year 1976 indicates that the 1976 projections may not be met.

We believe the achievability of the annual projections (15.1 percent, 17.6 percent, 9.7 percent, 10.2 percent and 10.6 percent) for the Northeast corridor routes is uncertain because of equipment problems involving the deterioration of the current metroliner cars and the inability of the new E-60 locomotive which was planned to replace the metroliner cars, to safely operate at metroliner schedules. These problems, if not resolved, could have a negative impact on Amtrak's ability to attract increased ridership.

### Financial impact if ridership projections are not achieved

If Amtrak fails to achieve the projected growth in ridership, its revenue will fall short of the projected amounts. Unless there are corresponding cost reductions the revenue shortfall will result in an increase in the Federal operating subsidy that will be required. To provide some indication of the impact of different growth rates on revenue, we calculated the passenger fare revenues that would result if no growth were to take place over the 5-year period and if ridership were to grow at average annual rates of 5 percent, 10 percent and 15 percent. Based on Amtrak's estimated average annual growth rate of 17.5 percent it is projecting total passenger fare revenues for the 5-year period of \$2.07 billion. Revenues would be less than that amount by approximately

- --\$206 million at a 15 percent rate of growth,
- --\$443 million at a 10 percent rate of growth,
- --\$652 million at a 5 percent rate of growth, and
- --\$836 million if no growth were to occur.

If any of the above growth rates were to occur, the required Federal operating subsidy would increase by the amount of the revenue shortfall unless there were corresponding reductions in costs.

#### CONCLUSION

Amtrak's plan projects an average annual growth in revenue passenger miles of approximately 17.5 percent and its total revenue projection for the 5 years reflects this average growth. For the reasons discussed in this chapter,

we believe the ridership and revenue projections are optimistic.

### RECOMMENDATION TO THE PRESIDENT OF AMTRAK

To provide the Congress with better ridership and revenue projections, as well as more accurate estimates of the amount of Federal subsidies needed, we recommend that Amtrak, in preparing future plans, make a concerted effort to base its projections on studies of each route's market potential taking into consideration the actions necessary to attract those potential riders to train travel and Amtrak's capability to take these actions.

In a March 25, 1976, letter, the president of Amtrak expressed general agreement with the facts as reported and with our recommendations. The president also expressed his strong belief that there is a definable market for rail passenger service and that the ridership goals projected through fiscal year 1980 are not overly optimistic.

### CHAPTER 3

#### ASSESSMENT OF OPERATING COST PROJECTIONS

In fiscal year 1975, Amtrak's operating costs totaled \$560 million. As shown below, the 5-year plan projects an increase to \$1.01 billion in 1980.

Fiscal year	Operating costs (millions)	Percent increase over preceding year
1976 Transition	\$ 710.0	26.8
quarter	211.0	n/a
1977	867.0	22.1
1978	968.0	11.6
1979	1,002.0	3.5
1980	1,010.0	0.8

Amtrak's fiscal year 1976 operating cost estimates were based on the assumption that Amtrak would continue at its fiscal year 1975 level of operations with an allowance for inflation and adjustments for programs started during fiscal years 1975 and 1976. This estimate was then used as a base for projecting each of the additional years through 1980.

The total operating expense for each year was determined by adding to the base the net additional costs of assumed changes in services. These changes consisted of the startup of 5 new routes in fiscal year 1976, 4 new routes in each of the next 4 years, and the deletion of 1 existing route for each of the 1977 through 1980 years.

Estimates for each expense category for 1977 through 1980 were stated in terms of 1976 dollars. The total estimated operating costs for these years were then adjusted to include the effect of inflation through fiscal year 1977.

### REASONABLENESS OF AMTRAK METHODOLOGY AND PROJECTIONS

Amtrak's projected operating costs and the methodology it used in developing them indicate the following short-comings.

- --Operating costs estimated for fiscal years 1977 through 1980 are based on fiscal year 1976 ridership levels. They do not include an estimate for the additional ridership or for offsetting productivity increases.
- --Cost of new services planned to be introduced between 1977 and 1980 are understated because of an error in calculations.
- --Operating costs for 1978, 1979, and 1980 are understated because they do not include an estimate for inflation beyond the level projected for 1977.
- --Cost estimates for fiscal years 1977 through 1980 were reduced by a judgment factor attributed to management improvements that cannot be otherwise supported.
- --Interest expenses are understated for 1976 through 1980 because Amtrak was prohibited by the Department of Transportation from using Federal capital grants to liquidate debts.
- --Depreciation expenses are overstated due to an error in the method of calculating depreciation on new equipment.

## Cost estimates based on 1976 ridership levels

In developing estimates for fiscal year 1977 though fiscal year 1980, Amtrak used its actual fiscal year 1975 operating costs inflated to fiscal year 1976 dollars, as its cost base and then adjusted it to include the planned operating changes for each of the fiscal years 1977 through 1980. According to Amtrak officials responsible for developing the estimates, the projected operating costs do not include any adjustment to reflect the additional costs that would be incurred from servicing the increased ridership levels that are being predicted for 1977 through 1980.

As indicated in chapter 2, Amtrak estimates that the number of passengers it services per year will increase from 17.3 million in fiscal year 1975 to 32.9 million in fiscal year 1980, an increase of about 90 percent. There is a relationship between certain types of operating costs and ridership levels, such as reservation and ticketing

operations and commissary operations. As the number of passengers increases, it seems reasonable that Amtrak would have to expand its reservation and ticketing operation and its commissary operation to service the additional passengers. Amtrak's operating cost projections do not include any estimate of these expanded services; therefore, we believe their estimates of operating costs are understated. We were unable to determine the amount of such understated operating costs.

### Cost of new services are understated

Part of the operating expense of a route includes a payment to the railroad that is operating the train for Amtrak. In estimating this portion of the cost associated with new route operations Amtrak calculated the incremental increase for 1977 through 1980 over the total estimated payments for 1976. However, because of an error in their method of calculation, the estimates of operating costs in the 5-year plan are understated by the following amounts:

<u>Fiscal year</u>	Amount (millions)
1977	\$25.0
1978	23.7
1979	23.7
1980	23.7
Total	\$ <u>96.1</u>

According to Amtrak's 5-year plan, the operating expenses for each of the future years were determined by adding additional expenses to the 1976 budget. The additional expenses associated with payments to the railroads were determined by subtracting the 1976 base year amounts from the future year totals. However, for purposes of this calculation, Amtrak used a base year amount which was inaccurate. The base year included a contingency cost of \$26.2 million for a possible new contract with one of the railroads, which could only affect 1976. Therefore, this contingency should not have been used in projecting future operating costs.

### Cost of inflation is understated

Amtrak did not include in the 5-year plan any provisions for inflation beyond the level projected for fiscal year 1977. As a result, operating costs in 1978, 1979, and 1980, will be greater by the inflation that occurs.

All expense items for each year were expressed in 1976 dollars. A factor for inflation was calculated separately for 1977 and added to each year's total so that 1977 estimates are inflated to average 1977 dollars and 1978 to 1980 estimates are also inflated to 1977 dollars.

The Federal budget for fiscal year 1976 includes projections of general rates of inflation for fiscal years 1978, 1979, and 1980 of 5.2 percent, 4.1 percent and 4.0 percent, respectively. Applying these rates to Amtrak's 1978 through 1980 cost estimates results in inflationary cost for these years as follows:

<u>Fiscal year</u>	$\frac{\texttt{Amount}}{(\texttt{millions})}$
1978	\$ 25.3
1979	65.2
1980	<u>96.7</u>
Total	\$_187.2

It is possible that these inflation costs could be low. For example, the American Association of Railroads estimates that between January 1971 and December 1976, the railroad industry will have experienced wage and price rate increases of approximately 78 percent or an average of about 13 percent per year over the 6-year period. Therefore, on this basis, it is possible that Amtrak's operating cost estimates could be even further understated, depending on the rate of inflation that occurs.

### Questionable cost reductions attributed to management improvements

The cost estimates for fiscal years 1977 through 1980 were developed by estimating the net additional costs for each of these years over fiscal year 1976 and then adding these net additional costs to the 1976 base estimates.

The net additional costs that were used to estimate fiscal years 1977 through 1980 costs were \$89.2 million less than what was indicated by the supporting data. According to Amtrak officials, this \$89.2 million represents cost reductions that are expected to be realized from anticipated management improvements. However these officials were unable to demonstrate that the actions classified as management improvements would produce a reduction in cost over the period. Consequently, the cost reduction attributable to management improvements is not supported and the cost estimates for fiscal years 1977 through 1980 are understated by the following amounts.

Fiscal <u>year</u>	Amount (millions)
1977	\$16.3
1978	19.3
1979	24.6
1980	29.0
	\$89.2

### Interest expense understated

Estimates of interest expense included in the 5-year plan reflect Amtrak's intent to use its annual capital congressional appropriations to reduce its outstanding long-term debt balance and thereby reduce its interest expense. However, the Department of Transportation, in a December 30, 1975, letter, has prohibited Amtrak from using the capital appropriations in this manner stating that:

"We must adhere to the principle that budget authority (and associated cash) provided by captial appropriations should be used for acquisitions specified in the President's budget and in budget justification presented to the Appropriations Committees."

Assuming the continued prohibition against the use of Amtrak's capital appropriations to reduce outstanding debt as planned and as reflected in the 5-year estimates, interest expense is understated approximately as follows:

	iscal <u>/ear</u>	Amount interest expense understated (millions)
; ] ]	1976 1977 1978 1979 1980	\$ 6.6 19.6 25.7 9.7 6.7
1	Total	\$68.3

### Depreciation overstated

Depreciation begins when equipment is received. Amtrak calculated the amount of depreciation as though the equipment to be delivered during fiscal year 1976 was on hand the entire year. It seems that it would have been more reasonable to either use an equipment delivery schedule or assume that delivery would take place evenly throughout the year. This would reduce the estimated depreciation expenses of new equipment in the year it is acquired by approximately 50 percent. The effect of calculating depreciation in this way was to overstate depreciation expense for fiscal year 1976 by about \$3.7 million. Depreciation for 1977 through 1980 was computed the same way. Therefore, Amtrak estimates of depreciation expenses are overstated by the following amounts.

Fiscal year	Amount depreciation expense overstated (millions)
1976 1977 1978 1979 1980	\$ 3.7 7.9 11.5 5.3 1
Total	\$ <u>28.5</u>

Although depreciation expense does not affect the amount of any request for appropriations from the Congress, it does affect the fully allocated costs used to evaluate the profitability of any given route and should, therefore, be calculated in the most reasonable manner.

### EFFECT OF COST PROJECTION ERRORS ON NEEDED FEDERAL SUBSIDIES

Amtrak needs Federal operating subsidies to offset operating costs in excess of operating revenue. To the extent that Amtrak's cost estimates are understated, the estimates of the required Federal operating subsidy are understated by the same amount.

Amtrak's plan projected a total need of \$2.14 billion in Federal operating subsidies for the 5-year period ending in 1980. However, based on our review of the 5-year plan it seems that the minimum operating subsidy needed will be closer to \$2.58 billion, or \$440.8 million more than estimated by Amtrak as shown in the following table.

	Amount operating
Fiscal	subsidy understated
<u>year</u>	(millions)
1976	\$ 6.6
1977	60.9
1978	94.0
1979	123.2
1980	<u>156.1</u>
Total	\$440.8

Even if Amtrak is able to achieve the increased ridership it is predicting, considerably more Federal support, through Federal operating subsidies, will be required than what is estimated in the 5-year plan. The following table presents our estimate of what we believe to be the minimum amount of Federal operating subsidies that will be required by Amtrak for fiscal years 1976 through 1980.

	<u>FY 1976</u>	Transition quarter	<u>FY 1977</u>	FY 1978 (millions)	FY 1979	<u>PY 1980</u>	Total PY 1976-PY 198
Amtrak's estimated operating subsidy	\$350.0	105.0	\$440.0	\$460.0	\$425.0	\$360.0	\$2,140.0
Expense understate- ment	6.6	(a)	61.0	94.0	123,2	156,1	440.9
GAO's estimate of minimum operating subsidy	\$ <u>356.6</u>	105.0	\$ <u>501.0</u>	\$ <u>554.0</u>	\$ <u>548.2</u>	\$ <u>516.1</u>	\$ <u>2,580.9</u>

<sup>(</sup>a) no estimate was made for the transition quarter

#### CONCLUSIONS

The above adjustments to Amtrak's estimates of cost and operating subsidies should be considered as a minimum because:

- --The inflation rate used to inflate fiscal years 1978, 1979, and 1980 costs is conservative and considerably below the inflation rates experienced by railroads in recent years.
- --The adjusted cost estimates do not include any estimate for the cost associated with expanding such services as ticketing and reservations to handle the projected large increase in the number of passengers.

We believe Amtrak's cost estimates for fiscal years 1976 through 1980 are considerably understated for their planned operations during this period. Consequently, even if Amtrak is able to achieve the increased ridership it is predicting, considerably more Federal support will be required than what is estimated in the 5-year plan.

### RECOMMENDATIONS TO THE PRESIDENT OF AMTRAK

To provide the Congress with better estimates of the cost of operations, as well as better estimates of the amount of Federal subsidies needed, we recommend that Amtrak, in preparing future plans, take necessary actions to avoid the type of errors in cost estimation that we found in its current plan. In addition, we recommend that Amtrak make a concerted effort to relate the projected operation costs to

- --the actions necessary to achieve its projected ridership and
- -- the cost of servicing the increased ridership being projected.

In his March 25, 1976, letter, the president of Amtrak expressed general agreement with the facts as reported and with our recommendations.

#### CHAPTER 4

#### ASSESSMENT OF CAPITAL PROJECTIONS

Amtrak's 5-year plan provides for the acquisition of major equipment and facilities (capital program) estimated to cost approximately \$914.8 million (\$21.4 million previously authorized and \$893.4 million to be requested between fiscal years 1976 and 1980). It is anticipated that all but \$34.8 million of the needed funds would be provided by new Federal capital grants.

The capital program is based on Amtrak's stated beliefs that

- --the passenger car and locomotive fleet must be modernized if dependable service is to be achieved;
- --maintenance and commissary facilities must be acquired and upgraded before it can significantly improve the level of service, increase efficiency, and introduce cost controls relative to these operations;
- --station renovations are necessary to meet essential passenger service needs; and
- --major right-of-way improvements are necessary to achieve a viable rail passenger service.

Amtrak also believes that the funding levels in the plan will allow it to carry out a planned equipment replacement program, accomplish the takeover of the necessary maintenance and commissary facilities to support its planned operations, and complete needed passenger station renovations. Because improvement of rights-of-way extends beyond Amtrak's needs and is a national problem involving large sums of money, the plan does not include a specific request for right-of-way funding, except for "spot" improvements. Major elements of Amtrak's capital program are summarized by fiscal years in the following table.

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	1980	Total 1976 through 1980	(note a)
				(mi	llions)		
Equipment: Passenger cars Locomotives	\$ 81.6 12.1	\$163.4 31.3	\$143.1 	\$ 45.3 9.8	\$ <u>-</u>	\$433.4 _53.2	
Total equipment	93.7	194.7	143.1	55.1	-	486.6	
Maintenance facilities	36.9	58.8	108.0	59.0	-	262.7	
Commissary facilities	2.6	2.8	1.1	-	-	6.5	
Other facilities	7.3	.8	.5	. 4	. 4	9.4	
Station renovations	8.7	20.5	6.5	8.0	5.7	49.4	
Right-of-way	10.0	10.0	10.0	10.0	10.0	50.0	
0ther	10.6	7.7	5.5	3.4	1.5	28.7	
	169.8	295.4	274.7	135.9	17.7	893.4	
Funds avaliable	<u>(34.8</u> )	10				<u>(34.8</u> )	
New capital grants required	\$135.0	\$295.4	\$ <u>274.7</u>	\$ <u>135.9</u>	\$ <u>17.7</u>	\$858.6	

a/Totals may not add due to rounding

### ASSESSMENT OF CAPITAL PROGRAM PLAN AND ESTIMATES

The data base for many of Amtrak's estimates was very limited and insufficient to realistically assess their reasonableness. This is particularly true with the capital cost estimates, which in many cases reflect management judgments of what it will cost.

### Maintenance facilities

Amtrak states that direct control of maintenance facilities is essential to its goals of increased efficiency, cost control and effective equipment utilization. The capital plan includes \$253.4 million in new requests for the acquisition and/or refurbishment of 19 major facilities and \$9.2 million for additional repair facilities and related items. This takeover program is geared towards selfsufficiency by Amtrak in terms of shops needed to provide periodic preventive maintenance other than turnaround servicing which is planned to continue on a contractual basis with the railroads.

Supporting data for the costs of the planned acquisitions and refurbishments indicates that estimates are not based on verifiable cost data. Additionally, because no commitments on price have been made between Amtrak and the owners of the facilities or contractors, these estimates should be considered as very tentative.

### Commissary facilities

Amtrak's plan includes the improvement of the quality and efficiency of its food service operations, thereby improving service to its passengers. Plans include the construction, purchase and/or refurbishment of 14 commissary facilities at a cost of \$7.4 million (\$.9 million previously authorized and \$6.5 million to be requested between 1976 and 1978). Except for one facility—Los Angeles, California—there were no firm commitments or contractual agreements on acquisition or construction prices.

#### Station renovations

The planned station renovations are those which Amtrak considers necessary to provide safe, clean, and comfortable facilities for the public and critical for attracting new passengers. The planned renovations are estimated to cost approximately \$53.7 million (\$4.2 million previously authorized and \$49.5 million to be requested over the 1976 through 1980 period). Of the total, \$17.5 million is applicable to station renovations on new routes for introduction over the 5-year period.

For the most part, the cost estimates are based on determinations of the specific work planned for each station. The supporting data for these estimates appear to be reasonable. However, the estimates must be considered tentative because there are no commitments or contractual agreements on the actual work to be performed and its ultimate cost.

### Right-of-way improvements

Amtrak only plans to request \$10 million annually over the 5-year period for minor right-of-way improvements. This \$10 million represents the funding level it feels is necesary to maintain the existing level of service and is based on past cost experience for such improvements.

Amtrak considers the need for major right-of-way improvements to be a national problem; therefore, it did not request funding for such improvements even though they are critical to the accomplishment of its long-term ridership and service goals. Amtrak estimates the improvements will cost approximately \$2.8 billion from 1976 through 1980. These costs are based on preliminary engineering investigations considered to be very conservative by Amtrak. Although detailed field investigations would provide a more reliable cost estimate, Amtrak believes the \$2.8 billion would be sufficient to fund improvements necessary to achieve longterm ridership and performance goals.

### Equipment

Amtrak believes that its planned equipment acquisitions will materially increase its ability to provide quality service. As a result, it projected a total of \$486.6 million needed to support its planned equipment expenditures during fiscal years 1976 through 1980. This represents about 57 percent of the total amount requested in the plan for new capital acquisitions and improvements. The table below summarizes the planned equipment acquisitions.

Type of equipment	FY 1976 through $\frac{1980}{(000 \text{ omitted})}$	n -
Passenger equipment:		
356 low-level cars	\$206,085	
187 long distance cars	173,842	
Convert baggage cars	18,200	
Self propelled cars	7,000	
4 diesel train sets	16,000	
Onboard communications	2,271	
Used cars to be modernized	20,437	\$443,835
Motive power equipment:		
66 new electric locomotives	52,015	
Locomotive conversions	1,200	53,215
Total		\$497,050

Based on our review of Amtrak's supporting documentation and discussions with Amtrak officials, we have the following general observations on the planned acquisitions, conversions, and modernizations of equipment.

- --Supporting documentation in some cases did not show the criteria or methodology used in either determining equipment needs or estimating the cost of acquisition, conversion, and modernization.
- --A calculation error in developing cost estimates for the 356 low-level cars resulted in an overstatement of \$9.6 million.
- --Amtrak may be required to modify the design of its new coaches, estimated to cost at least \$7 million, to provide improved mobility for handicapped passengers. This requirement, according to Amtrak officials, was not foreseen when the plan was developed.
- --Supporting documentation showing how the estimated costs for the 187 long distance cars were developed could not be found. However, by using the method-ology that the Amtrak official said was used, our calculations show the estimated costs to be overstated by \$4 million.
- --Supporting documentation for the diesel train sets shows the need for only two train sets costing \$8 million. Two additional train sets were added because of a management judgment that four train sets were needed. No documentation was available supporting the need for the additional train sets.
- --There was no supporting documentation found for the \$20.4 million estimated cost for used car modernization.

Before fiscal year 1976, Amtrak obligated \$396.9 million to purchase 492 Amfleet cars and 235 bilevel cars with deliveries to begin in June 1975 and to be completed during fiscal year 1978. These purchases are being financed under Amtrak's loan guarantee authority. Although these commitments do not require funding in the 1976 through 1980 capital budget they will have an impact on the determination of additional passenger car equipment needs.

Amtrak's planned purchase of 356 additional lowlevel cars and 187 bilevel cars is directed toward providing adequate seating capacity to accommodate projected ridership levels. In addition, these planned purchases will enable Amtrak to substantially modernize its car fleet with new equipment. To a large degree these planned acquisitions are based on Amtrak's goals of providing quality service and modernizing its car fleet.

However, our analysis of the planned equipment acquisitions and car availability during fiscal years 1976 through 1980, shows that with Amtrak's projected ridership growth it will have 135 cars over its seat mile capacity needs for fiscal year 1976, 135 for 1977, 110 for 1978, and 49 for 1979. In 1980, if total projected ridership growth is realized, Amtrak would have about 82 cars below its needed seating capacity.

If, on the other hand, Amtrak does not realize its projected ridership growth, its excess seating capacity will be even greater. For example, if ridership growth merely continues at the rate experienced between calendar years 1973 and 1975, excess capacity would be as much as the following.

<u>Fiscal year</u>	Number of excess cars					
1976	247					
1977	394					
1978	500					
1979	529					
1980	482					

We believe the above situation shows the need for market assessment in considering the relationship between projected ridership and equipment needs in developing the 5-year plan. If this should occur Amtrak could have the option of replacing older cars more rapidly than planned. 5-year plan was submitted to the Congress in August 1975, some changes, especially in equipment acquisitions, are being planned. For example, the 5-year plan showed the planned acquisition of 356 low-level cars including 116 sleeper cars at \$675,000 each and 71 diner cars at \$625,000 each. of February 1976, Amtrak was considering foregoing acquisition of the sleepers and diners. Instead, Amtrak is considering using these funds to expand food service facilities in some new Amfleet cars and also to convert existing sleeper cars at an estimated unit cost of between \$175,000 and \$300,000. Because a final decision had not been made on changing the initial plan or on the number of cars to be converted or refurbished, we were not able to determine the net effect such changes would have on the total projected equipment costs.

In addition, the situation in the Northeast corridor has reached the stage where Amtrak will have to make some critical decisions which will greatly affect the corridor operations and both equipment and operating costs. Because of the importance of the Northeast corridor situation it is discussed separately in chapter 5.

#### CONCLUSIONS

Amtrak's capital program is oriented toward modernizing its equipment and facilities to make Amtrak more attractive to travelers. Because of the magnitude of the capital investment required it is important that it be used to provide the type of equipment and facilities that will attract riders in sufficient numbers to justify the investment.

These decisions need to be based on studies of the ridership potential in the markets served by Amtrak and the equipment and facility characteristics that are critical to attracting the potential riders to train travel. Many of Amtrak's planned investments represent management's judgment of what is needed. In the absence of indepth market studies for each of Amtrak's current and proposed routes, the appropriateness of Amtrak's planned investments is uncertain.

#### RECOMMENDATIONS TO THE PRESIDENT OF AMTRAK

To develop the modern nationwide rail passenger service specified in the Rail Passenger Service Act of 1970, substantial investments in new or upgraded equipment and facilities are necessary. To better identify the extent and types of investments, we recommend that Amtrak:

- --Make a concerted effort to study, indepth, the ridership potential in the markets it now serves and plans to serve in the future and the investments in equipment and facilities necessary to attract that ridership to train travel.
- --Use the results of these indepth studies as part of its basis for investment decisions.

In his March 25, 1976, letter, the president of Amtrak expressed general agreement with the facts as reported and with our recommendations.

#### CHAPTER 5

#### NORTHEAST CORRIDOR PROBLEMS AND THEIR IMPACT

#### ON CURRENT AND FUTURE OPERATIONS

Some of Amtrak's most heavily traveled trains operate in an area commonly referred to as the Northeast corridor. The corridor basically encompasses the routes from Washington, D.C., to Boston, Massachusetts. During fiscal year 1975 about 27 percent of Amtrak's total revenue passenger miles occurred on the corridor routes.

Amtrak's passenger services in the Northeast corridor are provided primarily by two types of trains—metroliners and locomotive—hauled conventional trains. Metroliners are electrically driven, self—propelled passenger cars capable of operational speeds up to 105 miles per hour. Normally coupled together so as to form trains of from 4 to 6 cars, the metroliners provide 3-hour commuter service between Washington, D.C., and New York City.

Conventional trains are those normally composed of a locomotive and passenger cars. These trains are of commuter, short-distance, or long-distance configuration, depending on the number and types of passenger cars and train destination. Throughout most of the Northeast corridor, the motive power for these trains is provided by General Electric GG-l electric locomotives. These locomotives have been in service more than 35 years, have a maximum operational speed of 85 miles per hour, and, because they are no longer in production, often require custom made parts for repairs. The GG-ls are capable of providing approximately 4-hour service between Washington, D.C., and New York City.

Amtrak operates the GGol conventional trains and metroliners between Washington, D.C., and as far north as New Haven, Connecticut, because this portion of the Northeast corridor track is electrified. Diesel or turbine powered trains are generally used to provide Amtrak service between New Haven, Connecticut, and Boston, Massachusetts.

The metroliners and conventional trains are extremely expensive to operate and maintain, and have been subject to steadily decreasing reliability. Frequent maintenance and repair work are required to keep the GG-1 locomotives in operation, resulting in an increase in maintenance costs

from the monthly average of \$5,814 per locomotive (\$.83 per locomotive mile) during 1974 to \$7,175 (\$.98 per locomotive mile) during 1975. The passenger cars being used with the GG-1s are also overaged and expensive to maintain. The maintenance costs for these cars have also increased from 33 cents per car mile during 1974 to 36 cents per car mile during 1975.

Metroliners, originally constructed in 1966 as an experimental high-speed transportation system, have always been trouble-prone mechanically and have required considerable engine maintenance per passenger mile because each car has its own propulsion engines.

Metroliner cars are more expensive to maintain than GG-1 trains. The costs have increased from a monthly average of \$6,188 for each car (approximately 44 cents per car mile) during 1971 to \$13,825 (99 cents per car mile) during 1975. The metroliner out-of-service ratio averaged 28 percent during 1974 and 1975. By 1974, the metroliners were nearing the point where the need for major overhauls and refurbishment was becoming critical to the continuance of the existing level of metroliner service. Removing metroliner cars from service for engine or other maintenance has a greater effect on Amtrak revenue receipts because the source of motive power is not separable from the passenger carrying capability.

# E-60 ACQUISITION FOR CORRIDOR OPERATIONS

Soon after Amtrak was established in May 1971, Amtrak officials realized that the costs involved in operating GG-ls and metroliners were high and there was a need to buy new equipment. Additional incentive for replacing the GG-l also occurred because the New York Metropolitan Transit Authority planned to modernize the electric current for part of the Northeast corridor track--a change which the obsolete GG-l could not be modified to accept.

After contacting various U.S. locomotive manufacturers, Amtrak found that because U.S. railroads had for years concentrated on freight operations and neglected passenger services, these manufacturers could offer only modified freight locomotives in response to Amtrak's search for a new electric passenger locomotive. European passenger locomotives were an alternative, but these would have taken nearly 3 years to arrange for and complete testing and modification, and then deliver in quantity. Amtrak, therefore, began to consider the General Electric E-60 CP electric locomotive as the replacement for the GG-1.

The E-60 was a variation of General Electric's EE-50 freight locomotive which was designed to pull up to 95 freight cars at speeds of from 45 to 55 miles per hour. A heavy (375,000 pounds), six-axle locomotive, the E-60 was to be fitted with electric motors capable of maintaining 120 mile per hour speeds while pulling an 18 car passenger train.

In conjunction with plans to buy the E-60, Amtrak also planned to buy new single level "Amfleet" passenger cars for use with the E-60 locomotive in the Northeast corridor. The Amfleet cars were to be built with a 120-mile per hour capability and were intended primarily to replace the overage passenger cars in use in the corridor and on other eastern routes.

Amtrak expected that the E-60 Amfleet combination would operate at maintenance cost levels up to 50 percent less than those of existing trains while at the same time having sufficient operational speed, acceleration, and reliability to eventually reduce the total trip time between Washington and New York from approximately 4 to 3 hours.

The E-60/Amfleet combination capability to meet 3-hour schedules between Washington, D.C. and New York would enable Amtrak to replace the mechanically troubled and expensive-to-maintain metroliners with this equipment. Replacing the metroliners with E-60 powered equipment appeared very attractive to Amtrak from the standpoint of maintenance costs and passenger revenues. Amtrak's plan, therefore, was to use the E-60/Amfleet combination for nearly all Northeast corridor operations.

During March and October of 1973, Amtrak contracted to purchase 26 of the E-60 electric locomotives and later 212 (out of a total order of 492) Amfleet passenger cars for use in the Northeast corridor. Delivery of the E-60 was to begin in June 1974; delivery of Amfleet cars was to begin in May 1975. The purchases of additional E-60 type locomotives and Amfleet cars were planned to replace the metroliners after the introduction and satisfactory performance of the new equipment replacing the GG-1 trains.

#### E-60 PERFORMANCE PROBLEMS

The contractor was unable to meet the June 1974 delivery date. Production of the first E-60 locomotives was completed in November 1974, and test trials were begun soon thereafter.

The E-60 locomotive at first appeared to be fully capable of meeting or exceeding all test requirements. However, on February 24, 1975, during the last scheduled test run prior to full acceptance by Amtrak, the E-60 test locomotive derailed at 100 miles per hour on a section of Northeast corridor track over which the E-60s were scheduled to operate at speeds up to 110 miles per hour in regular passenger service.

The subsequent investigation by the National Transportation Safety Board concluded that the derailment was caused by excessive side to side movement between the locomotive body and trucks (wheel assemblies) under certain characteristics of acceleration and speed, resulting in excessive pressures on the rail and subsequent rail displacement and engine derailment. Subsequent to the findings and recommendations of the Safety Board, the Federal Railroad Administration then placed an 80 mile per hour speed limit on the E-60 locomotives used for passenger service on Class 6 (110 miles per hour) track. Because this limitation made the E-60s unacceptable to Amtrak, the contractor and Amtrak engineers began joint efforts to improve the design of the wheel assemblies.

By November 1975, the Federal Railroad Administration was sufficiently satisfied with the design improvements to raise the E-60 speed restriction to 85 miles per hour, with the intention to further raise the speed limitation to 95 miles per hour if no unfavorable performance characteristics developed over a 90-day period of 85 mile per hour operation. The Federal Railroad Administration further indicated that approval for higher speeds would be considered as the wheel assembly design continued to be improved.

Amtrak decided in November 1975 to accept E-60 Iocomotives and place them in regular service where this would not result in slippage of schedules currently being maintained by the GG-1 locomotives. As of January 31, 1976, Amtrak had accepted 6 E-60 locomotives and expected to accept the remaining 20 in the near future. Amtrak officials told us they are confident the E-60 will eventually perform satisfactorily at speeds of 110 miles per hour and indicated that the earliest possible date for approval of these speeds for passenger services would probably be in April or May 1976.

As a result of problems experienced with the E-60, Amtrak is now arranging for the leasing of a Swedish locomotive, the ASEA RC-4, for testing in the Northeast corridor as a possible replacement for the metroliner and GG-ls.

#### IMPACT OF E-60 PROBLEMS ON THE 5-YEAR PLAN

Amtrak originally intended that the E-60/Amfleet combination would eventually replace the metroliner, which is extremely expensive to operate and maintain. Because of the subsequent speed restrictions on the E-60 and the need for E-60 locomotives to replace GG-ls, it now appears that Amtrak has postponed this intention at least until such time as additional electric locomotives are obtained. Consequently, Amtrak will have to continue using the metroliner for an indefinite time.

#### Metroliner acquisition and overhaul

Since all 61 metroliner cars are being leased by Amtrak from the Penn Central Transportation Company (49 cars) and the Budd Company (12 cars), Amtrak will be forced to complete new arrangements for using the 49 cars leased from Penn Central if metroliner service is to continue after Penn Central assets are acquired by the Consolidated Rail Corporation under the Regional Rail Reorganization Act of 1973 (Public Law 93-236). scheduled to occur on April 1, 1976. In addition, Amtrak locomotive specialists informed us that the metroliner will have to begin undergoing major repairs--\$225,000 to \$600,000 per car, depending on the extent of the repairs-soon after March 1976 or metroliner service will be increasingly curtailed due to mechanical failures. Amtrak management has indicated that no Amtrak funds will be spent on extensive refurbishment of equipment not owned by it, it seems that Amtrak may have to purchase all 61 metroliner cars, at a cost of as much as \$350,000 each.

At present, it is unclear whether Amtrak would purchase the 49 metroliners directly, or acquire them through ConRail or another Government agency or continue some form of lease arrangement. In any case, it appears likely that the Federal Government may have to pay as much as \$21.4 million for purchasing the 61 metroliner cars if this service is to be continued by Amtrak. According to Amtrak the estimated cost to acquire the metroliner cars was intentionally not included in Amtrak's 5-year plan because of the financial uncertainties involved.

Metroliner refurbishment and major repair costs, however, seem to be necessary for continuing metroliner service. The costs will range between \$12.8 million and \$34.2 million, depending on the extent of refurbishment and repair decided. Because we could find no provision

for these acquisition and refurbishment costs in the 5-year plan, it seems that the costs in the plan will increase by between \$35 million and \$56 million. In addition, some passenger revenue loss may be incurred while metroliner cars are undergoing overhaul and refurbishment. This possible revenue loss would be affected by the extent and type of repairs and refurbishment performed.1/

#### Lease of the ASEA RC-4 locomotive

The problems that developed with the E-60 locomotive raise doubts as to its potential as a replacement for the metroliner. Consequently, Amtrak contracted to lease a Swedish electric locomotive, the ASEA RC-4 modified for U.S. operations, and to test it on the Northeast corridor. The cost of shipping the locomotive, modifying it for U.S. rail operations and testing is estimated to be approximately \$.8 million and this will be in excess of the amount shown in the 5-year plan. The acquisition costs of additional locomotives, if a decision is made to replace metroliner power in the corridor, will also be in addition to the costs shown in the plan.

Because of the lead-time requirements for testing and production, a decision to acquire the ASEA RC-4 locomotive as a replacement for the metroliner, will not eliminate the need to acquire and overhaul the metroliners if the current level of corridor operations is to be continued.

#### Summary of cost impact

The problems associated with the E-60 locomotive and the metroliners will require expenditures that were not included in Amtrak's 5-year plan. The following schedule summarizes the additional equipment and related costs discussed in this chapter that were not included in the 5-year plan.

<sup>1/</sup>Amtrak's most recent estimate of the possible passenger revenue loss was developed in April 1974, and cited a range of \$3.9 million to \$27.7 million depending on the extent of work. Although a more recent estimate has not been developed, Amtrak officials currently believe that the potential revenue loss will be much less than was indicated by the 1974 estimate.

<u>Action</u> w	Estimated cost (millions)
Metroliner purchase (note a)	\$21.4
Metroliner repair (note b)	12.8 to 34.2
ASEA RC-4 lease	.8
Total	\$35.0 to \$56.4 (note c)

- a/Purchase costs would be offset by an annual \$2.1 million in leasing costs which are included in the operating cost estimates.
- b/Depends on the extent of overhaul required.
- c/Does not include an estimate for possible passenger revenue loss.

#### CONCLUSIONS

The Northeast corridor situation will probably require Amtrak to incur capital costs that were not reflected in the 5-year plan. If this occurs, Amtrak will either require Federal capital funding in excess of what it indicates in the plan or it will have to reconsider its planned capital expenditures in other areas to compensate for these additional expenditures for the Northeast corridor.

#### CHAPTER 6

#### AMTRAK'S FINANCIAL CONDITION

Between fiscal years 1972, the first full year of Amtrak operations, and 1975, Amtrak has incurred an operational loss in every fiscal year; the 1975 loss was more than double the 1972 loss. This occurred because operating costs continued to increase at a faster rate than operating revenues. As a result, Federal operating subsidies have also had to be increased to keep Amtrak going. However, as shown in the following table, the Federal operating subsidies have been less than the operating losses. This occurred because the operating loss includes costs that do not require appropriations, such as depreciation.

		Fiscal year totals (note			e a)	
	1972	1973	1974	1975	Total	
	(millions)					
Sales (revenues) Operating costs	\$152.7 306.2	\$177.3 319.1	\$240.1 438.0	\$246.5 559.8	\$ 816.6 1,623.1	
Operating loss Federal subsidy	153.5 $102.7$	141.8 103.1	197.9 127.5	313.3 301.3	806.5 634.6	
	\$ 50.8	\$ 38.7	\$ 70.4	\$_12.0	\$ 171.9	

a/These figures were taken from Amtrak's financial statements and were not verified.

Amtrak's overall financial position has reached the point where

- --current assets are insufficient to liquidate current liabilities,
- --total assets are insufficient to liquidate total liabilities, and
- --Amtrak's net worth has been reduced from a positive \$123.7 million to a negative \$9.1 million.

The table shown on the following page summarizes Amtrak's financial position at the end of fiscal years 1972, 1973, 1974, and 1975, and the first 6 months of 1976.

# Amtrak's Financial Position (millions)

	Year ending June 30, 1972	Year ending June 30, 1973	Year ending June 30, 1974	Year ending June 30, 1975	Midyear December 31, 1975
Current assets	<sup>a</sup> \$ 97.9	<sup>a</sup> \$100.2	\$ 73.6	\$ 37.3	\$ 62.3
Fixed assets	21.0	81.4	205.2	350.4	464.8
Other assets	54.7	4	3.2	11.8	11.2
Total (note b)	\$ <u>173.7</u>	\$ <u>182.0</u>	\$ <u>282.0</u>	\$ <u>399.5</u>	\$ <u>538.3</u>
Current liabilities	\$ 33.0	\$ 83.9	\$103.8	\$318.7	\$ 66.1
Long term liabilities	17.0	13.2	<u>163.6</u>	87.8	481.3
Total liabilities (note	b) 50.0	97.1	267.4	406.6	547.4
Net worth	a <u>123.7</u>	a <u>84.9</u>	14.6	<u>(7.1</u> )	<u>(9.1)</u>
Total liabilities and Net worth (note b)	\$ <u>173.7</u>	\$ <u>182.0</u>	\$282.0	\$ <u>399.5</u>	\$ <u>538.3</u>

a/Current assets for these years include payments due to be received from the railroads as part of the railroads compensation to Amtrak for taking over their routes as stipulated by Section 401 of the Rail Passenger Service Act of 1970. These amounts of \$65 million and \$55 million, respectively, are an extraordinary source of funds and account for the high level of current assets in these years. These payments were made over 36 months and were completed in April 1974. Amtrak's net worth for these periods also reflect these pending payments.

b/Totals may not add due to rounding.

Beginning in fiscal year 1973 Amtrak began a major equipment replacement program financed by both short—and long-term loans secured under Federal guaranteed loan authority. Because the combination of operating revenue and Federal subsidy was not sufficient to cover operating costs these loans could not be repaid and their debt continued to increase to the point where the ratio of total assets to total liabilities had dramatically decreased. As a result, Amtrak's total assets are insufficient to liquidate its liabilities.

Ending pe	eriod		Total liabilities s of dollars)	Ratio
June 30,	1972	a/\$173.7	\$ 50.0	a/3.474
June 30,		a/ 182.0	•	$\frac{2}{a}/1.874$
June 30,	1974	281.9	267.4	1.054
June 30,	1975	399.5	406.6	.983
December	31, 1975	538.3	547.4	.983

a/Total assets and the ratio for these periods include pending payments from the railroads (see footnote a on page 37). If these pending payments are excluded from the ratio calculation, the ratios for these periods would be 2.174 and 1.307, respectively.

Two other useful measures in assessing Amtrak's financial condition are the ratios of sales (revenues) to current liabilities and current assets to current liabilities. These ratios are presented in the following chart.

Ending period	<u>Sales</u>	Current assets	Current liabilities	Ratio sales: current liabilities	Ratio current assets: current liab.
June 30, 1972 June 30, 1973 June 30, 1974 June 30, 1975 Dec. 31, 1975	\$152.7 177.3 240.1 246.5	a \$ 97.9 a 100.2 73.6 37.3 62.3	\$ 33.0 83.9 103.8 318.7 66.1	4.62 2.11 2.31 .77	<sup>a</sup> 2.97 a1.19 .71 .12 .94

a/The current assets and the ratios of current assets to current liabilities for these periods include the pending payments from the railroads (see footnote a on page 37). If these pending payments are excluded from the ratio calculation, the ratios for these periods would be 1.0 and .54, respectively.

Since June 30, 1974, the ratio between Amtrak's current assets and current liabilities indicates that Amtrak's current assets are not sufficient to liquidate its current liabilities.

# ASSESSMENT OF AMTRAK'S FINANCIAL CONDITION

Based on our analysis of Amtrak's financial statements 1/2 and the projections for fiscal years 1976 through 1980, it is apparent that Amtrak will continue to require substantial Federal support for both operating subsidies and capital acquisitions if it is to continue.

The combination of Amtrak's continued need for (1) Federal operating subsidies to offset losses and (2) capital program funding through Federal guaranteed loans, will result in a continued deterioration in its financial position.

Unless the combination of Amtrak's operating revenues and the Federal operating subsidies begins to exceed its operating costs in the future years, Amtrak will be unable to pay off any of its outstanding debt. To the extent that the above combination is less than its operating costs and if Amtrak continues to fund its capital acquisition through available Federal guaranteed loan authority, Amtrak's financial condition will continue to deteriorate. Before fiscal year 1976, Amtrak financed capital acquisitions through the use of loans which were guaranteed by the Secretary of Transportation. Amtrak's loan authority totals \$900 million. As of December 31, 1975, Amtrak still had unused guaranteed loan authority of approximately \$400 million.

Starting in fiscal year 1976, the Congress also authorized capital grants to Amtrak for this purpose, amounting to \$111.2 million. The funding of future capital acquisitions with Federal grants rather than loans will result in Amtrak's improved financial condition as the value of its fixed assets increases with these federally funded capital acquisitions. However, if the Federal operating subsidy continues to be less than Amtrak's loss from operations, the unfunded loss will have an adverse effect on Amtrak's equity position.

<sup>1/</sup>Amtrak's financial statements are audited annually by independent certified public accountants.

Since 1972 the Federal operating subsidy has constituted a large portion of Amtrak revenues as follows:

#### Operating Subsidy as a Percentage of Amtrak Revenues

_	<u>1972</u>	1973	1974	<u>1975</u>
	40.2	36.8	34.7	55.0

Based on our analysis of Amtrak's projections for fiscal years 1976 through 1980, the need for considerable Federal subsidies will continue. Using the adjusted operating subsidy figures developed in chapter 3 and Amtrak's estimates of operating revenue—which we believe to be optimistic as indicated in chapter 2—the total revenues represented by the Federal operating subsidy will be as follows:

Fiscal <u>year</u>	Operating revenues (	Operating subsidy millions)	<u>Total</u>	Subsidy as a percent of total
1976 Transition quarter 1977 1978 1979 1980	\$ 314.0 99.0 389.0 447.0 506.0 577.0	\$ 356.6 105.0 500.9 554.0 548.2 516.1	\$ 670.6 204.0 889.9 1,001.0 1,054.2 1,093.1	53.2 51.5 56.3 55.3 52.0 47.2
Total	\$2,332.0	\$ <mark>2,580.8</mark>	\$4,912.8	52.5

#### CONCLUSIONS

Amtrak's financial condition is such that it has been and will be, for the foreseeable future, heavily reliant upon Federal funding to carry out its operations. Even with the increasing levels of Federal funding it has received, Amtrak's financial condition has declined.

If Amtrak is to continue operations and improve its financial situation, considerable Federal support in the form of both operating subsidies and capital grants is essential.

# CHAPTER 7 SUMMARY OF FEDERAL SUBSIDIES FOR PASSENGER TRANSPORTATION

Vy. 5.

In an effort to determine the amount of Federal subsidies that have been made available for the various modes of transportation, we found that there is no standard Government usage of the term subsidy and that comparable data on the level of Federal subsidy is limited. We did, however, obtain some information on the total level of Federal expenditures for all transportation modes and a limited analysis of subsidies for passenger transportation.

#### FEDERAL EXPENDITURES BY MODE

Federal expenditures for all transportation modes totaled about \$11.3 billion for fiscal year 1974 and, based on Federal budget proposals, expenditures are estimated to increase to \$12.7 billion in fiscal year 1975 and \$13.6 billion for fiscal year 1976. The following table shows the breakdown of these totals by transportation mode.

Modal	Federa	l expendi		
<u>system</u>	1974 (	<u>1975</u> billions)	1976	
Highway	\$ 4.9	\$ 4.9	\$ 5.2	
Air	2.5	2.7	3.0	
Rail	.7	.9	. 7	
Water	1.9	2.1	2.4	
Pipeline	.1	. 2	. 2	
Transit	1.3	1.9	2.1	
Total (note a)	\$11.3	\$12.7	\$ <u>13.6</u>	

a/Because of rounding, total 1974 expenditures are less than the sum of expenditures by modes.

The only major change in the distribution of Federal transportation program expenditures in the budget proposals is the increase in expenditures for the transit mode. The amount shown for the rail mode reflects legislative authorizations at the time of the President's budget proposals. Actual Federal expenditures for the rail mode will probably be greater than those projected because of the recently enacted Railroad Revitalization and Regulatory Reform Act of 1976. Federal spending on the highway mode is also likely to exceed the amounts shown because of increased expenditures authorized for the Federal Aid to Highways program.

These amounts include the following type of Federal expenditures.

Type of Expenditure	1974 Expenditures (billions)	Percent of Total 1974 Expenditures
Financial assistance Facilities and supporting	\$ 6.900 ng	61
services	2.500	22
Research and development	1.100	9
Safety	.800	7
Economic regulation	.067	_1
	\$ <u>11.367</u>	100

Expenditures for Federal financial assistance and facilities and supporting services are those directly provided to a particular entity. Financial assistance consists of funds and related technical assistance provided to States, local governments, and private businesses for use in constructing, operating and maintaining transportation systems, facilities and equipment. Facilities and supporting services represent expenditures for Federal transportation facilities and technical services used by individual citizens and privately owned companies as a basic and integral part of their transportation activities. Not all of these Federal expenditures, however, represent subsidies. Many are funded from special trust funds (the Highway Trust Fund). For other expenditures there is a fee for using the facilities or receiving the technical assistance or service.

#### LEVEL OF SUBSIDY BY MODE

We found that there is no standard Government usage of the term subsidy. Comparable data on the level of Federal subsidy to the various transportation modes is limited. The Department of Transportation, however, did attempt to compare the level of subsidies to the various transportation modes for fiscal year 1974. The Department defined a subsidy as the total Federal expenditure minus the user charges received. Federal expenditures from trust funds, such as the Airport and Airways and the Highway trust funds, are not included in the net subsidies. The following table compares the total net Federal subsidy for passenger and freight transportation.

Total Net Federal Transportation Subsidies--Fiscal Year 1975
[In thousands of dollars]

	Aviation	Urban mass transportation	Highways	Railroads	Marine	Pipelines	Totals
1. Federal grants less user	•						
charges	73,462	925,500	621,270	205,204	428,176	0	2,253,612
2. Federally caused cross sub- sidies	0	96,000	toe noot	0	0	0	0
3. Federal services and facil- ity operations less user		30,000	(96,000)	ų	U	U	. 0
charges4. Assumption of legal risks	593,000	Q	0	0	1,121,377	0	1,714,377
4. Assumption of legal risks	8,000	Q	Unknown	Q	NIT	Ō	8,000
5. Deferred tax payments	0	O	.0	Q	13,466	0	13,466
6. Federal R.&D. and plan- ing	280,810	120,500	. 0	24,350	40,000	NIT	465,660
tory costs	18,000	7,000	20,000	2,000	35,000	0	82,900
Subtotals	973,272	1,149,000	545,270	232,454	1,638,019	NET	4,538,015
Less International	23,720	*	18,000		832,792		874,512
Total Domestic Subsidies	949,552	1,149,000	527,270	232,454	805,227	•	3,663,503

Only four of the above modes—aviation, urban mass transportation, highways, and railroads—receive net subsidies applicable to passenger transportation. Below is a breakout of the net Federal subsidies for domestic travel between passenger and freight transportation.

## Fiscal Year 1974 (billions)

		Passenger	Freight	<u>Total</u>
Urban mass trans Aviation Highway Railroads Marine	portation	\$1.149 .929 .125 .142	\$ - .021 .402 .090 .805	\$1.149 .950 .527 .232 _805
Total		\$ <u>2.345</u>	\$ <u>1.318</u>	\$ <u>3.663</u>

Of the total net Federal subsidies for domestic passenger travel in 1974, urban mass transportation received 49 percent, aviation received 40 percent and railroads and highways received 6 percent and 5 percent respectively.

These net subsidies exclude Government assistance funded from trust funds set up with special taxes. For instance during fiscal year 1974 \$879 million was disbursed from the Airport and Airways Trust Fund and \$4.8 billion was disbursed from the Highway Trust Fund.

#### INCREASING SUBSIDIES TO RAILROADS

Since fiscal year 1974, the level of net Federal subsidy to the railroads has increased. Based on Amtrak's experience and new legislation passed since fiscal year 1974, that level of subsidy will continue to increase because:

- --Amtrak's operating losses requiring Federal subsidy are projected to continue increasing at least through FY 1978. (See pp. 20 and 40.)
- --Some of Amtrak's future capital acquisitions are planned to be funded by Federal capital grants (See pp. 22 through 27.)
- --Right-of-way improvements critical to Amtrak operations will have to be funded by the Federal Government. The cost of these improvements is conservatively estimated at \$2.8 billion. (See p. 24.)
- --The Railroad Revitalization and Regulatory Reform Act of 1976 (Public Law 94-210) includes a requirement that Amtrak acquire and improve the Northeast corridor. The act authorized a total of \$1.866 billion for the Northeast Corridor Project of which \$1.6 billion may be used for right of way improvements. This may reduce the estimated \$2.8 billion requirement for critical nationwide right-of-way improvements.

#### CHAPTER 8

#### AMTRAK'S QUALITY OF SERVICE TO PASSENGERS

During fiscal year 1975, Amtrak carried about 17 million passengers over its 25,000 route miles. This was done, for the most part, with equipment that was old and rundown. As a result, some passengers did not leave or arrive on time, others experienced heating and cooling problems because of mechanical or electrical failures enroute, and still others rode in dirty and leaky cars. However, despite numerous individual criticisms, there seems to be a large segment of Amtrak's riders that are apparently satisfied with the level of service being provided.

#### OBSERVATIONS ON AMTRAK SERVICE

In 1973 GAO issued three reports on various aspects of Amtrak's passenger service. These reports, which are identified below, were made to the Subcommittee on Transportation and Aeronautics of the House Committee on Interstate and Foreign Commerce.

- -- "Amtrak Needs to Improve Train Conditions Through Better Repair and Maintenance" (B-175155, June 21, 1973).
- -- "Railroad Reservation, Information and Ticketing Services Being Improved" (B-175155, Aug. 22, 1973).
- -- Fewer and Fewer Amtrak Trains Arrive on Time--Causes of Delays (B-175155, Dec. 28, 1973).

These reports identified numerous deficiencies in Amtrak's on-time performance, repair and maintenance activities, reservations, and information and ticketing services. In addition to describing the situation that existed in 1973, the reports either offered recommendations for improving service or identified actions that Amtrak was taking or was planning to take to improve service.

The degree to which Amtrak will be able to succeed in developing a viable national rail passenger system will depend largely on whether the service provided meets passenger expectations.

Concurrently with our work on Amtrak's 5-year plan, we were doing work to assess the adequacy of Amtrak's equipment repair and maintenance activities and the impact of these activities on the quality of service.1/

Our observations are based on

- --trips we made on 46 Amtrak trains and our discussions with passengers aboard these trains,
- -- the results of a questionnaire we distributed to 579 passengers aboard 8 of those 46 trains,
- --a survey of the record of testimony of Interstate Commerce Commission (ICC) hearings held during March 1975 through June 1975 to obtain the public's views on the quality of Amtrak's service,
- --physical inspection of 584 Amtrak passenger cars, and
- -- the survey of Amtrak complaint data and ICC complaint data and field inspection reports.

### Passenger Reactions to Amtrak Service

To obtain some current indications of passenger attitudes toward Amtrak's service, we rode eight trains during September and October 1975 and distributed a questionnaire to the passengers asking them to rate Amtrak's service. Questionnaires were given to 579 passengers of which 222 were completed and returned to us. The majority, 173 (78 percent), judged the overall service as good, 41 (18 percent) rated it as fair, and 8 (4 percent) as poor. The respondents' evaluations of various aspects of Amtrak service is tabulated on the following page.

<sup>1/</sup>GAO is required under the Amtrak Improvement Act of 1974 (45 U.S.C. 644) to make an annual performance audit of various Amtrak activities. The referenced concurrent work was being carried out in fulfillment of this legislative requirement. Our full report on this subject is expected to be issued to the Congress in May 1976.

Aspects of Service	No Rating	Good	Fair	Poor
Trains:		•		
Cleanliness Restroom facilities (note a)	6 <del></del>	158 121	47 91	11 29
Conduct of personnel Heating/air conditioning Food quality	4 12 32	174 111 110	37 69 60	7 30 20
Stations:	·			
Location Cleanliness Train information Reservations Baggage services Conduct of personnel	19 6 5 22 65 4	138 138 167 168 111 177	47 52 35 22 26 32	18 26 15 10 20
Overall level of service:		173	41	8

<u>a</u>/Exceeds 222 because husbands and wives both gave a rating on the same questionnaire.

In addition to the questionnaire, which was distributed on 8 of the trains that we rode, we talked with many passengers during the course of 46 trips. Our discussions indicated that criticisms, primarily directed at the overall cleanliness of the trains and air conditioning failures, are still numerous.

Many passengers told us that train service had improved since Amtrak entered passenger train service. However, there were criticisms of overcrowding, rough rides, failure to be on-time, and slow train service. Many of the passengers indicated considerable satisfaction with the food served in the dining cars and most of the passengers riding in Amtrak's newest passenger cars said they were very pleased with the riding comfort. Despite the numerous criticisms expressed by some of the passengers, many of them told us they were completely satisfied with Amtrak service.

### Condition of Amtrak passenger cars

Most of the passenger cars we examined departed in what we believe was satisfactory condition, although we did observe many cars with dirty or fogged windows, worn

upholstery, soiled carpeting and a myriad of other unsightly conditions. On the other hand, some cars, in our opinion, were so unsightly as to be unfit for service.

We inspected 23 long-distance trains, consisting of 254 passenger cars, just prior to departure from Los Angeles, California, from June 16 to 22, 1975, and from Seattle, Washington, from July 9 to 14, 1975. During our inspections we observed the following deficiencies in appearance.

	Number of cars with defects			
Defect observed	Los Angeles	Seattle	Total	
		_		
Worn carpet	15	. 3	18	
Soiled carpet	74	41	115	
Worn upholstery	31	15	46	
Soiled upholstery	25	22	47	
Dirty ashtrays	4	8	12	
Cracked windows	26	8	34	
Pitted windows	12	4	16	
Fogged windows	35	31	66	
Dirty windows	100	3	103	
Dirty exteriors	29	7	36	
Chipped/peeling exterior	29	3	32	
Dirty/torn window shades	4	17	21	
Dirty tile floors	20	3	23	
_	$\overline{404}$	165	569	

In the East, Midwest and West, we rode Amtrak trains and observed, while in operation, the cleanliness and condition of 330 cars and the quality of service provided by Amtrak personnel. We rode trains operating in the Northeast corridor between Boston and Washington, D.C.; medium distance daytime coach trains between New York City and Detroit; and long distance overnight trains between New York City and Florida, Washington, D.C. and California, and Los Angeles and Seattle.

During these trips we rode Metroliners, turbo trains, and conventional trains. We observed 302 defects that affected passenger safety, comfort or convenience on the 330 cars we rode.

#### Unsafe conditions

Diaphragm safety curtains are used in the passageway between cars to prevent passengers from placing their fingers into the gap where the cars are joined. On 24 cars on 4 trains, the safety curtains were missing or unattached. In some cases, the attaching devices were so worn that the curtains would not remain in place. All safety curtains

were missing or inoperative on a train between New York City and Albany, New York, which consisted of three coaches and a snack bar car. Three cars on this train also had worn exterior door latches and the upper half of the door would not remain closed.

Interior car doors have an automatic door opening mechanism and a manual door handle for use in the event the automatic opener fails. The manual door handle on one car on a train operated between New York City and Jacksonville, Florida, had been covered and could not be used.

Six cars on three trains between New York and Albany, New York, and one car on a New York to Jacksonville, Florida, train had at least one broken seat. Water leaked through the roof of one car in Northeast corridor service. Water was dripping from an electric light fixture creating an electrical hazard, and accumulating on the floor creating a slippery condition. No action was taken enroute to correct the situation.

#### Conditions affecting passenger comfort

Of the 144 cars 19 had defects which affected passenger comfort; 10 had air conditioning failures. One train in New York to Florida service had air conditioning failures in a diner, a lounge car, a sleeper, and in 4 of its 10 coaches. However, there was sufficient space in cool coaches to accommodate all coach passengers. Two cars had suspension problems causing rough rides. One car was leaning considerably to one side and the other was vibrating excessively more than other cars. Also, a car on a Florida train and another in New York City to Albany, New York, service leaked water around a window.

On one train between Boston and New York which consisted of four of Amtrak's newest passenger cars, five of the eight toilets did not work. The train conductor stated that the toilets frequently became clogged and could not be used.

Seven trains had at least one car with fogged windows. One car in a Florida train had 20 of its 32 windows fogged. All of the dome windows along one side of another car in Florida service were badly scarred.

### Unsatisfactory conditions and poor ontime performance of new equipment

Amtrak officials frequently cite the age of their equipment as being a major reason for their inability to provide satisfactory service. However, the problems that plague its old equipment also plague the relatively new French turbo trains. Turbo trains were put in service in April 1975, and are being operated on routes between Chicago, Illinois; St. Louis, Missouri; and Detroit, Michigan. Also, unlike most of Amtrak's maintenance work, the turbo trains are maintained at Amtrak owned and operated facilities in both Chicago and St. Louis.

The turbo trains we rode were generally dirty when boarded at the departing stations. Limited dining space further contributed to the dirty conditions. Passengers ate at their seats and provisions had not been made for enroute collection of debris generated during the trip. At the time of our review the turbo trains had the worst ontime record of all Amtrak trains.

From March through August 1975, Amtrak records show that 2,157 scheduled turbo-trains were, according to ICC criteria, an average of 36 minutes late or 44.5 percent of the time.1/ This percentage was higher than any of the other trains on regular Amtrak routes. Amtrak attributed part of the problem to a high rate of equipment breakdown and to deteriorated track, some of which is the most deteriorated in the country.

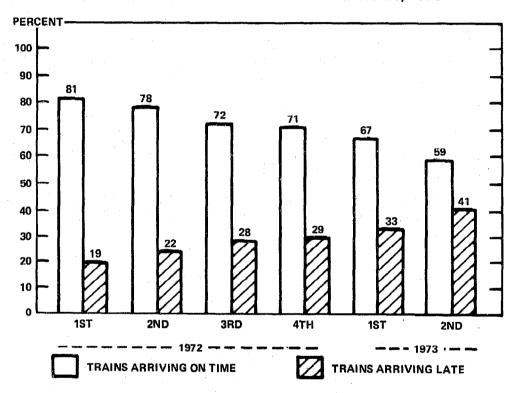
Amtrak officials further commented that because of heavy passenger demand for these trains, they were unable to properly schedule maintenance which resulted in many cases, in preventive maintenance not getting done and consequently more equipment breakdowns.

<sup>1/</sup>ICC regulations give some leeway in being adjudged late. ICC requires that a train be considered late only if it reaches final terminus more than 5 minutes after scheduled arrival time for each 100 miles of operation up to a maximum of 30 minutes. For example, if a train traveling 600 miles reaches its final destination 30 minutes after scheduled arrival it would be considered ontime; if, however, it arrives 31 minutes after schedule it would be considered 1 minute late.

#### Ontime performance

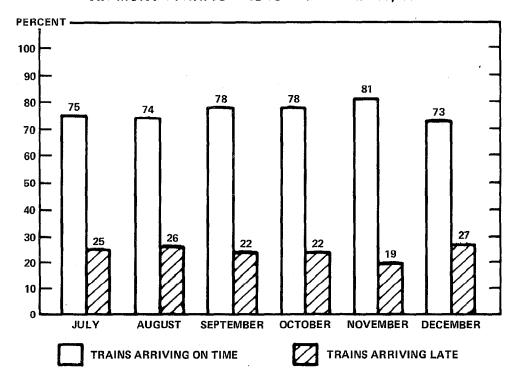
Our 1973 report entitled "Fewer and Fewer Amtrak Trains Arrive on Time--Causes of Delays" stated that from January 1, 1972, to June 30, 1973, Amtrak's ontime performance steadily deteriorated from 81 percent ontime during the first quarter of 1972, to 59 percent during the second quarter of 1973.

### TRAINS ARRIVING ON TIME AND ARRIVING LATE DURING THE SIX QUARTERS ENDED JUNE 30, 1973



Amtrak's goal for ontime performance continues to be 90 percent. ICC statistics for January 1, 1975, through December 31, 1975, show that Amtrak's failure to meet ICC's ontime performance criteria accounted for 22 percent of all violations of service standards for the period. Amtrak complaint data indicates that approximately 13 percent of all complaints received from April 1, 1975, through December 31, 1975, related to ontime performance.

TRAINS ARRIVING ON-TIME AND ARRIVING LATE DURING THE SIX MONTH PERIOD ENDED DECEMBER 31, 1975



For the entire-6 month period, Amtrak's ontime performance averaged 76.8 percent (30,183 of 39,345 trains), which continues to be considerably below its goal of having 90 percent of all its trains arriving ontime.

Amtrak officials state that approximately 58 percent of all late train arrivals during this 6-month period are attributable to 1 or more of 5 factors which are controlled by the railroads.

- --slow orders,
- --signal failures,
- --maintenance of way work,
- -- freight train interference, and
- --freight derailments.

In an attempt to improve ontime performance, Amtrak negotiated incentive contracts with 10 of the 18 railroads operating its trains. These contracts became effective during fiscal year 1975. For the 6-month period, 28.5 percent (11,224 trains) of all train runs were made by the 10 railroads operating under the incentive contracts. The trains operated by these railroads experienced 88.9 percent ontime and 11.1 percent late arrivals, while those operated by the other railroads experienced 71.9 percent ontime and 28.1 percent late arrivals.

#### QUALITY OF SERVICE STANDARDS

ICC is required by the Rail Passenger Service Act of 1970 (84 Stat. 1327) to insure that adequate rail passenger service is provided to intercity passengers. In 1973, an amendment to section 801 of the act authorized ICC to establish any regulations that it deemed necessary to insure the adequacy of intercity rail passenger service. Following this amendment, ICC held formal hearings (Ex Parte 277) to determine the need to establish regulations for intercity rail passenger service. As a result of these hearings, ICC issued specific level of performance standards which became effective April 1, 1974. These performance standards encompassed the following areas:

- --A national reservation system.
- --Ontime performance.
- -- Through-car service and reasonable connections.
- -- The availability of sufficient equipment to meet passenger requirements.
- --Station conditions.
- --Onboard and station necessities for passenger convenience and comfort.

ICC monitors Amtrak's performance against the standards by making unannounced field inspections of trains and stations and by investigating complaints filed by Amtrak passengers.

Passenger complaints are filed on forms which are made available to them by Amtrak personnel on board the trains and in the stations. Both Amtrak and ICC receive a copy of each complaint filed. Within 15 days of receipt Amtrak must notify ICC and the passenger of the action being taken

to correct the situation that led to the complaint or the reasons why the complaint is not considered valid.

The following table shows for the period January 1, 1975, through December 31, 1975, the number of complaints and field staff reports that ICC determined were violations of its service standard regulations.

	Number of violations			
	Passenger		aff reports	
Regulations	complaints	<u>Trains</u>	Stations	Totals
Reservations	1,263		31	1,294
Reservation making	64	2	31	97
Reservation				
confirming	19	-	29	48
Ontime performance	1,167	126	2,320	3,613
Expeditious service	14	12	1	27
Cancellation of		_		
trains	10	1	36	47
Cancellation enroute	72	_	12	84
Through-car service	9	_	107	116
Station hours	15	1	98	114
Consist of stations	217	27	407	651
Checked baggage	320	53	361	734
Consist of trains	645	227	87	959
Services	1,259	174	*-	1,433
Baggage services	20	336	1	357
Food and beverage	515	233	-	748
Temperature control	2,357	430	-	2,787
Sleeping cars	311	244	. <del>-</del>	555
Coaches	1,006	5 <b>07</b>	-	1,513
Nonrevenue space	43	191		234
Nonsmoking	126	120	-	246
Complaint procedure	19	434	<u> 101</u>	<u>554</u>
Total alleged				
violations	9,471	3,118	3,622	16,211

Amtrak statistics on complaints from April 1, 1975, through December 31, 1975, are summarized below.

April 1, 1975 through December 31, 1975

Reservations	1,886
Ontime performance	1,592
Train consist	307
Onboard services	1,751
Temperature control	2,855
Coach accomodations	955
Personnel	1,067
Other	1,477
Total	11,890

To put these complaints in perspective it must be noted that the number of passengers that actually filed complaints represented less than 1 percent of the total passengers that rode Amtrak's trains during these periods. However, the number of complaints may not be indicative of the level of satisfaction with Amtrak services because of certain aspects of the complaint system.

Based on a questionnaire which we distributed during trips on 8 Amtrak trains during September and October 1975, only 61 of the 222 passengers responding, or 27 percent, were aware of the complaint system. Furthermore, the complaint forms are not readily available to the passengers. Passengers must ask for the forms from Amtrak train crew members.

In 1975, ICC held a series of hearings to determine whether it should change the regulations or recommend new legislation governing Amtrak service. The hearings were conducted over a 6-month period and were held in 10 cities. The witnesses at these hearings-mostly previous Amtrak passengers-generally confirmed the poor train conditions we observed and also indicated a general public annoyance with the situation. However, the December 10, 1975, report of the presiding administrative law judge stated that:

"In general, then, these hearings have affirmed that there has been substantial progress in upgrading Amtrak service in recent months, that this progress is now continuing in the hands of a management working effectively to accelerate that progress, and that there is broad public support for this effort \* \* \*."

"Amtrak has achieved very important advances toward creating a credible national system of intercity rail passenger service."

#### CONCLUSION

Based on our personal observations, review of the ICC hearings, and our discussions with passengers, it is apparent that Amtrak needs to improve its service. However, despite the criticisms there seems to be a large segment of Amtrak's ridership that is satisfied with the service Amtrak provides.

#### CHAPTER 9

#### SCOPE OF REVIEW

Our review of Amtrak's 5-year plan covering fiscal years 1976 through 1980 was made primarily at Amtrak headquarters in Washington, D.C., and included discussions with Amtrak officials involved in its preparation; a review of supporting documentation, where available; the methodology and assumptions used in developing the estimates; and a review of other pertinent Amtrak records and financial statements.

Our information developed on comparative subsidy data was based on prior GAO work and on an analysis of studies and data developed by the Department of Transportation.

Our review of Amtrak's level of service was based on (1) prior and concurrent GAO work; (2) personal observations of Amtrak trains and discussions with Amtrak passengers; (3) a questionnaire which asked Amtrak passengers to rate selected aspects of Amtrak service; and (4) a survey of complaint data and ICC field reports.

National Railroad Passenger Corporation, 955 L'Enfant Plaza North, S.W., Washington, D.C. 20024 Telephone (202) 484-7100



March 25, 1976

Honorable Elmer B. Staats Comptroller General of the United States General Accounting Office 441 G Street, N.W. Washington, D.C. 20548

Dear Mr. Staats:

We have reviewed and discussed with members of your staff the GAO draft report entitled "An Assessment of Amtrak's 1976-1980 Plans and Projected Levels of Federal Support Needed." We agree generally with the facts and recommendations as reported and which must be considered in context with the longer term evolution of the Amtrak planning processes supporting the concept of a national intercity rail passenger system. We believe, for example, that a goal to increase Amtrak's share of the market from its 1975 level of eight-tenths of one percent to a projected 1980 level of 1.2 percent is not overly optimistic. We are convinced that there is a definable market for rail passenger service in the current Amtrak system as demonstrated by Amtrak's 17% annual revenue growth through Fiscal Year 1975. This growth was achieved for the most part with unattractive and unreliable equipment and over rail right of way in serious need of upgrading. Amtrak's plans for 1976-1980 reach to this market in a substantial way and with new equipment over improved right of way. The result should be substantial increases in the rate of revenue growth as projected.

Your report properly records the emphasis of the 1976-1980 Five Year Operating and Financial Plan on modernization of equipment and facilities. While it will take time to gather the benefits from these heavy taxpayer investments, we can report that since November 1975 the new equipment with its increased seat availability, performance and attractiveness to customers has been placed in revenue service and, as I informed your staff, the passenger response is enthusiastic. Further, our marketing programs coupled with innovative fares structuring since the beginning of 1976 are increasing ridership. As the recession abates and summer travel begins we anticipate this trend will continue even stronger.

Honorable Elmer B. Staats Page Two March 25, 1976

The report addresses quality of service and maintenance both of which are directly related to performance. It does not highlight for Congress the importance Amtrak has placed on the takeover from the Railroads of selective maintenance facilities during 1975 in response to the provisions of the Amtrak Improvement Act of 1974. Indeed, during the period of January and February 1976, eleven railroad maintenance facilities, employing almost 3,000 people were taken over by Amtrak. Most of these facilities need major rehabilitation but we feel with their direct control it will be possible to improve equipment reliability and performance, and quality of service consistent with our plan projections. Productivity of the facilities will be increased and operating costs reduced in this heavy expense category.

We share the GAO concern over increasing costs. Uncontrollables such as inflation, interest expense and the like continue at a high rate. Over 59% of the inflation since 1960 in our country has taken place in the last four years when Amtrak's formation and growth required heavy financial investment. Nevertheless, in constant 1972 dollars our cost curve is leveling in spite of the addition of new routes and other operating growth. As stated in the FY 1976-1980 Five Year Plan revenue through fare increases could not reasonably be expected to offset the rate of cost growth. But, we emphasize that the Corporation's record of cost avoidance and reductions particularly in Fiscal Year 1976, where we reduced our cost budget by over \$50 million, clearly demonstrate Amtrak's resolve to keep costs within control, while increasing productivity and quality of performance.

The GAO report observes that the Amtrak planning process has improved with the development of each succeeding Five Year Plan. The Corporation is mindful of the need for continued improvements in our planning process. Early this year we introduced the first parts of an Integrated Planning and Control system which we are confident will help correct deficiencies in previous plans. We have also recently appointed a Vice President of Executive Planning thereby raising the level of direct and specialized attention to the planning process.

Honorable Elmer B. Staats Page Three March 25, 1976

The Congress has recently approved Criteria and Procedures for Making Route and Service Decisions as provided in the Amtrak Improvement Act of 1975 (Public Law 94-25). This action places the authority and responsibility for critical route decisions with the Amtrak Board of Directors and provides an informed basis from which to make the hard choices needed for route restructuring so as to maximize the attractiveness and utility of the national system. This authority will have a major impact on the Amtrak review of system alternatives and directly influence overall planning options.

The GAO report records skepticism with our inclusion in the Five Year Operating Plan of a goal for deficit reductions attributable to management actions. Our goal is based upon indepth analysis and projected related management actions on routes in the nationwide system. As explained to your investigators we expect to accomplish both direct cost savings on routes and to generate revenue increases that exceed marginal implementation costs. We believe the deficit reductions as projected are attainable.

In a number of other areas (capital plan pricing, revenue projections, etc.) the report indicates the plan was based upon management judgements and thereby not fully supported. The Five Year Plan is a projection of future events. As such, it cannot be supported in the details required to make the decision to execute a program. These details, i.e. negotiations with contractors/railroads on pricing, specific identification of cost reduction actions and the like must come later. But a good plan should cover these aspects of our programs and wise management judgement must be used in making such projections. I can see no other reasonable alternative.

Your report concludes that considerable federal support in a form of both operating and capital grants are essential to continue Amtrak operations. We agree and our Five Year Plan reflected this need. Although the need for federal assistance has been clearly foreseen in Amtrak's legislative history since the outset, the Corporation is neither comfortable nor complacent with the situation as it exists today. We want to continue to exert our corporate energies to providing modern, efficient, inter-city rail passenger service while decreasing the ratio of federal subsidies to total cost. We believe this will occur as we improve integrated planning, control costs, increase rider-ship and maximize the attractiveness of rail transportation to

Honorable Elmer B. Staats Page Four March 25, 1976

an expanding market. It must also be noted that Amtrak has recently taken on expanded responsibilities in operating the Northeast Corridor - the costs of which will add to Amtrak's need for operating grants in future years. The extensiveness of this government commitment must be kept in sight in weighing our shared concern with an expanding federal financial support in future years.

I should like to take this opportunity to compliment the GAO staff for their hard work and cooperation during the course of the study.

Sincerely,

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JOHN E. MUSE, CALIF., CHAIRMAN

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#### **CONGRESS OF THE UNITED STATES**

HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
WASHINGTON, D.C. 20515

B-175155

June 16, 1975 · · ·

Honorable Elmer B. Staats Comptroller General of the United States 441 G Street, N. W. Washington, D. C. 20548

Dear Mr. Staats:

At the request of the House Rules Committee, the Subcommittee on Oversight and Investigations is initiating a study of the National Railroad Passenger Corporation (Amtrak) that will address:

- (a) the kind of support that is likely to be sought by Amtrak in the future:
- (b) comparisons of Federal support to Amtrak with other modes of passenger transportation;
- (c) current level of Amtrak service to railroad passenger; and
- (d) Amtrak's present financial condition.

To assist us in this effort, the Subcommittee would specifically like GAO to do the following.

On August 30, 1974, Amtrak submitted to the Congress a Five-Year Financial Program -- Operations and Capital Acquisitions, Fiscal Years 1975-1979. To prepare this plan, Amtrak has made certain assumptions relating to ridership levels, cost increases, fare structure changes and service mix and has reached conclusions as to profitability. We

understand that Amtrak will submit an update of their Financial Program in the near future. The Subcommittee would like to know for each of the five areas in such programs:

- (a) What were the assumptions upon which the plan was based;
- (b) Were the assumptions supported by studies or statistical data, etc.;
- (c) Did Amtrak reach sound conclusions as to profitability based on these assumptions;
- (d) What were the alternative assumptions which were discarded by Amtrak; and
- (e) Would any of the alternatives reduce the projected deficit while at the same time provide the desired train service to the public?

In addition, the Subcommittee requests that your report include the following information:

- (a) a comparison of the estimate of Federal support needed by Amtrak with existing and projected levels of subsidy for passenger transportation;
- (b) a summary of previous GAO studies, and others (i.e., ICC, DOT) that address Amtrak's level of service to railroad passengers; and
- (c) a summary and analysis of the results of Amtrak's 1974 financial audit (and 1975, if available) and the potential impact on their financial condition of any issues raised by the private audit firm.

The Subcommittee will be holding hearings early in 1976 and will need the results of your study prior to that time. As always, we are appreciative of your assistance.

JOHN E. MOSS Chairman

Oversight and Investigations Subcommittee

JEM: 1rh

### PRINCIPAL OFFICIALS OF AMTRAK

### RESPONSIBLE FOR ACTIVITIES

### DISCUSSED IN THIS REPORT

		Tenure of Office			
		From		To	
	AMTRAK			•	
President:					
Paul H. Reistrup		Mar.	1975	Present	
Roger Lewis		May	1971	Feb. 1975	
Vice-President, Finance:					
Donald R. Brazier		May	1975	Present	
Robert C. Moot		Feb.	1973	Apr. 1975	