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REPORT TO THE CONGRESS
UNITED STATES
GENERAL ACCOUNTING OFFICE

JUN 9 1976

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Quality Of Amtrak
Rail Passenger Service
Still Hampered By Inadequate
Maintenance Of Equipment

The National Railroad Passenger
Corporation (Amtrak)

After 4-1/2 years of effort, U.S. rail passengers cannot consistently expect ontime service in clean and comfortable cars. If the public is to be provided with acceptable service, Amtrak must take more aggressive action to minimize its longstanding and well-publicized problems.

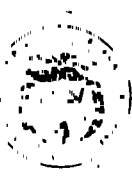
Many of these problems relate to the repair and maintenance of passenger cars, locomotives, and other equipment necessary to keep trains operating. Amtrak's program to improve maintenance has been costly, ineffective, and slow.

GAO is making recommendations to help correct the deficiencies noted.

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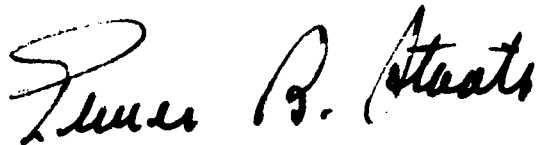
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g) The President of the Senate and the
Speaker of the House of Representatives

This report is our first annual report on Amtrak activities as required by the Amtrak Improvement Act of 1974 [45 U.S.C.A. 644 (Supp. 1976)]. The report covers Amtrak's maintenance and repair of its trains and suggests ways that passenger safety, comfort, and convenience can be improved through better management of these activities.

We selected maintenance activities for this review because Amtrak's ability to provide clean, attractive, and mechanically reliable trains is basic to attracting the increased ridership needed to reduce or eliminate the huge federally subsidized operating deficits the corporation has experienced since its beginning.

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of Transportation; the Chairman, Interstate Commerce Commission; the president of Amtrak; and the various congressional committees concerned with railroad matters.



Comptroller General
of the United States

C o n t e n t s

	<u>Page</u>
DIGEST	i
CHAPTER	
1 INTRODUCTION	1
Arrangements for operation and maintenance of rolling stock	1 5
Status of the Amtrak fleet	5
Problems identified in prior GAO study	7
2 IMPROVEMENT STILL NEEDED IN AMTRAK SERVICE	9
Appearance and condition of Amtrak passenger cars	10 11
Unsafe conditions	11
Conditions affecting passenger comfort	11 12
Problems with windows	12
Unsatisfactory condition and poor ontime performance of new equipment	13
Passenger reactions to Amtrak service	14
Conclusions	16
3 IMPROVEMENTS NEEDED IN MANAGEMENT OF REPAIR AND MAINTENANCE ACTIVITIES	17
Periodic maintenance program has not been followed	17 19
Conclusions	19
Recommendations	20
Amtrak comments	20
Controls over repair and maintenance not effective	20 21
More and better inspections needed	21
Headquarters monitoring of main- tenance activities should be improved	24 25
Conclusions	25
Recommendations	26
Amtrak comments	26
Maintenance management could be im- proved with automated data	27
Inadequate maintenance record system	28 29
Spare-parts shortages	29
Failure to take full advantage of warranties	30

CHAPTER

Page

Conclusion	31
Recommendation	31
Amtrak comments	31
Need for work productivity standards	31
Conclusion	33
Recommentation	33
Amtrak comments	33

4	STATUS OF AMTRAK PROGRAM FOR ASSUMING CONTROL OF MAINTENANCE FACILITIES	34
	Amtrak plans for assuming control of additional facilities	34
	Poor conditions observed at main- tenance facilities	38
	Conclusions	40
5	SCOPE OF REVIEW	41

APPENDIX

I	Letter dated April 12, 1976, from the president, National Railroad Passenger Corporation	42
II	Principal officials of the National Railroad Passenger Corporation responsible for administering activi- ties discussed in this report	47

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

QUALITY OF AMTRAK RAIL
PASSENGER SERVICE STILL
HAMPERED BY INADEQUATE
MAINTENANCE OF EQUIPMENT
The National Railroad
Passenger Corporation (Amtrak)

D I G E S T

In May 1971 the Congress created Amtrak, a for-profit corporation, to operate and revitalize U.S. intercity railroad passenger service. Since the beginning Amtrak's ontime performance and service to passengers has been adversely affected by equipment maintenance problems.

Passengers can frequently expect to encounter late arrivals, air-conditioning or heating failures, broken or fogged windows, toilets that do not work, torn and worn upholstery and carpeting, and dirty cars--both inside and outside.

In 1973 GAO reported on these problems. It found in its current review--the first under the statutory requirement that it make an annual performance audit of Amtrak--that, although Amtrak had made some progress in overcoming such problems, much improvement was still needed.

Amtrak's fleet of about 2,100 passenger cars and 370 locomotives is old and needs extensive maintenance to keep it running. Over 80 percent of its cars are more than 20 years old.

Some new equipment is now in operation, and much more is on order or planned to be ordered. New equipment, however, will not solve Amtrak's longstanding maintenance problems. It will be several years before enough new equipment is in operation to appreciably change the age of the fleet. Unless improvements are made in Amtrak's overall maintenance program, the new equipment probably soon will become as rundown, unserviceable, and dirty as its existing equipment.

Amtrak had developed a maintenance program; however, it was not following its own preventive maintenance schedules. Also it was not providing sufficient leadtime notice to contractors for cars requiring refurbishment. Amtrak plans to complete development of a computerized system for improving the scheduling and performance of work by 1977. (See p. 17.)

Amtrak contracts with the railroads to do most of its needed maintenance and repairs but does not have an effective system to control the quality or quantity of the work done. Amtrak has a field inspection staff to do this function, but some inspectors had too much work and some facilities had no full-time inspectors.

As a result, much of the railroad's work was not inspected. After GAO completed its fieldwork, Amtrak reported that it had increased its inspection staff. However, GAO believes that, even though more inspectors have been assigned, they will not be fully effective because Amtrak has not developed inspection guidelines to insure that equipment is adequately inspected. (See p. 22.)

At some maintenance facilities, the work contracted for is not done. Amtrak has repeatedly, but unsuccessfully, tried to persuade the railroad's management to improve its contract work but has generally been met with indifference. Although Amtrak could take legal action to enforce contracts, officials believe that process would be time consuming and cumbersome. GAO believes that Amtrak has enough data available to serve as a basis for making regular, periodic evaluations of contractor railroad performance and to take corrective action on the railroads' continuing failure to live up to their contractual obligations. (See p. 24.)

Progress toward automating repair and maintenance data has been slow, and the lack of automation has contributed to weaknesses in administrative controls. As a result, Amtrak's maintenance record system is inadequate to prevent duplicating

maintenance work, to identify repeated equipment failure, and to take full advantage of warranties. (See p. 27.)

Amtrak had not established productivity standards for monitoring work output at the railroad repair and maintenance facilities. Without this vital management tool, Amtrak was unable to effectively monitor operating efficiencies at the shops so as to control costs. After GAO completed its fieldwork, Amtrak began making work productivity studies at selected facilities. (See p. 31.)

GAO is making several recommendations to Amtrak to help correct the deficiencies in its maintenance program. Specifically, GAO is recommending that Amtrak:

- Take equipment out of service when necessary to insure that scheduled maintenance is done and give sufficient leadtime notice to refurbishment contractors. (See p. 19.)
- Develop specific inspection guidelines and staffing criteria for field inspectors. (See p. 26.)
- Make periodic, formal evaluations of the individual railroads' performance and use these evaluations as the basis for taking action, including legal action, if necessary, to get the railroads to comply with the contract terms. (See p. 26.)
- Assign a high priority to completing the automated maintenance system, to avoid further delays and to insure completion at the earliest possible date. (See p. 31.)
- Include work productivity standards, after Amtrak develops them, in its contracts with the railroads. (See p. 33.)

In 1972 the Congress directed that Amtrak, insofar as possible, operate and control all aspects of its rail passenger service, including maintenance and repair facilities. Amtrak management, however, has made little progress in taking over the repair and maintenance of its fleet of locomotives and passenger cars. As of December 1975, only 3 of about 80 repair and maintenance facilities and 1 site was under Amtrak control. Another 18 facilities had been selected to be acquired by 1978.

Amtrak estimated that the facilities to be brought under its control would cost less to operate than under railroad management and, in some cases, takeover should increase output, increase equipment availability and operability, and improve material inventory controls. Some of the facilities proposed for takeover, according to Amtrak studies, provide marginal cost or operational benefit.

GAO observed that many railroad-operated facilities were generally rundown and poorly equipped. Some had been in operation for over 50 years, were in dilapidated buildings, and had worn and outmoded track layouts that did not efficiently accommodate equipment being repaired.

GAO believes that the physical takeover of the various maintenance facilities should improve Amtrak's repair and maintenance program. However, the takeover will not, in itself, correct many of Amtrak's maintenance problems.

Facilities to be acquired will continue to be inefficient, uneconomical, and ineffective unless Amtrak improves

- compliance with maintenance schedules,
- inspection practices,
- headquarters monitoring, and
- the use of automated data and controls over productivity.

The president of Amtrak generally agreed with GAO's recommendations. In his letter of April 12, 1976, he said that Amtrak had corrected or was correcting problems identified in this report. He stated that

- a Maintenance Planning Group had been established to review, discuss, and promulgate action on maintenance programs;
- a system for continuous monitoring and reporting on performance was being established so that corrective action could be promptly taken;
- revised staffing levels for inspectors; improved inspection guidelines; and better standards of costs, quality, cleanliness and reliability of maintenance work were under development; and
- adequate leadtime notification was being given to heavy shops for their production planning.

The president of Amtrak also told us that the design and implementation of an automated system for administering materials control and maintenance data would continue to receive his personal support.

CHAPTER 1

INTRODUCTION

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The Rail Passenger Service Act, as amended by the Amtrak Improvement Act of 1974 [45 U.S.C.A. 644 (Supp. 1976)] requires GAO to make an annual performance audit of National Railroad Passenger Corporation (Amtrak) activities. This report, which analyzes Amtrak's activities in the maintenance and repair of its rolling stock, is our first report under the statutory requirement. 753
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Amtrak was created 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 railroad 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 about 35 routes covering about 25,000 miles, including 4 routes that service points in Canada and Mexico. (See the map on the following page.) Amtrak's operations are financed from passenger revenues and Federal Government assistance. About 50 percent of its operating costs are recovered from passenger fares. For example, during 1975 Amtrak's operating expenses totaled \$560 million and its revenues from the 17 million passengers totaled \$247 million, resulting in a loss of \$313 million. The corporation has reported financial losses on its operations each year since its start.

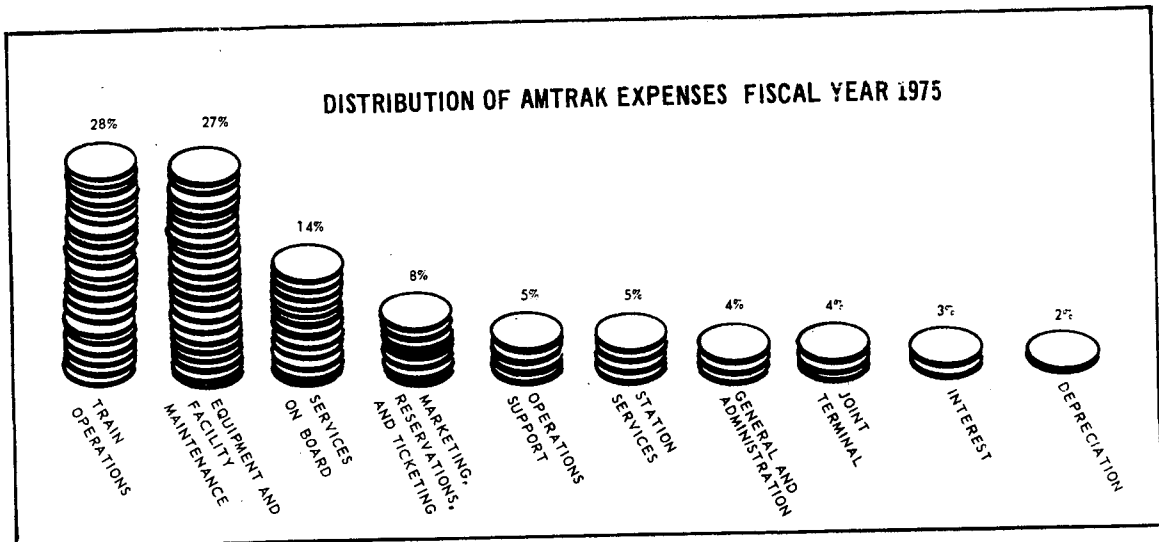
The Federal Government has provided loan guarantees for capital improvements and cash grants to offset operating losses. As of June 30, 1975, \$635.6 million in Federal grants had been given to Amtrak under section 601 of the act as amended by the Amtrak Improvement Act of 1975 to meet its normal operating expenses. In addition, Amtrak had exercised about \$378 million in loan guarantees under section 602 of the act as amended by the Amtrak Improvement Act of 1975.

ARRANGEMENTS FOR OPERATION AND MAINTENANCE OF ROLLING STOCK

Seventeen railroads are under contract or have agreements with Amtrak for operating all passenger trains and providing services, including maintenance and repair of the cars and locomotives. In addition, four nonrailroad

companies do heavy maintenance, such as overhauls and re-furbishing, and Amtrak operates three of its own repair and maintenance facilities--two are owned and one is leased.

During fiscal year 1975 Amtrak spent about \$150 million for equipment and facility upkeep and \$159 million for operating the trains. These costs were about 27 percent and 28 percent, respectively, of the total \$560 million operating costs for that period, as shown on the following chart.



The contracts with railroads specify the work to be done in maintaining locomotives and passenger cars in good mechanical condition and in compliance with safety and health regulations of the Federal Railroad Administration and the U.S. Public Health Service. Contract provisions for locomotives call for:

- General inspection, repair, and cleaning on a daily, semimonthly, and annual basis.
- 2-year, or 350,000-mile, inspection, repair, or replacement of certain components.
- 4-year, or 750,000-mile, overhaul of certain components plus body repair and painting.
- Repair of limited damage caused by wreck or fire damage.
- Other heavy maintenance, such as replacement of engines or main generators.

Contract provisions for inspection, repair, and maintenance of passenger cars include:

- Daily inspection and semimonthly and annual maintenance, including preseason programs for heating and air-conditioning.
- Inspection and overhaul of certain equipment, such as air-conditioning and steam-heat components at least every 2 years.
- Complete overhaul of certain systems, such as air-brakes, every 2 years and of other systems, such as car bodies, car interiors, and electrical and water systems, every 4 years.
- Repair of limited damage caused by wreck or fire damage.

The contracts with the railroads also specify car cleanings required at several levels, as follows:

- Short turnaround car cleaning, which is a light cleaning before departure when at least 30 minutes is available.
- Layover car cleaning, which is a more thorough cleaning before departure when at least 3 hours is available.
- Periodic heavy car cleaning (extraordinary of "E" cleaning) on cars assigned to railroads.

E cleaning is done on a schedule with set intervals, depending on the type of railroad car, between cleanings.

By specific agreements, the railroads may do all the inspections, cleanings, repairs, and overhaul work required for the trains they operate. Sometimes Amtrak contracts with other firms to do heavy repairs, overhauling, refurbishing, and extensive rebuilding after wreck or fire damage.

Generally the day-to-day maintenance and repairs necessary to keep the trains operating is done by the railroads that operate them. However, turnaround service on some routes is done by another railroad if the operating railroad does not have a facility at the end of the route. For example, the train operated between Chicago and Los Angeles is serviced by the same railroad at both ends of the route. The train operated between Los Angeles

and Seattle must be serviced by a different railroad in Los Angeles because the operating railroad does not have a facility for doing the work in Los Angeles

For scheduled maintenance, that is, monthly inspections, and heavy repairs, all cars and locomotives are assigned to specific maintenance facilities. At December 31, 1975, there were about 80 such facilities scattered throughout the country.

STATUS OF THE AMTRAK FLEET

At June 30, 1975, Amtrak owned 2,033 locomotives and passenger cars and was renting or leasing 424 others, as shown in the following table.

	<u>Owned</u>		<u>Leased or rented</u>	
	<u>Number</u>	<u>Cost</u>	<u>Number</u>	<u>Annual cost</u>
Locomotives	189	\$ 14,800,000	183	\$1,700,000
Cars	<u>1,844</u>	<u>130,300,000</u>	<u>241</u>	<u>2,500,000</u>
	<u>2,033</u>	<u>\$145,100,000</u>	<u>424</u>	<u>\$4,200,000</u>

Amtrak purchased most of the cars and locomotives from railroads. Since passenger service had been unprofitable and in decline for several years, some railroads had allowed the equipment to fall into serious disrepair. After the purchase Amtrak had to overhaul, refurbish, and restore the rolling stock to a reasonable operating condition.

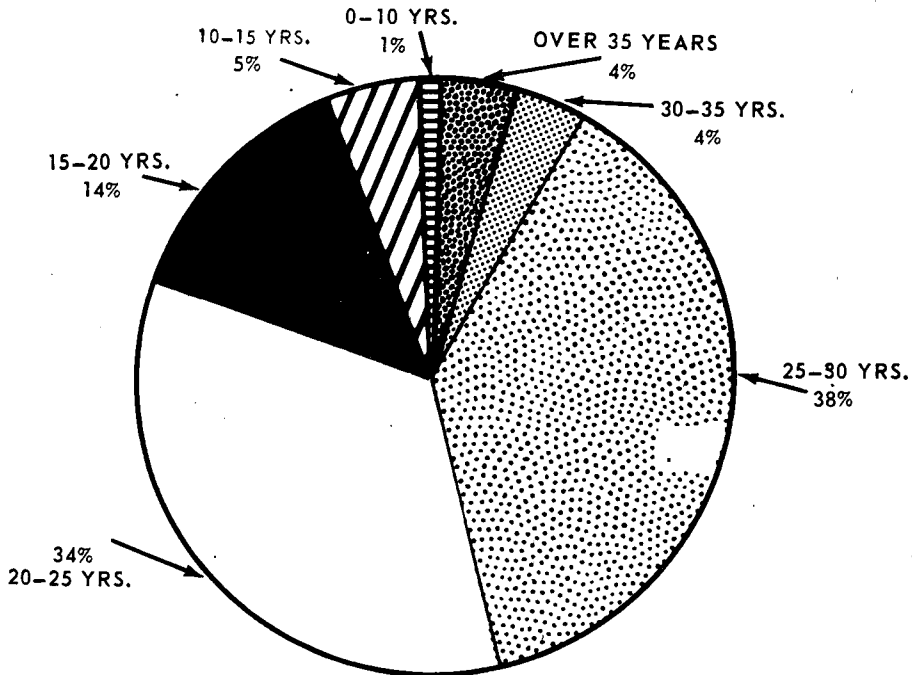
As of August 1975 Amtrak had entered into contracts to buy 81 new locomotives--26 electric locomotives; 25 diesel-electric locomotives; and 30 high-speed, lightweight locomotives--costing about \$51 million. Amtrak plans to retain outright ownership of the 30 lightweight locomotives. The remaining locomotives will be financed through leveraged lease arrangements by which Amtrak will buy the locomotives from the manufacturer, sell them to a group of financial institutions, and lease them back for a period of 15 years. At the end of the 15-year lease period, Amtrak has a fair market value purchase option. The new equipment is to replace lower powered and outmoded electric and diesel locomotives.

Amtrak plans to order 66 new electric and diesel locomotives by the end of fiscal year 1980. It is expected that by then new equipment will have replaced 230 owned locomotives and 25 leased locomotives.

Also as of August 1975, Amtrak had 762 new passenger cars costing about \$403.6 million on order. All cars on order are planned to be owned. In addition, it is expected that Amtrak will order 575 more cars by fiscal year 1980. By that year, new passenger car equipment is expected to have replaced 999 owned cars and 160 leased cars that are considered uneconomical to retain.

The acquisition of new locomotives and corresponding retirements of older equipment should result in a locomotive fleet with an average age of about 5 years by 1978. In 1972 Amtrak's locomotives averaged 19 years. The new passenger cars should reduce the average passenger car age from over 20 years to 10 years. The chart below shows that as of June 30, 1975, 80 percent of Amtrak's passenger cars were over 20 years old.

**AGE OF CARS IN AMTRAK FLEET
JUNE 1975**



PROBLEMS IDENTIFIED IN PRIOR GAO STUDY

In our report entitled, "Amtrak Needs to Improve Train Conditions Through Better Repair and Maintenance" (B-175155, June 21, 1973), we identified maintenance problems as a major factor affecting performance.

Our study found that Amtrak had problems with:

- Monitoring car maintenance and repairs.
- Getting train crews to report defects.
- Obtaining adequate records to insure that cars were maintained and repaired.
- Maintaining an adequate parts inventory.
- Scheduling equipment for refurbishment.

This report follows up on these problem areas and shows the current status of Amtrak's repair and maintenance program and the impact that the program has had on improving passenger service and economy of operation.

Other reports on Amtrak include:

<u>Report title</u>	<u>Number</u>	<u>Date</u>
Railroad Passenger Service-- Analysis of Train Scheduling and Operations	B-175155	Feb. 22, 1973
Railroad Reservation, Informa- tion, and Ticketing Service Being Improved	B-175155	Aug. 22, 1973
Fewer and Fewer Amtrak Trains Arrive on Time--Causes of Delays	B-175155	Dec. 28, 1973
Information on Loan Guarantee Programs Under the Rail Passenger Service Act and the Regional Rail Regorganiza- tion Act	RED-75-329	Feb. 26, 1975
How Much Federal Subsidy Will Amtrak Need?	RED-76-97	Apr. 21, 1976

Amtrak, seven railroads, and one refurbishment contractor commented on our observations of the conditions of the trains they operated and the maintenance, repair, and refurbishment they provided. We have considered their comments in this report. Amtrak's comments are included as appendix I.

CHAPTER 2

IMPROVEMENT STILL NEEDED IN AMTRAK SERVICE

After 4-1/2 years Amtrak still has not provided the type of service necessary to revitalize U.S. rail passenger transportation. Passengers cannot consistently expect ontime service in clean and comfortable trains. Even the new turbotrains are generally dirty and unappealing and are late more frequently than all other Amtrak equipment. If the public is to have confidence in Amtrak's ability to provide acceptable service, Amtrak management must take steps to minimize its longstanding and well-publicized problems.

Amtrak standards require that each train, at its starting point, have (1) clean interiors and exteriors on all passenger cars, (2) properly operating mechanical equipment, that is, air-conditioning and heating, brakes, safety appliances, etc., and (3) adequate supplies, food, and other equipment. Further, Amtrak requires that, to the maximum extent possible, deficiencies found en route be corrected en route. Amtrak has also established a goal that all of its trains arrive on time.

During the period June through October 1975, we inspected 584 passenger cars throughout the United States. On the basis of these observations, we concluded that conditions on Amtrak's trains fall far short of the corporation's standards and goals.

Passengers can frequently expect to encounter one or more of the following conditions on an Amtrak train.

- Air-conditioning and/or heating-system failures.
- Broken, dirty, or fogged windows.
- Inoperative and insufficiently stocked restrooms.
- Torn and worn upholstery.
- Damaged, worn, or torn carpeting.
- Dirty interiors and exteriors.
- Interior doors that do not open and close properly.
- Inoperative lights.

The above types of conditions have plagued Amtrak since its inception in May 1971. In 1973 we reported many of the

same problems that we noted in our current review. Although we did find that some progress had been made--train crews have begun to report defects observed en route, and the number of cars out of service due to parts shortages has decreased--much improvement was needed.

Amtrak officials are aware of these problems and said that action was being taken to solve them. Amtrak officials believe that implementation of their plans to take over direct control of maintenance and repair of the equipment should be a major improvement that will help minimize the problems. (See ch. 4.)

APPEARANCE AND CONDITION OF
AMTRAK PASSENGER CARS

Most passenger cars we examined departed in what we believe was an overall satisfactory condition, although we did observe many cars with dirty or fogged windows, worn upholstery, soiled carpeting, and many other unsightly conditions. Some cars were so unsightly as to be, in our opinion, unfit for service.

On the west coast we inspected 23 long-distance trains, made up of 254 passenger cars, that departed from Los Angeles and Seattle. We made our inspection just before the trains departed from Los Angeles during the period June 16 to 22, 1975, and from Seattle during the period July 9 to 14, 1975. We looked for any obvious defects, such as dirty interior conditions or fogged windows.

The deficiencies in appearance were as follows:

<u>Defect observed</u>	<u>Number of cars with defect</u>		<u>Total</u>
	<u>Los Angeles</u>	<u>Seattle</u>	
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 and/or peeling exterior	29	3	32
Dirty and/or torn window shades	4	17	21
Dirty tile floors	20	3	23

In the East, Midwest, and West, during the period June to October 1975, we rode Amtrak trains and, while the trains were in operation, checked the cleanliness and condition of 330 cars and the quality of service Amtrak personnel provided. We rode trains operating in the Northeast corridor between Boston and Washington, D.C.; medium-distance daytime coach trains between New York City and Florida, between Washington, D.C., and California, and between Los Angeles and Seattle.

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

Unsafe conditions

Diaphragm safety curtains are used in the passageways between cars to prevent passengers from placing their fingers in the gaps where the cars are joined. On 24 cars on 4 trains, the safety curtains were missing or unattached. Some attaching devices were so worn that the curtains would not stay in place. All safety curtains were missing or inoperative on a New York City to Albany, New York, train which consisted of three coaches and a snack bar car. On this train, three cars had worn exterior door latches and the upper half of one door would not stay closed.

Interior car doors have automatic door-opening mechanisms and manual door handles for use if the automatic openers fail. The manual door handle of 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 City and Albany and one car on a New York to Jacksonville train had at least one broken seat. Water leaked through the roof of one car in the Northeast corridor service. Water was dripping from an electric light fixture, creating an electrical hazard and a slippery condition. No action was taken en route to correct the conditions.

Conditions affecting passenger comfort

Of 144 cars we inspected in the East and Midwest, 19 had defects which affected passenger comfort and 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. Also a car on a Florida train and another in New York City to Albany service leaked water around a window. A water leak through the roof of a crowded turbotrain operating between New York and Boston necessitated one passenger's traveling with a raised umbrella.

On one train between Boston and New York City, which consisted of four of Amtrak's newest passenger cars, five of the eight toilets did not work. The train conductor said that the toilets frequently became clogged and could not be used. Amtrak headquarters officials later told us that action had been taken to correct the situation.

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

Problems with windows

One problem we saw throughout the Amtrak system was dirty, blurred, or fogged windows on the passenger cars. The inability of some railroads to adequately clean windows has been a continuing problem, because some car-washing facilities cannot properly rinse and dry windows or wash the dome windows on some cars.

Railroad maintenance personnel in Los Angeles told us that their equipment was inadequate and that they did not have sufficient manpower to wash, rinse, or dry windows manually. As a result, many cars departed from Los Angeles with dirty windows. In Seattle, however, we saw that most cars departed with clean windows because the windows were rinsed with clean water before leaving the maintenance yard and dome windows were hand washed as necessary during the turnaround maintenance period.

The dirty condition of passenger car windows has been compounded by Amtrak's use of Lexan, a material similar to plexiglass, as a substitute for outside glass panes. Amtrak began using Lexan because it is extremely difficult to break and can be cut by employees at the maintenance facilities to fit any size window. However, Lexan turns whitish and hazy if it is scrubbed with a hard material, such as steel wool, or if washed with harsh chemicals.

For example, the windows on trains departing from Los Angeles acquired a dirty coating of a substance which maintenance employees said was very difficult to remove. Amtrak

officials told us that the soap the contractor used in its car-washing facility had to be very strong to properly clean the cars but was too harsh for the Lexan and was removing the protective coating and causing hazy or streaked windows.

Because of the problems experienced with Lexan windows, Amtrak officials have directed the maintenance facilities to replace the outside Lexan with safety glass when cars are taken out of service for a thorough cleaning.

UNSATISFACTORY CONDITION AND POOR ONTIME PERFORMANCE OF NEW EQUIPMENT

Amtrak officials frequently cite the age of their equipment as a major reason for their inability to provide satisfactory service. However, the problems that plague its old equipment also plague the relatively new turbine-powered trains. The newest turbotrains were put in service in April 1975; at the time of our review, turbotrains were being operated on Midwest routes between Chicago; St. Louis, Missouri and Detroit. Unlike most of Amtrak's maintenance work, the maintenance of the turbotrains is done at the Amtrak owned and operated facility in Chicago.

The turbotrains we rode were generally dirty when we boarded them at the stations. Limited dining space also contributed to the dirty conditions. Passengers frequently had to eat at their seats, and provision had not been made for en route collection of debris generated during the trip. At the time of our review, turbotrains had the worst ontime record of all Amtrak equipment. In March 1976 headquarters officials told us that additional trash receptacles were being installed on Amtrak turbotrains.

The unsatisfactory condition of these trains when they departed was caused by many factors.

--Officials at the Chicago facility said that (1) they did not have enough train-cleaning employees and (2) cleaning personnel had a high rate of absenteeism.

--Employees at the St. Louis yard were not using the runners which had been provided to cover car floors, thus their greasy shoes were soiling the carpeting.

--At the Detroit facility car floors were swept manually with straw brooms, because Amtrak did not have an electric vacuum cleaner that would operate on the available voltage.

Amtrak records show that, during the period March through August 1975, 2,157 scheduled turbotrains were, according to Interstate Commerce Commission criteria, an average of 36 minutes late 44.5 percent of the time. 1/ This percentage was higher than that for 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. Amtrak officials said that these trains operated on some of the most deteriorated track in the country.

Amtrak officials further said 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 in more equipment breakdowns.

Headquarters officials later said that action was being taken to increase the number of train-cleaning personnel assigned to the Chicago facility and to equip the Detroit shop with an electric vacuum cleaner.

PASSENGER REACTIONS TO AMTRAK SERVICE

In the final analysis Amtrak's success will depend on whether the service provided meets passenger expectations. Our interviews with many passengers showed that their complaints generally involved the same situations as passengers complained about during our previous review. Most criticism concerned the air-conditioning failures and the overall lack of cleanliness of trains. However, a number of passengers interviewed said they were satisfied with the service and had no specific complaints.

1/Interstate Commerce Commission regulations give some leeway in being adjudged late. The Commission presently 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 its scheduled arrival, it would be considered ontime; if, however, it arrives 31 minutes after its scheduled arrival, it would be considered 1 minute late. The Commission is planning to amend its regulations to make them applicable also to all intermediate stops.

On the basis of our observations, Interstate Commerce Commission hearings, 1/ and passenger interviews, it is obvious that Amtrak's service needs improving. Yet a number of passengers expressed complete satisfaction with the service. Why does this incongruity exist?

There are a number of factors which appear to influence individual passenger's opinion of the service received. These include (1) their individual tolerance to the situations encountered, (2) the purpose of their trips, and (3) Amtrak's ability to correct any unpleasant situation promptly.

Individual tolerances to varying conditions can cause widely differing views. For example, later arrivals may be of no consequence to some people traveling for pleasure, whereas businessmen may miss important meetings or appointments because of late arrivals. Obviously, ontime arrivals for the businessman are of overriding importance.

Another important factor is the purpose of the trip. If the passenger is riding the train only to get from one point to another, dirty windows are of less importance than they are to one riding the train to enjoy the scenery.

Amtrak's ability to promptly correct problems which arise en route can also have an impact on an individual's opinion. For example, one couple traveling Amtrak for health reasons told us they were dissatisfied with the service because of air-conditioning and lighting failures. They said that the heat had precluded any sleep, and because of the lighting failure, they had been unable to locate and take their prescribed medication. However, we believe if Amtrak had promptly corrected these failures or had moved this couple to a car with no equipment malfunctions, they would probably have been satisfied with the service.

One woman from Germany with whom we talked said that Amtrak's service was adequate--equal to or better than that of the European railways; however, she was upset because her husband had to ride on another train. She said that Amtrak's reservation office had told them there was

1/During 1975 the Interstate Commerce Commission held hearings to obtain the public's views on the quality of Amtrak's service in various cities throughout the country. The witnesses at these hearings--mostly previous Amtrak customers--generally complained about poor train conditions, such as those we saw, and also indicated a general public annoyance with the situation.

space for only one of them on the train, yet the seat next to her was empty.

Many passengers told us that train service had improved since Amtrak had entered passenger train service, and most passengers enjoyed the food served in the dining cars. However, they also said that Amtrak still needed to improve certain conditions. They complained about unclean cars, overcrowding, rough rides, slow services, and late departures and arrivals. Most passengers riding in Amtrak's newest passenger cars were pleased with the riding comfort.

CONCLUSIONS

Amtrak's service still needs improvement. If rail passenger transportation is to present a viable alternative to other transportation modes, the prospective passenger must be convinced that he will find ontime service in clean and comfortable trains. Instead, passengers have found that they cannot expect a consistently acceptable level of service.

We believe that service to passengers on Amtrak trains could be upgraded if the corporation's management would concentrate on improving its maintenance and repair program. (See ch. 3.)

CHAPTER 3

IMPROVEMENTS NEEDED IN MANAGEMENT OF

REPAIR AND MAINTENANCE ACTIVITIES

The railroads and commercial firms are under contract to repair and maintain Amtrak's rolling fleet. Repair and maintenance activities cost Amtrak about \$150 million during fiscal year 1975.

Amtrak's actions to correct the deficiencies we reported in 1973 (B-175155, June 21, 1973) have been largely ineffective. Amtrak has generally been slow in carrying out plans for improving management controls and reducing costs. We found that:

- Amtrak had not followed a periodic maintenance program.
- Amtrak still did not have an effective system of surveillance over equipment repair and maintenance.
- Progress toward automating repair and maintenance data had been slow, and the lack of automation had contributed to weaknesses in administrative controls over costs.
- Lack of work productivity standards apparently had resulted in higher repair and maintenance costs.

PERIODIC MAINTENANCE PROGRAM HAS NOT BEEN FOLLOWED

Amtrak's program for maintaining its equipment at regular intervals has not been followed, because many passenger cars are regularly out of service. As a result, Amtrak managers have been reluctant to remove additional equipment from service so that necessary maintenance could be done. Also locomotives have not been regularly maintained due to the limited capabilities of the railroads that operate maintenance facilities. Amtrak officials estimate that all the maintenance yards together are averaging only 60 percent compliance on periodic maintenance.

Amtrak has established schedules in its contracts with the railroads for regular maintenance of its equipment. The schedules call for work to be done periodically. For example:

- Interior and exterior heavy cleaning of passenger cars every 3, 4, or 6 months, depending on the type of car--dining car, coach, etc.
- Semimonthly and annual maintenance of passenger cars and locomotives, including preseason programs for heating and air-conditioning.
- Overhaul maintenance at 2-year and 4-year intervals for cars and locomotives requiring overhaul or replacement of critical components, including motors, generators, coolers, and pumps.

Much of Amtrak's equipment, however, was not receiving its scheduled maintenance. For example:

- During the 6-month period from December 1974 through May 1975, the maintenance facility at Boston completed heavy cleaning on less than 30 percent of the cars it received. The Los Angeles maintenance facility had cleaned less than 20 percent of its cars during a similar period.
- By June 1975 about 200 of Amtrak's cars had not yet been given preseason air-conditioning service. Some of the cars with defective air-conditioning systems that we had noted had not been given preseason servicing.
- As of June 1975, none of 31 locomotives maintained at Barstow, California, had been overhauled or scheduled for overhaul even though the locomotives had been operating since June 1973 and had accumulated an average of 434,000 miles, ranging from 462,700 to 363,000 miles. The Amtrak inspector at Barstow told us that some locomotives at Barstow needed the 450,000-mile overhaul as required by the operating railroad. He also said that 29 of the locomotives were already on the threshold of major mechanical failures and that the longer they went without an overhaul the greater would be the potential for a major breakdown. Amtrak officials agreed that the locomotives at Barstow needed overhaul work. In September 1975 they told us that they were looking for a facility capable of doing the work.
- Amtrak generally provided commercial refurbishment facilities at Wilmington, Delaware, and at Mira Loma, California, with only about 1 week's advance notice that cars would arrive for overhaul. According to

contractor officials, about 2 to 4 weeks' advance notice is needed to complete preparations for overhaul, such as getting car wiring diagrams, scheduling the work, and getting replacement parts. Failure to give the contractors sufficient notice appears to have resulted in operational difficulties for the contractors, which may have increased their charges to Amtrak.

Amtrak headquarters officials told us that cars were not taken out of service to undergo regular maintenance, because a high percentage of cars ordinarily were out of service. Amtrak regularly has about 33 percent of its cars out of service due to equipment breakdowns, emergency repairs, and other maintenance work. Amtrak officials said that scheduling cars for maintenance would increase this percentage and result in passenger car shortages. Amtrak's practice is to send cars in for maintenance after they have become inoperable due to equipment breakdowns. Officials also told us that a computerized specifications system was being developed as part of Amtrak's systems development plan. (See p. 27.) The specifications system is supposed to facilitate planning of overhaul and repair activities to reduce downtime. Implementation is planned for late 1976 or early 1977.

Conclusions

In our view, it is not sufficient for Amtrak to merely provide "space" for its passengers as is its current practice; it should provide its passengers with services that are of an acceptable level of quality.

We believe that Amtrak's program for scheduling its rolling stock for maintenance is a good preventive measure and, if closely followed, should help to insure the availability of serviceable equipment. Amtrak, however, has not been following its maintenance schedules, thus rendering the maintenance program ineffective and contributing to the unsatisfactory condition of its equipment. We believe Amtrak should make every reasonable effort to follow its regular maintenance schedule to upgrade the quality of service to passengers, even if in some cases this means providing less space for passengers.

Recommendations

We recommend that the president of Amtrak:

--Take equipment out of service when necessary, to insure that the schedule for regular maintenance

of rolling stock is followed more closely. Although this may cause space availability problems in the beginning, such action should go a long way toward preventing breakdowns in the future.

--Give refurbishment contractors ample leadtime notice as to when and which equipment is to be overhauled.

Amtrak comments

In his April 12, 1976, letter, the president of Amtrak expressed general agreement with our recommendations. The president said that equipment was inspected regularly and that equipment was removed from service, if necessary, to make the inspections. Maintenance schedules for older equipment were being followed according to maintenance facilities' responsibilities, except for heavy cleaning. Although heavy cleaning programs had been established, they were not always followed, but he believed the situation was improving. New equipment was scheduled out of service for manufacturer's and Amtrak's required maintenance on a prescribed time cycle. The president also said that scheduling equipment for refurbishment was subject to frequent changes due to unexpected or unusual occurrences, such as derailment and collision damage, fire, freeze, and strike damage, as well as the impact of new equipment and train-makeup changes to meet market demands. However, he believed that refurbishment contractors were being given adequate leadtime notification. On April 27, 1976, Amtrak officials told us that these improvements in inspection and maintenance practices had taken place since we completed our review.

CONTROLS OVER REPAIR AND MAINTENANCE NOT EFFECTIVE

Since Amtrak must usually rely on the railroads to do the needed maintenance and repair to keep its equipment in satisfactory condition, it is essential that Amtrak maintain adequate controls over the contractors' work. This is necessary to insure that all equipment is maintained as required, that claimed work is actually done, and that the work is satisfactory.

In our June 1973 report, we noted that Amtrak needed to increase its surveillance over the maintenance and repair activities of the contracting railroads. Although Amtrak had increased its surveillance, it still was not effective at the time of our review.

More and better inspections needed

As of June 1975, Amtrak had assigned 74 inspectors to monitor the repair and maintenance of Amtrak passenger cars and locomotives at 80 maintenance yards, terminals, and shops located across the United States. These inspectors were the only Amtrak daily representation at many of these facilities. They were responsible for insuring that the Amtrak fleet receives:

- Daily interior and exterior cleanings.
- Periodic heavy cleanings.
- Scheduled periodic maintenance.
- Needed repairs.

Although the number of inspectors assigned was a large increase over the five inspectors Amtrak had in 1972, at the time of our review the inspectors had not been given formal, comprehensive instructions on their duties, responsibilities, or authority. In addition, Amtrak had not established any guidelines or criteria for determining the number of inspectors needed.

The following chart shows the number of inspectors and the amount of equipment assigned to each of Amtrak's four regions.

Inspector and Equipment Assignments
as of June 1975

<u>Regions</u>	<u>Locomotives</u>		<u>Passenger cars</u>	
	<u>Inspectors</u>	<u>Equipment (note a)</u>	<u>Inspectors</u>	<u>Equipment (note b)</u>
Central	6	43	16	548
Eastern	7	89	20	564
Southern	2	45	5	336
Western	<u>6</u>	<u>127</u>	<u>5</u>	<u>442</u>
	21		46	
Non resident supervisors	2		5	
Total all regions	<u>23</u>	<u>304</u>	<u>51</u>	<u>1890</u>

a/Does not include 68 locomotives set aside pending retirement.

b/Does not include 195 cars set aside pending retirement or reassignment.

Amtrak inspectors generally did not inspect repair and maintenance work at railroad facilities while the work was in process. Inspections of completed work was limited to sample testing. The inspectors we interviewed told us that they had not been given formal, comprehensive instructions on their duties, responsibilities, or authority. Without specific guidance, they had established their own priorities and had devised their own surveillance methods. This had resulted in wide variations in the way inspections were made. Some inspectors used a checklist as a guide, many did not. Records of inspections made usually were not kept or were incomplete.

Amtrak not only lacked specific guidance on how to carry out inspections but also had no criteria for what an inspector's workload should be. The workload of a facility may consist of turnaround cleaning, repairs, and scheduled periodic maintenance or varying combinations of these services. Consequently, an inspector's workload varies from place to place.

For example, Amtrak had assigned 2 inspectors to the Seattle maintenance facility to monitor all the work done on over 200 passenger cars that were serviced there. At Chicago 4 different railroads service about 18 Amtrak trains daily in 4 different maintenance facilities. Amtrak had assigned 6 inspectors to inspect all the work done on 138 passenger cars and 3 persons to inspect the work done on 28 locomotives. Two of the Chicago inspectors spent most of their time on administrative duties, such as preparing maintenance reports for Amtrak headquarters.

At other facilities, Amtrak inspectors often were pre-occupied with non-maintenance-related duties. For example, at the Wilmington facility, which is responsible for servicing Amtrak's metroliner fleet and electric locomotives, two of the three inspectors assigned spent most of their time during a recent 10-month period monitoring tests required by the Federal Railroad Administration on a new locomotive being designed for Amtrak. Amtrak officials said they believed it was not feasible to hire short-term inspectors for the tests because knowledgeable supervisors were required and because the tests were made at erratic intervals.

Some of the facilities did not appear to have enough Amtrak inspectors to adequately cover the workload. For example, at a Los Angeles facility, 1 inspector was assigned to monitor the work done on 52 cars daily. The equipment was being serviced 7 days a week, 16 hours a day.

Overall, Amtrak's 74 inspectors were assigned on a permanent basis to only 39 of the approximately 80 maintenance facilities throughout the country. Many facilities are visited by inspectors infrequently. Consequently, many pieces of equipment are either cleaned or repaired and placed back in service by the railroads without being inspected by Amtrak. The lack of inspectors has resulted in needed maintenance work not being done and in additional costs and passenger dissatisfaction. For example, we noted:

- A lack of followup on defects reported by the train crews, to insure that necessary repairs were made before defective cars were returned to service. Train crew reports kept on board Amtrak cars showed that air-conditioning and door malfunctions had been repeatedly reported by the train crews without being corrected when the cars were in for servicing. Space on the report to show that the repairs had been made was often blank or contained the phrase "checked-out ok," even though the reported defect continued.
- Amtrak was being charged for work that was not done. Some maintenance records showed that equipment had been cleaned, yet our inspection immediately after the purported cleanings showed that the cars were still dirty, indicating they had not been cleaned well or had not been cleaned at all. At a Chicago facility which Amtrak regularly paid for exterior car washing, the scrubbing brushes were so worn that they did not touch the cars. At another facility Amtrak had been billed \$195 for a new locomotive starter part when, in fact, the contracting railroad had rebuilt the old part.
- Passenger dissatisfaction due to the discomfort and the delays caused by poorly maintained equipment. From our discussions with passengers onboard Amtrak trains, it appeared they were acutely aware of the shortcomings, particularly air-conditioning failures, and the general unclean condition of the seats and carpeting. Passenger dissatisfaction is also shown in the volume of complaints Amtrak and the Interstate Commerce Commission received. (See ch. 2.)

Amtrak officials told us in March 1976 that they had begun to implement a program for improving the quality of work done at the maintenance facilities. The number of

employees having the responsibility for inspecting passenger car repairs had been increased to 154, and 74 train riders (traveling electricians and mechanics) will be employed for the 1976 summer season. Also during 1976 officials expect to make quality control studies which will form the basis for identifying chronic problems and revising unsatisfactory work methods.

Headquarters monitoring of maintenance activities should be improved

Officials at Amtrak's headquarters told us that they had little influence over the railroads and that Amtrak's inspectors at the various maintenance facilities represented the limit of Amtrak's authority at the facilities. We believe that Amtrak is hampered in managing its repair and maintenance function under these conditions. At some facilities Amtrak had made unsuccessful attempts to persuade railroad management to correct operating deficiencies that did not meet Amtrak's maintenance standards as spelled out in the contracts with the railroads. Amtrak officials told us that some of the railroads had reacted with indifference, because they would rather be out of the passenger service business.

Amtrak headquarters receives daily reports from its field inspectors, contracting railroads, and passengers that show the quality of service the railroads have been providing. The information was summarized and circulated to administrative offices responsible for train operations. Some of these summaries were:

- Daily reports on the preceding day's delays en route that affected ontime performance and the mechanical failures en route, such as air-conditioning, heating, and electrical failures, that did not necessarily affect ontime performance. Delayed trains were identified by route number and defective cars were identified by car number and the route assigned at the time of failure so that officials were able to identify the responsible contracting railroads. The reasons for the delay and the nature of the mechanical failures were noted for each train and each car.
- Statistical data on the operating condition of Amtrak's entire fleet were compiled daily. The data showed for each responsible railroad, the number of locomotives and cars that were assigned and the quantities that were unserviceable due to mechanical failures and other defects.

--Tabulations of passenger complaints under 13 general categories. Three categories related to equipment defects.

Coach equipment condition.
Sleeper equipment condition.
Passenger comfort.

--A 24-hour mechanical desk was established recently to assist in monitoring cars under repair, collecting data on en route failures, and setting priorities for running repairs and keeping daily reports of un-serviceable cars.

Amtrak officials used the reports and data mainly for guidance of day-to-day activities, such as equipment assignments and public relations functions. There was little indication, however, that the information had been used to evaluate contractor railroad performance over extended periods.

Headquarters management should use these summaries as a basis for regular, periodic evaluations of contractor railroad performance and should take corrective action on the continuing failure of railroads to live up to their contractual obligations.

Headquarters officials told us that evaluations were not made because of management's emphasis on resolving immediate problems that arose daily. Officials said they knew some railroads had failed to meet contract performance requirements. Amtrak, however, did not insist that the railroads perform in accordance with contract requirements because of the railroads' indifference to Amtrak's requests for improvement. Officials believed that the railroads would rather be out of the passenger service business completely. Although Amtrak could institute legal action under its contracts with the railroads, Amtrak officials believe that litigation would, at best, be time consuming and cumbersome.

Conclusions

Amtrak has, since our last review, made some progress in insuring that its equipment receives the necessary maintenance and repairs. However, the field inspection staff could be made more effective by developing (1) inspection guidelines so that all inspectors would know what and when they are to inspect and (2) criteria for the number of inspectors needed at the various maintenance facilities, based on the workload and what they are to do.

Even with such guidelines and criteria for use by the field inspection staff, the maintenance program probably will continue to be hampered by the railroads' indifference to performing maintenance efficiently, economically, and effectively. We believe that Amtrak receives enough data from enough sources to enable it to periodically evaluate railroad performance. Such evaluations could strengthen Amtrak's argument for seeking better service from the railroads and might result in improved railroad performance without litigation.

We recognize the problems that Amtrak faces in trying to get the railroads to live up to their contractual obligations. We believe, however, that Amtrak should get the service it has contracted for and is paying for. Legal proceedings may, in fact, be slow and cumbersome as Amtrak suggests, but continued noncompliance by the railroads leaves Amtrak no other choice.

Recommendations

We recommend that the president of Amtrak:

- Develop specific inspection guidelines for use by Amtrak's field inspectors, to insure that equipment needing service, whether it be turnaround cleaning or heavy repairs, is inspected when it should be.
- Develop staffing criteria, based on workload and inspection guidelines, to insure that a sufficient number of inspectors are always assigned where they are needed.
- Make periodic, formal evaluations of the individual railroads' performance and use these evaluations as the basis for taking action, including legal action, if necessary, to get the railroads to comply with the contract terms.

Amtrak comments

In his April 12, 1976, letter, the president of Amtrak expressed general agreement with our recommendations. He said that a maintenance planning group had been established at Amtrak headquarters to help develop improved inspection guidelines, manuals, and staffing criteria. Amtrak has issued guidelines for Amtrak field and shop personnel and maintenance contractors covering consolidated maintenance

instructions, overhaul specifications, work order control system, and onboard maintenance control system. Amtrak plans to issue improved guidelines for inspectors in October 1976 and to revise staffing levels by July 1976. Standards of costs, quality, cleanliness, and reliability for railroads shopwork will be developed by July 1976. In addition, Amtrak is developing a system for continuous monitoring and reporting on railroad performance so that corrective action can be taken promptly. This system is scheduled for completion in September 1976. The president said that contract amendments have been prepared, subject to railroad acceptance, to provide for penalty assessments if the railroads do not adhere to prescribed schedules and standards of work.

MAINTENANCE MANAGEMENT COULD BE IMPROVED WITH AUTOMATED DATA

In 1973 we reported that the contracting railroads had not documented their maintenance work and that Amtrak had little or no assurance that its equipment was being maintained by Amtrak-prescribed standards. Amtrak told us that it would install a maintenance record system to cover mechanical components, such as air-conditioning, affecting passenger comfort and convenience.

In October 1974 Amtrak decided to include equipment maintenance as a part of its systems development plan--a plan to develop a computer-based information system to serve Amtrak-wide needs in such areas as budgeting, market analysis, procurement, and food services on trains.

Under the plan the equipment maintenance system would provide an overall maintenance plan and the resources to meet that plan. It would include components, such as maintenance scheduling and performance, inventory controls, and cost controls. The system is to support ordinary day-to-day maintenance, unscheduled repairs, and heavy overhaul maintenance operations.

During our review Amtrak was still in the early phases of implementing the plan. Some preliminary work had been done on equipment availability, heavy overhauls, spare-parts inventories, and new-car system failures. The plan, however, was not formalized and the target dates were not established for accomplishing the successive phases of the plan until August 1975. The plan was not given a high priority until October 1975, when the board of directors approved it. At that time Amtrak planners estimated that the system for monitoring equipment repair and maintenance would be in use

by December 1976 and that the overall plan would be completed by June 1979. However, in December 1975 Amtrak officials told us that all target dates had been set back 2 to 3 months and that the maintenance system would not be complete until about February 1977, due to other administrative priorities. Amtrak officials told us in April 1976 that the maintenance system is scheduled for completion the second quarter of 1977. Officials also said that major repairs to the new passenger cars recently purchased would also be monitored through the system beginning in 1976. We believe that, had Amtrak been able to implement its automation system for the repair and maintenance function, weaknesses in maintenance management--such as inadequate maintenance records, spare-parts shortages, and failure to take advantage of warranties--would have been highlighted for corrective action.

Inadequate maintenance record system

Amtrak has established certain guidelines which all contracting railroads are required to follow in maintaining Amtrak passenger cars and has prescribed the various forms, retained on the cars, that must be marked to show that the required inspections, maintenance, etc., have been done. These guidelines define the frequency and details of work required to prevent deterioration of interiors and mechanical and electrical systems. Amtrak divided the passenger car inspection, maintenance, and repair work into two categories:

- Turnaround work, which is routine maintenance on a car at every location where it terminates an assigned run.
- Layover work, which is the periodic inspection, maintenance, and repair normally done only at assigned facilities.

Maintenance records made available to us at three of four Chicago facilities engaged in both turnaround and layover work were incomplete. For example, the records did not show maintenance by car number, details of the maintenance done, serial numbers of major parts replaced or repaired, and repairs done at other facilities. The fourth facility had detailed records of maintenance done locally; however, it was unable to give information concerning repairs done elsewhere. This information was not being collected at a central location for use in avoiding inspection and maintenance work duplication.

A cross-check of records at two major maintenance facilities of one railroad illustrates the duplication that can occur because complete maintenance records are not kept in each car. For example:

--A passenger car received its normal monthly inspection in Los Angeles on January 15, 1975. The same car received an identical monthly inspection in Chicago 3 days later.

--On February 14, 1975, a passenger car received its quarterly inspection in Los Angeles. The car received the same inspection in Chicago 7 days later.

--On another passenger car the quarterly inspection was done in Los Angeles on March 5, 1975. The inspection was done again in Chicago 2 days later.

We also found that cars having repeated equipment failures went unchecked. During a trip from Chicago to Philadelphia on August 2 and 3, 1975, the lounge car lost all electrical power soon after leaving Chicago. The conductor and porter told us that it was a frequent occurrence and that it usually happened because the generator system required oil. The train crew reports onboard the lounge car showed that the same problem had been reported on July 21 and 27; there were no indications that any repair work had been done to correct this recurring failure. Data on recurring system failures, with the exception of air-conditioning failures, was not centrally collected.

Beginning in October 1975 information was being collected manually on other selected types of defects. Amtrak officials told us that keeping all necessary maintenance data centrally on their 2,500 pieces of rolling stock would be virtually impossible without using automated techniques. Officials plan to include data on maintenance in the new automated system. They expected the maintenance and system failure data phase to be ready during April 1976.

Spare-parts shortages

Since 1974 Amtrak has reduced considerably the average number of passenger cars out of service due to spare-parts shortages. Amtrak's inventory control system, however, was still inadequate, and it relied on stopgap measures to improve parts availability.

Before June 1974 nearly 300 cars a week were not available for service due to spare-parts shortages. By July 1975

the average number had decreased to 40 cars. The improvement was largely the result of efforts by Amtrak materials control personnel who, beginning in June 1974, were assigned the task of manually locating needed spare parts at various storing facilities. The parts were then sent to those facilities needing the parts.

At a Chicago facility the job of locating needed spare parts oftentimes was given to the Amtrak inspectors stationed at the facility. This further weakened Amtrak's control over repair costs, since it reduced the amount of time the inspectors had available to make their normal inspections. There were indications that the railroads, instead of keeping adequate inventories when they could reasonably be expected to, relied on Amtrak inspectors to locate needed spare parts.

Amtrak headquarters officials told us that including spare-parts inventories in the automated system whereby essential data will be updated daily by use of computer terminals at major stocking points--would enable further reductions in out-of-service equipment and would eliminate the need for Amtrak representatives to manually locate spare-parts. They expect to begin installing the terminals by July 1976 for use by the first quarter of 1977.

Failure to take full advantage of warranties

Private industrial firms that overhaul Amtrak's passenger cars, including refurbishments, ordinarily warrant their work for 1 year. Also railroads maintaining and repairing Amtrak equipment are required to comply with the terms of manufacturers' warranties on parts replacements. However, Amtrak had no systematic method for insuring maximum benefit under warranties on work done to rolling stock. Amtrak's failure to take full advantage of warranties has resulted in additional repair costs.

Amtrak did not always benefit from these warranties because its inspectors and railroad personnel generally were not fully knowledgeable or aware of the warranty terms. Facilities in Seattle and Los Angeles routinely repaired cars which had been in service less than 1 year after having been refurbished and automatically charged Amtrak for the services without considering the possibility that the repairs were under warranty. High-cost system components, such as diesel motors, generators, and air-conditioning compressors, were being replaced without regard to the warranty considerations, such as the reason for the failure of the components or the time that had elapsed since the components were last repaired.

In December 1975 Amtrak was just beginning to phase in a program for controlling repairs made to equipment still under warranty. A limited number of high-cost items had been designated to be monitored, and automated data was being used on a test basis. Amtrak officials plan to use the computer terminals that are to be installed at major stocking points to help control warranties on repairs.

Conclusion

We believe that Amtrak's slowness in automating much of its repair and maintenance data has helped continue the types of management weaknesses noted in our 1973 report. The planned system, if implemented, will be a major improvement.

Recommendation

We recommend that the president of Amtrak assign a high priority to completing the automated maintenance system, to avoid further delays and to insure completion at the earliest possible date.

Amtrak comments

In his April 12, 1976, letter, the president of Amtrak expressed general agreement with our recommendation. He said that he personally had reviewed the planning and scheduling of the automated program and had presented its features to the board of directors and that he would continue to support the program to its completion.

NEED FOR WORK PRODUCTIVITY STANDARDS

Amtrak had not established productivity standards for monitoring work output at railroad repair and maintenance facilities. Without this vital management tool, Amtrak managers were unable to effectively monitor operating efficiencies at the shops for controlling costs.

During our visits to the various railroad facilities, we observed wide variations in physical layouts and facilities' equipment--different track and shop layouts and better or more equipment for doing work. Amtrak officials said that these variations affected the length of time and the number of mechanics needed to do a particular job. The Amtrak officials explained that, because of these variations, Amtrak had not established productivity standards that would apply to all the facilities. However, Amtrak in nearly all cases also failed to develop standards applicable to individual facilities.

Except for limited standards on periodic heavy cleanings, there was no evidence that productivity standards had been established to measure work efficiency and minimize costs. The cleaning standards were developed through a joint Amtrak-railroad effort involving time-and-motion studies at one maintenance facility in Hialeah, Florida. Amtrak officials told us that the results of the studies had been applied to that one facility only.

We noted many variations in the number of railroad employees assigned to various shops. The table below shows that at Chicago, where Amtrak trains are serviced by four contracting railroads, the number of railroad employees required for each dispatched piece of equipment varied from 7.5 to 1.8. At the nearby Amtrak-run facility at Brighton Park, Illinois, 4.6 persons were required for each dispatched piece of equipment.

<u>Railroad maintenance facility</u>	<u>Average number of cars and locomotives dispatched daily</u>	<u>Number of employees</u>	<u>Average employees for each piece of equipment</u>
Shop A	25	187	7.5
Shop B	79	284	4.1
Shop C	21	a/134	6.4
Shop D	38	a/68	1.8
Amtrak (Brighton Park)	28	129	4.6

a/Represents equivalent employees assigned to Amtrak maintenance out of total work force at facility.

We also noted considerable mismatching of personnel to workloads at some of the facilities. For example, at one shop the day shift started at 7 a.m., but the first train did not usually arrive until 9 a.m. During the 2 hours until the train arrived, the crew passed the time in idle talk.

In March 1976 Amtrak officials told us that they had begun to implement a program for increasing the work output of the maintenance facilities. They expect that by November 1976, work samples will have been obtained from all of the major

shops to measure craft utilization. This information is to form the basis for methods studies at problem shops and to help establish productivity standards for repetitive tasks, such as pre-season air-conditioning work, and all other major work. Amtrak plans to use computer technology to compare actual productivity standards and to report significant variances to its headquarters and shop management. This program is scheduled to be operational by January 1977.

Conclusion

We believe that Amtrak needs to establish work productivity standards as a means of controlling costs. Without clearly defined standards, Amtrak has no reliable norm for measuring actual productivity to recognize indications of weaknesses in production controls that may inflate costs.

Recommendation

We recommend that the president of Amtrak include work productivity standards, when completed, in Amtrak's contracts with the railroads.

Amtrak comments

In his April 12, 1976, letter, the president of Amtrak expressed general agreement with our recommendation. He stated that a program to develop time standards for measuring repetitive tasks to determine work efficiency and manning requirements was scheduled for completion in October 1976 and was to be operational by January 1977. He said Amtrak intended to incorporate the standards, including penalty provision for deviations from the standards, in the contracts with the railroads. The contract terms are to be negotiated with the railroads as contracts are renewed.

CHAPTER 4

STATUS OF AMTRAK PROGRAM

FOR ASSUMING CONTROL OF MAINTENANCE FACILITIES

Public Law 92-316, approved June 22, 1972, amended the Rail Passenger Service Act of 1970 to provide that, insofar as practicable, Amtrak directly operate and control all aspects of its rail passenger service. The law was intended to help correct deficiencies in Amtrak's operations. Since its inception, Amtrak has contracted with railroads for maintenance of its equipment. The legislative history of this amendment indicates the Congress concern.

"One of AMTRAK's principal problems is the fact that it is not exercising direct control over its passenger services but is contracting with the railroads. * * * Whenever there is a deficiency in service quality or in cost control, AMTRAK's only resort is to channel a request for corrective action to the contracting railroad and, if no action is taken, institute legal action under the contract. This process is at best cumbersome and time-consuming."

Amtrak management has stated that it is in basic agreement with the legislative directive that it assume control of the repair and maintenance of its fleet of locomotives and passenger cars. It has, however, made little progress in that direction. As of December 31, 1975, only three repair and maintenance facilities were under Amtrak control--Amtrak-owned shops at Beach Grove, Indiana; Brighton Park; and a leased facility at Fields Point, Rhode Island. The Brighton Park and Fields Point facilities were used mainly for servicing turbotrains. The Beach Grove facility was primarily a heavy-overhaul shop. Amtrak has purchased for \$1.4 million the construction site for a facility at St. Louis.

AMTRAK PLANS FOR ASSUMING CONTROL OF ADDITIONAL FACILITIES

In addition to the 3 facilities and the 1 site already under Amtrak control, 18 facilities have been selected to be acquired by 1978. One facility is being purchased as a replacement for the leased Fields Point facility. Amtrak estimated that \$259 million would be required for purchasing and upgrading the facilities selected for Amtrak management. The 21 facilities planned for Amtrak control are to service the equipment now being serviced by 35 shops.

Amtrak cost studies show that the facilities to be brought under its control will cost less to operate under Amtrak's control than under railroad management. In some cases takeover should increase output, increase equipment availability and operability, and improve material inventory controls. The studies also show that, when the planned takeovers are completed and the facilities are upgraded, the annual cost savings will be approximately \$42 million--\$17 million on maintenance costs and \$25 million due to increased equipment availability.

When planning its maintenance facilities, Amtrak found that most of the existing maintenance facility locations were still well suited to its rail operation. Studies were made during August 1975 that emphasized the following nine major considerations which Amtrak planners believe most of the facilities satisfy.

1. Shops are located at termination points so that maintenance can be done when trains are empty and available for maximum periods.
2. Maintenance facilities and railroad stations are close to each other, which will require minimum time and expense for moving equipment and allow maximum time for maintenance.
3. Work forces are already trained.
4. A functional operation already exists.
5. Enough land to accommodate present and projected requirements.
6. Equipment ingress and egress is easy.
7. Property is available for purchase or lease.
8. Commissaries to service the dining and snackbar cars are already established.
9. Onboard service crew bases have been established.

The studies estimated the potential cost savings and operating benefits of the various sites, including:

--Cost savings likely to result from the initial takeover of the sites (designated "phase I") and further cost benefits expected as a result of subsequent upgrading of the facilities (designated "phase II").

--Operating benefits expected as a result of direct Amtrak control of facility management. These include (1) improved output--servicing more equipment better, because of Amtrak's maximizing its control of facility operations, and increasing facility capabilities through upgrading, (2) improved availability--increasing the amount of equipment that is available for use by servicing it more quickly as a result of increased facility capability, (3) improve operability--keeping equipment in better condition by doing regular periodic maintenance, and (4) decreased material inventories--reducing the amount of spare parts kept on hand by centrally controlling inventory levels.

The chart on the following page summarizes the cost and operational benefits that Amtrak estimates it will realize from taking over 19 selected facilities. It shows that Amtrak's evaluations of the facilities to be acquired in many cases would result in only marginal benefits--5 percent or less in cost benefits and benefits from improved facility operations. Other possible benefits such as additional income from increased ridership because of better maintained equipment were not included in the evaluations.

--Ten facilities are likely to have only marginal savings in maintenance costs. Even though some of the proposed sites, such as St. Petersburg and Hialeah, promise major improvements in facility operations. Amtrak managers nonetheless believe the potential cost savings to be marginal.

--Four facilities will probably not improve their operations. Three of these facilities--the St. Louis and Los Angeles car facilities and the New Orleans locomotive shop--are expected to have only marginally lower operating costs under Amtrak management.

--The operation of three facilities scheduled to be brought under Amtrak control may even reduce operating efficiencies. Amtrak expects that acquisition of the Boston and New Orleans car facilities and the Rensselaer, New York, site will adversely affect the material inventory function.

The benefits projected by Amtrak for many of the facilities it has selected are so nominal that they could be sharply reduced or could be eliminated by unforeseen contingencies.

Maintenance Facilities Acquisitions Analysis of Benefits

Location	Potential benefits					
	Phase I--takeover cost reduction	Phase II--Upgrading cost reduction	Improved output	Improved availability	Improved operability	Decreased material inventory
	Cost benefits	Cost benefits	Facility availability	Facility operations	Benefits	Benefits
Passenger cars:						
1. Chicago Western Ave.	None	Fair	Fair	None	Good	None
2. Chicago 12th St.	Fair	Great	Great	Fair	Good	Good
3. Philadelphia, Pa.	Fair	Good	None	None	None	None
4. Sunnyside, N.Y.	None	Good	Good	Good	Good	None
5. Boston, Mass.	None	Fair	Good	Fair	Fair	Fair
6. Washington, D.C.	Great	Great	Great	Great	Great	Good
7. Hialeah, Fla.	None	Fair	None	Good	Fair	None
8. St. Petersburg, Fla.	None	Fair	Good	Good	Good	None
9. St. Louis, Mo.	None	Fair	None	None	None	None
10. Los Angeles, Calif. 8th St.	None	Fair	None	None	None	None
11. Seattle, Wash.	None	Fair	None	Good	Good	None
12. Oakland, Calif.	None	Fair	Great	None	Fair	None
13. New Orleans, La.	None	Fair	Great	Fair	Good	Fair
14. Rocky Mount, N.C.	(a)	(a)	(a)	(a)	(a)	(a)
Turbotrains:						
15. Rensselaer, N.Y.	None	Fair	Fair	None	Fair	Good
Locomotives:						
16. Chicago, 16th St.	Great	Great	Fair	Fair	None	None
17. Los Angeles, Calif.	Great	Great	None	None	None	None
7. Hialeah, Fla.	None	Fair	Good	Good	Good	None
5. Boston, Mass.	None	Fair	Good	Good	Fair	None
18. Washington, D.C.--Ivy City	Great	Great	Good	Good	Good	None
13. New Orleans, La.	None	Fair	None	None	None	None
19. Denver, Colo.	(a)	(a)	(a)	(a)	(a)	(a)

Legend	Phase II		Description
	percent change	percent change	
Fair	5	3	Improvement
Good	10	7	Improvement
Great	15	10	Improvement
Fair	-	3	Increase in costs
Good	-	5	Increase in costs

BEST DOCUMENT AVAILABLE

In January 1976 Amtrak began a major takeover of Penn Central Railroad's Northeast and Midwest facilities due to the impending Consolidated Railroad Corporation's takeover of the operations of Penn Central and other bankrupt railroads. Amtrak plans to assume control of maintenance facilities in 11 key locations in these areas and will have about 3,000 new employees. The 11 key locations are: Chicago; Boston; New Haven, Connecticut; Springfield, Massachusetts; Philadelphia; Harrisburg, Pennsylvania; Detroit; Buffalo, New York; Rensselaer; New York city; and Wilmington. All the properties to be acquired in this phase will be leased until their purchase can be negotiated.

POOR CONDITIONS OBSERVED
AT MAINTENANCE FACILITIES

Many of the railroad-operated facilities that we visited were generally rundown and poorly equipped. Some had been in operation for well over 50 years. We observed dilapidated buildings and worn and outmoded track layouts that did not efficiently accommodate the equipment being repaired. Much of the equipment used in making repairs was outmoded or otherwise unsuitable for the rolling stock that was being serviced. Some facilities lacked adequate sheltered work areas; as a result, mechanics were required to make repairs out of doors during inclement weather. Working spaces were often too small and were cluttered because discarded parts were allowed to accumulate in them or stocks of new parts were stored in them. Following are examples of conditions that existed at some of the shops.

--The facility at Boston was in good repair and well maintained; however, there was not enough parts storage space. Some parts were stored at another facility located nearby, thus causing delays in obtaining parts. All car work is done in open areas, which may contribute to reduced efficiency during inclement weather. There was no pit area in the yard to facilitate working underneath cars and no drop table for use in changing wheels. A contractor official told us that about four cars a week needed repairs that required using a pit or a drop table. This work is done at another facility, which results in cars' being out of service about a day longer than if the work were done at Boston.

--The Sunnyside yard at New York City is old and rundown. Tracks are badly worn, railroad ties have rotted, concrete platform areas are broken up and falling apart, and about one-quarter of the track-side electrical connections are inoperative. The

track areas are filthy with accumulated trash and waste flushed from toilets on the cars. One of the boilers used to provide steam for the cars in the yard has been out of service for over a year, necessitating the rental of portable boilers during the winter months. Additionally, at temperatures below 15 F., locomotives must be coupled with cars in the yard to generate sufficient steam to heat the cars and to keep the water pipes from freezing. This procedure reduces the time available for servicing the locomotives.

--The heavy repair shop at Wilmington is used to make heavy repairs on Amtrak electric locomotives and metroliners. It is old, dirty, and generally run-down. The tracks have not been maintained, as evidenced by worn rails and rotted ties. The metroliner shop does not have a drop table for changing wheels and main transformers. Such work must be done in the locomotive shop, which requires shifting the metroliners between the shops and waiting for the drop table to become available, thereby increasing the time the metroliners are out of service.

--A train operating daily between Los Angeles and Seattle is assigned to Los Angeles for layover maintenance which is done primarily at night between midnight and 8 a.m. The train arrives in Los Angeles at 6:55 p.m. and departs the next day at 10 a.m. The outside lighting in the facility was very poor, and there was no lighting between and under the cars. Inspections and repairs of car suspensions and electrical and air-conditioning components under each car were being done by employees using flashlights.

Amtrak and railroad officials generally acknowledged that the poor working conditions were adversely affecting the servicing of equipment. The conditions were resulting in lower quality of work, more employees' being needed to do a specific task, extended equipment downtime due to additional time required to make needed repairs, and higher costs to Amtrak than would be the case if the facilities were up to date and designed to accommodate the specific equipment being serviced. Amtrak officials believe that the railroads are unwilling to make the large expenditures necessary to upgrade the maintenance facilities, because they expect that Amtrak eventually will acquire those facilities that are vital to its system.

CONCLUSIONS

The physical takeover of the various maintenance facilities, including the employees, should go a long way toward improving Amtrak's maintenance and repair program. However, the mere takeover will not, in itself, correct the type of problems discussed in chapter 3. Since Amtrak's studies of many of the various facilities proposed for takeover show only marginal cost or operational benefits, we believe it is imperative that Amtrak take action to improve compliance with maintenance schedules, inspection practices, headquarters monitoring, and use of automated data and controls over productivity. Otherwise the facilities to be acquired will continue to be inefficient and uneconomical and even the marginal benefits might not be realized.

CHAPTER 5

SCOPE OF REVIEW

2
3
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We reviewed Amtrak's maintenance policies and procedures and interviewed Amtrak officials at the Washington headquarters, field offices, and various repair facilities, to determine their respective roles in Amtrak's maintenance program. We also held discussions with officials of the railroads and other firms which do repair and maintenance services. We reviewed available studies of Amtrak's compliance with Federal safety and passenger service regulations and discussed the results of such studies with responsible officials of the Federal Railroad Administration and the Interstate Commerce Commission. 213 , 70

We reviewed records and observed maintenance, repair, and refurbishment work being done on passenger cars and locomotives at 15 facilities owned by railroads, 3 facilities operated by Amtrak, and 2 companies specializing in building and refurbishing railcars.

During the period June to October 1975, we made 44 inspection trips on 38 trains and inspected another 23 trains before their departure, to determine the condition of equipment, the cleanliness of passenger cars, and other maintenance-related factors which have a bearing on the comfort, convenience, and safety of riders and on Amtrak's ability to provide punctual and safe intercity transportation. These trips covered routes in 45 States. During our inspection trips, we also interviewed passengers, to obtain their views on the quality of Amtrak service.

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

Amtrak

April 12, 1976

Mr. Henry Eschwege, Director
Resources and Economic Development Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

This will acknowledge your letter of February 23 transmitting draft copies of a proposed report to the Congress entitled "Quality of Rail Passenger Service Still Hampered by Inadequate Maintenance of Equipment."

We met with your representatives on March 17 to comment and discuss our views on the report. Subsequently, on March 29 we received certain minor revisions to the report resulting from this conference.

We concur with your comments highlighting the continuing need for improvement in providing on-time service in clean and comfortable trains. We recognize this as an essential objective to revitalize rail passenger transportation and our efforts are directed to achieving that goal.

The condition of the operating fleet is directly related to the age of the equipment. Our cars have an average age of 25 years which is in excess of a car's efficient operating life. Our locomotives average more than 14 years of age which is within a locomotive's productive operating life. Thus, with older equipment of advancing age, repair work and rehabilitation is not always satisfactory to provide reliability in operations and quality in appearance and therefore, our programs call for replacing of this equipment with a modernized fleet. New equipment, together with further direct control over maintenance work, better scheduling of this work and the enforcement of work standards will greatly enhance our ability to deliver a much-improved service.

I wish to emphasize the matter of safety which is a major factor in the administration of our train operations and control. The concern for safe conditions to preserve the life and physical state of passengers and employees extends to the maintenance of equipment and facilities and this has precedence over all other activities. In that context, where work is required to maintain safe conditions, safety always has top priority and our record of safety supports this. While

Henry Eschwege
April 12, 1976
Page Two

schedules and time may not permit the completion of all maintenance work, any work necessary for safe operations and also required by laws, regulations and rules of governing agencies is mandatory.

We generally agree with your recommendations for improvements and our comments thereon are set forth below:

1. Take equipment out of service when necessary to insure that scheduled maintenance is performed and provide sufficient lead time notice to refurbishment contractors.

Rolling stock scheduled maintenance divides between two categories:

- (a) Periodic inspections and programmed maintenance at line terminals.
- (b) Cycle overhaul at heavy repair shops.

Scheduling of periodic inspections for category (a) is contingent on due date as required by governing regulations and is performed with equipment removed from service only to extent required. Programmed maintenance for category (a) is performed on a scheduled basis conforming to line terminal maintenance assignment responsibility including pre-season air conditioning and steam heat conditioning. Cars are removed from service on a scheduled basis to complete this work within Amtrak's established time limits. Although "Extraordinary" Cleaning programs have been established, they are not followed in all cases on the older equipment; however, the situation is improving. In addition, new equipment is scheduled out of service to perform manufacturer's and Amtrak's required maintenance on a prescribed time cycle.

Cycle overhaul is performed contingent on both a condition and time basis. Scheduling of equipment is subject to deviations from planned programs resulting from derailment and collision damage, unusual other occurrences such as fire, freeze, debris, strike damage and unanticipated component failures. The impact of new equipment and consist changes required to meet market demands all combine to require fluidity of overhaul schedules. For these reasons, scheduling of cycle overhaul equipment is subject to weekly revision and adequate lead time notification is now given heavy shops for their production planning.

Amtrak has completed and maintained periodic and programmed maintenance schedules within established time limits and has performed cycle heavy overhaul to 1450 cars of a fleet of 1592 cars requiring

Henry Eschwege
April 12, 1976
Page Three

heavy overhaul and cars remaining are scheduled for completion within the calendar year.

2. Develop specific inspection guidelines and staffing for field inspectors.

Specific guidelines governing both Amtrak field and shop personnel and maintenance contractors have been established and issued by Amtrak. These guidelines include consolidated Maintenance Instruction Manual and periodic supplements, overhaul specifications, work order control system and onboard maintenance control system.

Staffing criteria is a function of workload and whether the maintenance is performed under direct Amtrak responsibility or by contract. These factors govern our staffing criteria and with continuing Amtrak assumptions of maintenance facilities, the responsibilities of field inspectors are integrated with direct supervisory efforts. Field staffing including assumed personnel now totals 154 positions.

3. Make periodic formal evaluation of individual railroad performance to secure compliance with contract terms including legal action if necessary.

We agree that the evaluation of individual railroad performance of maintenance work should be formalized on a regular and periodic basis. As part of our expanding administration of the maintenance program, we have established a Maintenance Planning Group which meets each week to review, discuss and promulgate action on maintenance programs. The group reviews the inspection workload and staffing levels and recommends improvements to inspection manuals, guidelines and staffing criteria. The present enhancements to this effort will culminate in revised staffing levels in July, and in improved inspection guidelines in October. The indexing and development of standards of costs, quality, cleanliness and reliability for railroad shopwork will be completed in July.

In addition, a system is under development for the continuous monitoring and reporting on performance so that corrective action can be promptly taken and this is scheduled for completion in September.

We make every effort to have the railroads provide the level of maintenance specified. We feel that detailed inspections and standards with continuous

Henry Eschwege
April 12, 1976
Page Four

monitoring will improve performance. In this connection, we have prepared amendments to the contracts with the railroads to provide for car and locomotive preventative maintenance, inspection and cleaning in accordance with mechanical instructions. These contract changes will provide for penalty assessments for failure to adhere to the prescribed schedule and standards of work. The enforcement and compliance to such terms will be subject to the acceptance of these contract amendments we are proposing.

4. Maintain a high priority for completing the automated maintenance system to avoid delays and to insure completion at the earliest possible date.

The importance of automated systems for administering equipment status, materials control and repair and maintenance data has been underscored in our planning and will continue to receive a high priority. The design of systems, the ordering of computer equipment and the installation of programs require long-lead times and considerable work is underway in varying stages. In the meantime, interim systems are in operation, either manually or automated, which provide some support for these systems but not to the degree contemplated by the fully-automated system. The complete system will be implemented in stages. The Unit and Car Status system is scheduled for completion in April 1976. The Engineering Specifications system and integrated Material Management system will be operational no later than the first quarter of 1977. The Shop Management system will be implemented in the second quarter of 1977.

I have personally reviewed the planning and scheduling of this program and have presented its features to the Board of Directors. I will continue to see that this effort receives my support for its completion.

5. Include work productivity standards when developed by Amtrak in its contracts with the railroads.

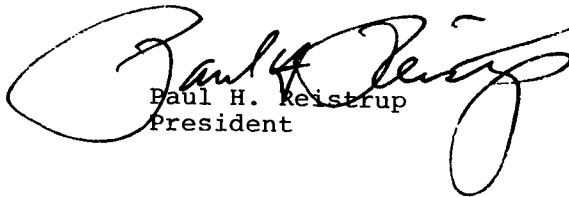
We agree that work productivity standards should be developed and should be included in contracts with the railroads. In this connection, the Maintenance Planning Group has commenced a program to develop time standards for measuring repetitive tasks to determine work efficiency and manning requirements. This program is scheduled for completion in October and is to be operational by January 1977. We intend for these standards to

Henry Eschwege
April 12, 1976
Page Five

be incorporated in the contracts with the railroads including penalty provisions for deviations from standard. Such contract terms will be negotiated with the railroads as contracts are renewed.

Progress has been accomplished over the past two years in minimizing the conditions and problems noted by your report. As indicated in our comments to you on your previous report regarding this matter, the continuing aging and use of the equipment tends to aggravate these problems. Our efforts to date have reduced the out-of-service ratio to the point where we are holding the line against further breakdowns. However, the programs mentioned above that have been implemented and are being implemented together with new cars and locomotives going into service, will provide further improvement in the condition and performance of our trains.

Sincerely,



Paul H. Reistrup
President

PRINCIPAL OFFICIALS OF
THE NATIONAL RAILROAD PASSENGER CORPORATION
RESPONSIBLE FOR ADMINISTERING ACTIVITIES
DISCUSSED IN THIS REPORT

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
PRESIDENT, AMTRAK:		
Paul H. Reistrup	Mar. 1975	Present
Roger Lewis	May 1971	Feb. 1975