

096322

73-0466

3.60.02

19  
24  
7



**REPORT TO THE SUBCOMMITTEE ON  
TRANSPORTATION AND AERONAUTICS,  
COMMITTEE ON INTERSTATE AND  
FOREIGN COMMERCE  
HOUSE OF REPRESENTATIVES**



**AMTRAK Needs To Improve  
Train Conditions Through  
Better Repair And Maintenance**

B-175155

National Railroad Passenger Corporation (AMTRAK)

**BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES**

JUNE 21, 1973

~~701575~~

096322



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

B-175155

c1 The Honorable John Jarman  
Chairman, Subcommittee on  
Transportation and Aeronautics  
Committee on Interstate and Foreign Commerce H 02 308  
House of Representatives

Dear Mr. Chairman:

As part of our review of the operations of the National Railroad Passenger Corporation (AMTRAK) pursuant to your request dated January 28, 1972, we are furnishing you with a report on the need to improve train conditions through better repair and maintenance.

Your office said that it would be helpful if we furnished you with information on segments of AMTRAK operations as our work on each segment was completed. This report is the second of several reports we plan to furnish you on specific AMTRAK operations.

c 2 A copy of this report is being sent today to the Chairman, H 2300  
House Committee on Interstate and Foreign Commerce. Also, as  
c 3 agreed with your office, copies will be sent to the Chairman,  
Subcommittee on Transportation, House Committee on Appropriations; H 312  
the President of AMTRAK; the Secretary of Transportation;  
the Chairman, Interstate Commerce Commission; and the Director,  
Office of Management and Budget.

We do not plan to distribute this report further until you agree or publicly announce its contents.

Sincerely yours,

Comptroller General  
of the United States

C o n t e n t s

	<u>Page</u>
DIGEST	1
CHAPTER	
1 INTRODUCTION	5
Establishment of AMTRAK	5
Operating contracts with railroads	5
Rolling stock owned or leased by AMTRAK	6
2 CONDITION OF AMTRAK TRAINS	8
GAO inspection trips	8
Out-of-service passenger cars	14
Conclusion	15
3 CONTROL AND SURVEILLANCE OVER MAINTENANCE AND REPAIR ACTIVITIES	16
Congressional direction that AMTRAK as- sume direct operating control	16
Need for more effective surveillance over car maintenance and repair	18
AMTRAK procedures for reporting car de- fects not followed	18
Need for establishing car maintenance record system	19
Shortage of spare parts	21
Difficulties in maintaining locomotives in good operating condition	23
Recommendations to the President of AMTRAK	24
4 PROBLEM AREAS IN AMTRAK'S CAR REFURBISHMENT PROGRAM	26
Need for competition in awarding con- tracts	26
Need for better planning of refurbish- ment	27
Refurbished cars continue to require frequent repair of mechanical defects	29
Conclusion	30
Recommendations to the President of AMTRAK	30

CHAPTER		<u>Page</u>
5	AGENCY AND CONTRACTOR COMMENTS	31
	AMTRAK	31
	Department of Transportation	32
	Interstate Commerce Commission	33
	Railroad and other contractor comments	33
6	SCOPE OF REVIEW	34
APPENDIX		
I	Letter dated April 11, 1973, from the President, National Railroad Passenger Corporation, to GAO	35
II	Letter dated April 16, 1973, from the As- sistant Secretary for Administration, De- partment of Transportation, to GAO	42
III	Letter dated March 20, 1973, from the Chair- man, Interstate Commerce Commission, to GAO	45

#### ABBREVIATIONS

AMTRAK	National Railroad Passenger Corporation
GAO	General Accounting Office

COMPTROLLER GENERAL'S REPORT TO THE  
SUBCOMMITTEE ON TRANSPORTATION AND  
AERONAUTICS, COMMITTEE ON INTERSTATE  
AND FOREIGN COMMERCE  
HOUSE OF REPRESENTATIVES

AMTRAK NEEDS TO IMPROVE TRAIN  
CONDITIONS THROUGH BETTER REPAIR AND  
MAINTENANCE  
National Railroad Passenger  
Corporation (AMTRAK) B-175155

D I G E S T

WHY THE REVIEW WAS MADE

The Chairman of the Subcommittee asked GAO to review operations of the National Railroad Passenger Corporation (AMTRAK). The Chairman <sup>753</sup> of the full Committee endorsed his request.

GAO focused on aspects of AMTRAK's operations considered critical for efficient passenger railroad service. This report, second in a series, includes results of GAO's inspection of AMTRAK trains and its review of the maintenance, repair, and refurbishment of AMTRAK's locomotives and passenger cars.

Background

AMTRAK was created by the Congress as a private, for profit corporation to operate and revitalize U.S. intercity passenger service starting May 1, 1971. Thirteen railroads provide AMTRAK with the necessary services including equipment maintenance, repair, and refurbishment.

Railroads are reimbursed by AMTRAK for operating costs exceeding revenues. AMTRAK's net railway operating loss as of June 30, 1972, was \$155 million.

FINDINGS AND CONCLUSIONS

Condition of AMTRAK trains

GAO made 340 inspection trips on 56 AMTRAK trains operating on 20 routes

during June and July 1972 to observe condition of the passenger cars. General cleanliness of the cars and/or condition of air-conditioning and other equipment was found unsatisfactory on at least 1 trip on each of 46 trains.

Unclean passenger cars were found on 89 trips, unclean dining cars on 34 trips, and inoperative air-conditioning systems on 101 trips. Most of the unsatisfactory conditions were found on 15 trains. (See pp. 8 and 9.)

AMTRAK lost revenue and incurred additional costs by renting or leasing cars because one-third of its fleet was out of service during much of 1972 for maintenance, repair, or refurbishment. (See p. 14.)

Problems in maintenance and repair activities

Maintenance and repair furnished by the railroads cost AMTRAK \$76 million during the first 14 months of operation. AMTRAK was not able to keep its rolling stock in good operating condition because contractual arrangements with the railroads did not provide an effective maintenance program and AMTRAK did not adequately monitor the railroads' activities.

GAO found that:

--AMTRAK had not carried out the congressional directive to take

direct control over maintenance and repair. (See p. 16.)

--AMTRAK did not have an effective system of surveillance over car maintenance and repairs. (See p. 18.)

--Train crews did not follow procedures for reporting car defects. (See p. 18.)

--AMTRAK had no assurance that cars were maintained and repaired as required. (See p. 19.)

--A shortage of spare parts delayed necessary repair work. (See p. 21.)

--Difficulties were encountered in maintaining locomotives in good operating condition. (See p. 23.)

Problem areas in car refurbishment program

AMTRAK contracted with several railroads and private companies to refurbish its fleet of passenger cars. Problem areas encountered by AMTRAK in carrying out the refurbishment program included:

--Lack of competition in awarding contracts. (See p. 26.)

--Inadequate advance scheduling of work to be accomplished. (See p. 27.)

--Need for repairs shortly after other work was completed because of inadequate scope and quality of work. (See p. 29.)

RECOMMENDATIONS OR SUGGESTIONS

AMTRAK should:

--Take direct responsibility for

maintaining and repairing its passenger cars and locomotives.

--Establish procedures for inspecting car maintenance and repairs and increase the number of employees assigned to inspection of cars and locomotives.

--Enforce train crew's use of car condition trip reports.

--Establish a maintenance record system for passenger cars.

--Expedite establishment of a parts inventory control system for passenger cars.

--Award refurbishment contracts on the basis of open competition.

--Schedule passenger cars in advance for refurbishment.

--Prepare detailed specifications for refurbishment.

--Hold contractors responsible for defective refurbishment.

AGENCY COMMENTS AND UNRESOLVED ISSUES

AMTRAK, the Department of Transportation, and the Interstate Commerce Commission generally agreed with GAO's conclusions and recommendations.

AMTRAK is taking several actions, similar to those GAO recommended. AMTRAK said it had made considerable progress in the past year in eliminating conditions and problems noted by GAO. (See p. 31.)

The Department said GAO's report presents a fair picture of the rundown rolling stock AMTRAK inherited from

the railroads. It concurred that better operational control by AMTRAK should remedy defects detailed by GAO. (See p. 32.)

The Commission confirmed it had observed the same conditions during its inspections as had GAO. (See p. 33.)



## CHAPTER 1

### INTRODUCTION

At the request of the Chairman, Subcommittee on Transportation and Aeronautics, House Committee on Interstate and Foreign Commerce, we reviewed National Railroad Passenger Corporation (AMTRAK) operations. The Chairman of the full Committee endorsed the request. The second in a series, this report deals with the maintenance, repair, and refurbishment of AMTRAK's locomotives and passenger cars.

### ESTABLISHMENT OF AMTRAK

AMTRAK was established by the Rail Passenger Service Act of 1970 (45 U.S.C. 501) as a for profit corporation to operate and revitalize U.S. intercity passenger service. The act states that the corporation will not be an agency or establishment of the U.S. Government. The act requires that AMTRAK employ innovative operating and marketing concepts to fully develop the potential of modern rail service in meeting the Nation's intercity passenger transportation requirements.

AMTRAK began service on May 1, 1971, on 21 domestic routes which comprised its basic system. After May 1, 1971, five additional domestic routes, including two experimental ones, and three routes between the United States and Canada and between the United States and Mexico were added. In addition, the frequency of service was increased on some routes. During the initial 14 months of operation, AMTRAK lost \$155 million on railway operations.

### OPERATING CONTRACTS WITH RAILROADS

Thirteen railroads have contracts with AMTRAK for operating passenger trains and, under these contracts, they provide all services, including equipment maintenance and repair, requested by AMTRAK. During the 14 months ended June 30, 1972, the railroads charged about \$76 million for maintaining and repairing equipment and about \$2.3 million for refurbishing passenger cars. These costs represented about 22 percent of AMTRAK's total costs for that period.

ROLLING STOCK OWNED OR LEASED BY AMTRAK

At December 1972 AMTRAK was using about 2,100 locomotives and passenger cars.<sup>1</sup> Of these, 1,687 were purchased for about \$25.9 million and the others were either leased or rented from the railroads.

	<u>Purchased</u>		<u>Leased or rented</u>
	<u>Number</u>	<u>Cost</u>	
Locomotives	262	\$ 7,500,000	97
Cars	<u>1,425</u>	<u>18,400,000</u>	<u>313</u>
	<u>1,687</u>	<u>\$25,900,000</u>	<u>410</u>

The 262 locomotives AMTRAK owned cost about \$29,000 a unit and consist of 232 diesel-powered units and 30 electric-powered units. As of April 1973, AMTRAK had on order 40 new high-powered diesel units for \$422,000 each and 15 new electric units for \$701,400 each to replace 74 lower powered diesel locomotives and 15 rented electric locomotives. AMTRAK also plans to order 60 additional diesel units as funds permit.

The 1,425 passenger cars AMTRAK owned cost about \$12,900 a car and consist primarily of coach, sleeper, lounge, dome, diner, and baggage cars. AMTRAK estimated that about 300 cars should be replaced, and its fiscal year 1974 budget includes \$15 million for 50 new cars.

Age and condition of equipment

Before AMTRAK was established, many railroads had reduced service and stored excess passenger cars. New equipment had not been purchased for several years and, because of declining revenues, normal maintenance and overhaul were deferred. As a result, most of the locomotives and passenger cars AMTRAK purchased were old and many needed major repair or overhaul.

The 232 diesel locomotives ranged in age from 9 to 33 years and averaged 19 years. None of the 30 electric locomotives were less than 29 years old. AMTRAK estimated that

---

<sup>1</sup>Does not include 2 gas turbine trainsets and 61 metroliner cars leased by AMTRAK.

the cost of deferred maintenance work for the locomotives would be about \$5.9 million. About one-half (132) of the locomotives required major overhaul at the time of purchase. AMTRAK estimated that the overhaul cost could range from \$50,000 for a diesel unit to \$350,000 for an electric unit.

Most of the passenger cars AMTRAK purchased also were old and rundown. The 1,185 cars purchased in the first year of operations ranged in age from 7 to 34 years and averaged over 20 years. AMTRAK thought 20 percent of these cars needed immediate overhaul and 33 percent to be serviceable for less than 2 years. AMTRAK estimated that it would cost at least \$5.5 million to keep the equipment operable through fiscal year 1972.

## CHAPTER 2

### CONDITION OF AMTRAK TRAINS

Before AMTRAK was established, passengers and independent observers complained that passenger trains were old, dirty, and rundown. Comments by AMTRAK passengers, observations by members of the National Association of Railroad Passengers, and an independent study by a faculty member of the University of Idaho indicate that AMTRAK has improved the general appearance and cleanliness of passenger trains. Continued passenger complaints and conditions we observed showed, however, that much improvement is still needed.

Also, AMTRAK has been unable to maintain a large part of its fleet in service primarily because cars (1) were removed for refurbishment, (2) needed repairs, and were not properly or promptly repaired. During the first 9 months of calendar year 1972, about a third of AMTRAK's cars were out of service each day because they needed maintenance, repair, or refurbishment. A car shortage resulted, particularly during the summer months and AMTRAK lost revenue because it was unable to meet requests for train accommodations and because it incurred additional costs by renting or leasing cars from the railroads.

### GAO INSPECTION TRIPS

During June and July 1972, we made 340 trips on 56 AMTRAK trains operating on 20 routes to observe the condition of cars. We rode most trains six or more times and, in all, we observed conditions on about 900 cars.

We judged the cleanliness and condition of cars unsatisfactory if we found one or more of the following conditions.

- Air-conditioning system was not working properly.
- Restroom fixtures were not working properly, hot water was lacking, or supplies were inadequate.
- Seats were torn, worn, or unstationary.

- Windows were cracked, broken, or fogged.
- Floor covering was torn, worn, or damaged.
- Doors were difficult to open or close.
- Car interior was dirty.

We obtained passenger comments on train conditions and/or cleanliness on about 200 of our 340 inspection trips. The comments on cleanliness that we obtained from about 1,700 passengers generally corresponded to our observations.

Unsatisfactory condition of individual trains

We found unsatisfactory conditions in passenger cars on at least 1 of several trips on 46 of the 56 trains inspected. We considered train conditions unsatisfactory if the overall condition of cars was unsatisfactory. Thus, the train could have one or more unsatisfactory cars but the overall condition of the train could be rated satisfactory because the individual car deficiencies were minor or because most of the cars had no deficiencies.

Passenger cars were unclean on 89 trips, diner cars were unclean on 34 trips. Malfunctioning air-conditioning systems on 101 trips were the greatest source of irritation to AMTRAK passengers that we interviewed.

Most of the unsatisfactory conditions were observed on the following 15 trains.

<u>Train number</u>	<u>Route</u>
1	New Orleans-Los Angeles
5	Chicago-Oakland
6	Oakland-Chicago
11-12	Seattle-San Diego
13-14	San Diego-Seattle
30	Kansas City-New York
31	New York-Kansas City
50	Chicago-Washington
51	Washington-Chicago
52	Chicago-Miami
53	Miami-Chicago
73	New York-Buffalo
179	Boston-Washington
182	New York-Boston
302-323	St. Louis-Milwaukee

Observations on certain of these trains and other trains included in our inspections follow.

Kansas City-New York (trains 30 and 31)

Trains 30 and 31 had the highest incidence of unsatisfactory conditions. Over 90 percent of the passengers interviewed criticized train conditions. In addition, the on-time performance of these trains during the summer months was among the lowest of the AMTRAK trains we rode.

AMTRAK was aware of conditions on these two trains. In August 1972 the Vice President of Operations of AMTRAK wrote the operating railroad:

"There has been so much criticism surrounding the operation of trains 30 and 31 that I must appeal to you to get these trains on time and on schedule \* \* \*.

\* \* \* \* \*

"The equipment is just terrible. In addition to mechanical failures, the cars are not properly serviced and cleaned, the kitchen in the diners are filthy and we have been sighted [sic] several times by the Department of Health, Education, and Welfare for these unsanitary conditions."

Los Angeles-New Orleans (trains 1 and 2)

We took six trips on each of these trains and, although we found unsatisfactory conditions on both trains, those noted on train 1 were somewhat worse than those on train 2.

Generally, the cars were very old and the air-conditioning, electrical, and plumbing systems were frequently malfunctioning. Train conductors and engineers stated that system breakdowns were the rule, not the exception.

The air-conditioning system did not work properly half the time and, because the route goes through the southwest desert areas, it caused the most passenger discomfort and

frustration. Because of a locomotive malfunction during a trip on train 1, the air-conditioning system was inoperative on all cars except one coach car. To get relief from the heat, passengers moved from car to car to find cooler areas. When the train arrived in Tucson confusion resulted regarding seat assignments and boarding passengers could not obtain their reserved seats. A number of passengers refused to stay on the train.

The railroad did not keep the trains clean and several times we observed roaches.

Some first-class passengers strongly disapproved of AMTRAK's policy of allowing pets in roomettes and bedrooms because they caused offensive odors and unsanitary conditions, and passengers noted that such items as blankets, pillows, and magazines were not furnished regularly at no charge.

Oakland-Chicago (trains 5 and 6)

We noted inoperative air-conditioning, broken seats, broken beds, wet carpets, cracked windows, clogged toilets, and leaks in sinks and in the ceilings of several diner cars. Most passengers we interviewed seemed willing to tolerate these conditions, except for the breakdowns of the air-conditioning system. These breakdowns occurred to some extent on 15 of our 16 trips. Quite often the air-conditioning system remained inoperative for most of the trip despite stops at major stations.

Chicago-Seattle (trains 7 and 8) and Seattle-San Diego (trains 11-12 and 13-14)

The air-conditioning systems in coach, sleeper, and lounge cars failed intermittently. Repeated failures occurred on the refurbished AMTRAK coach cars which had steam injection air-conditioning systems. On one of the trips between San Diego and Seattle, the air-conditioning system in five coach cars and a lounge car became inoperative in Southern California and remained out of order for the rest of the trip to Seattle, a distance of about 1,300 miles. Emergency repairs at various stations in California were unsuccessful.

Although restrooms in coach cars were clean at the start of the train trips, they usually were dirty by the end of the trip. On trips from Chicago to Seattle many passengers complained about dirty windows because this route is one of the more scenic routes in the AMTRAK system.

Coach passengers, particularly elderly women and mothers with small children, criticized passengers smoking in cars which had no smoking signs. Some said that the ticket agent had categorically stated that smoking was prohibited in all AMTRAK coach cars but that their complaints to the conductor, brakeman, or car attendant were to no avail.

Boston-Washington (trains 172, 173, 174, 175 and 179)  
and New York-Boston (trains 150 and 151)

Trains 172, 173, 174, 175, and 179 are conventional trains. Trains 150 and 151 are gas turbine trains. We rode trains 172 and 173 once and the other trains at least seven times.

Generally, we found trains 172, 173, and 175 in satisfactory condition except for the cleanliness of restrooms on train 172. On three of our seven trips on train 179 we found that the railroad did not maintain a satisfactory level of cleanliness in passenger cars, diner cars, and restrooms.

We inspected the diner car kitchen on train 179 on seven trips and found unsatisfactory conditions twice. On one of our trips we found that:

- The dishwasher was inoperative.
- There was no dishwashing solution.
- Food preparation counters were not adequately cleaned before meals were prepared.
- Dry food storage cabinets were dirty and were used to store soiled uniforms.
- Lettuce was kept in a dirty pot, and a ham was stored, unwrapped, on the metal counter with the cut end directly in contact with counter.

Air-conditioning systems were out of order on five of seven trips we made on train 174, on five of seven trips on train 179, and on three of eight trips on train 150. Lack of air-conditioning along with the train failure to be on time, elicited the strongest passenger complaints. All the trains had an insufficient number of conveniently located receptacles for trash, and attendants allowed trash to gather during the trip.

#### St. Louis-Milwaukee (train 302/323)

On our 10 inspection trips on this train, we noted torn, worn, and broken seats; broken doors and windows; lack of hot water in rest rooms; and intermittent failures of air-conditioning systems in coach and parlor cars.

On one trip the air-conditioning system in a parlor car was inoperative due to a motor failure. Many passengers complained about the resulting hot and stuffy car. The same condition was noted on the parlor car during another inspection 4 days later. The conductor stated that he had reported the defect, but no action had been taken to replace or repair the car.

On another trip we noted a pantry door on a diner that swung open freely, causing a safety hazard to passengers. We noted the same condition on four subsequent trips over a period of 11 days before the door was repaired.

#### Condition of refurbished cars

One of the primary goals of AMTRAK's refurbishment program is to make train travel esthetically appealing and comfortable by upgrading the appearance and condition of its passenger cars. During our inspection trips, 33 out of 51 refurbished cars were operating with systems, such as air-conditioning, in unsatisfactory condition. Car refurbishments did not include replacing air-conditioning systems.

The passengers interviewed commented very favorably about the appearance of the refurbished cars. Many passengers, however, were puzzled over the incongruity between the attractive appearance of the refurbished cars and the failure of basic equipment such as air-conditioning.

## OUT-OF-SERVICE PASSENGER CARS

From January to September 1972, a daily average of 470 passenger cars, or about one-third of AMTRAK's cars, were out of service for maintenance, repair, or refurbishment. AMTRAK reported that the out-of-service rate should decrease to about 23 percent in the summer of 1973, compared to a goal of 20 percent when the car refurbishment program is completed. The shortage of serviceable cars was particularly critical between June 12 and September 4, 1972 (Labor Day), the peak period of train travel. Many people seeking reservations were on waiting lists for most cross-country trains because of this shortage.

For example, at its Chicago and Los Angeles reservation offices, AMTRAK was unable to provide cars needed during 3 weeks in June to meet 6,265 and 1,344 requests, respectively, for accommodations on various trains. The potential revenue from these unfilled requests was about \$296,000.

Nonavailability of its own cars also increased AMTRAK's operating costs. AMTRAK rented additional cars from the railroads to meet its requirements and in April 1972 it began to lease cars from them. According to AMTRAK's Vice President of Operations, this action was taken because of the large number of out-of-service cars and the anticipated increase in train travel in the upcoming months. By the end of June 1972, about 440 cars had been leased or rented at an estimated monthly cost of about \$200,000.

Most cars were out of service because of their age and condition when acquired by AMTRAK. (See p. 7.) Other factors were:

- Lack of spare parts to make prompt repairs.
- Repaired cars needing to be taken out of service for further repairs within a short period of time. For example, during a 6-1/2 month period in 1972, 329 cars were out of service on 5 to 18 occasions. This situation was partly attributable to inadequate AMTRAK surveillance of railroad maintenance and repair activities.

--Poor quality workmanship or failure to make certain repairs during car refurbishment, which caused cars to be taken from service for repair.

### CONCLUSION

The conditions we observed and passenger comments indicate that much improvement is needed in the maintenance, repair, and refurbishment of AMTRAK locomotives and cars to place them in first-class operating condition. These conditions not only adversely affected passenger relations but also caused AMTRAK to lose revenue and incur additional costs by renting or leasing cars from railroads.

### CHAPTER 3

#### CONTROL AND SURVEILLANCE OVER

#### MAINTENANCE AND REPAIR ACTIVITIES

The railroads maintained and repaired AMTRAK's fleet under cost-reimbursement-type contracts. These activities cost AMTRAK \$76 million during its first 14 months of operation. AMTRAK was not able to keep its rolling stock in good operating condition because the contractual arrangements with the railroads did not provide for an effective maintenance program and because AMTRAK did not adequately monitor the railroads' work.

Our review showed that:

- AMTRAK had not implemented the congressional directive to take direct control over maintenance and repair.
- AMTRAK did not have an effective system of surveillance over car maintenance and repair.
- Train crews did not follow procedures for reporting car defects.
- AMTRAK had no assurance that cars were maintained and repaired as required.
- A shortage of spare parts delayed necessary repair work.
- Difficulties were encountered in maintaining locomotives.

#### CONGRESSIONAL DIRECTION THAT AMTRAK ASSUME DIRECT OPERATING CONTROL

Public Law 92-316, approved June 22, 1972, amended the Rail Passenger Service Act of 1970 to provide that, insofar as practical, AMTRAK directly operate and control all aspects of its rail passenger service. Senate Report 92-756, dated April 21, 1972, in recommending adoption of the amendment, stated:

"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. With one exception (Chicago Union Station) it is not even collecting its own receipts in its own cash drawers. 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.

"The contracts themselves provide no incentive for the railroads to control operating costs of AMTRAK trains. AMTRAK must pay the railroads for whatever the identifiable expense may be, less revenues, plus specific percentage overrides for undefined avoidable costs and for liability. Accordingly, the railroads actually have an incentive to increase the actual costs which can be billed to AMTRAK.

"The committee believes that at this time it would not be useful to legislate a date certain by which AMTRAK should assume direct operational control in view of the varying degrees of complexity associated with AMTRAK takeover of different categories of employees. But, it expects that henceforth AMTRAK will move expeditiously to assume insofar as practicable direct operation and control of all aspects of its rail passenger services."

In hearings held in October 1971 by the Subcommittee on Surface Transportation, Senate Committee on Commerce, AMTRAK stated that it was studying the feasibility of taking over railroad maintenance personnel and shops during fiscal year 1973. In December 1972 AMTRAK had not taken over any part of the maintenance and repair.

NEED FOR MORE EFFECTIVE SURVEILLANCE  
OVER CAR MAINTENANCE AND REPAIR

AMTRAK needs to provide more effective surveillance over railroads' maintenance and repair. As of July 1972, AMTRAK had assigned only 5 mechanical inspectors to monitor 10 railroads' maintenance and repair of AMTRAK passenger cars at 32 maintenance yards and terminals across the country and AMTRAK had not established any inspection procedures.

Even under the most favorable circumstances, these five inspectors could provide only minimal surveillance. For example, the inspector in Los Angeles was responsible for monitoring at New Orleans, Forth Worth, Los Angeles, Oakland, San Francisco, and Seattle. Moreover, the inspectors were involved in matters other than surveillance. For example, one inspector spent a considerable part of his time assisting railroads to find replacement parts for cars being repaired.

In the absence of prescribed procedures, the inspectors primarily inspected selected trains before their scheduled departure for cleanliness of cars and condition of equipment. The inspectors did not record their observations, but told railroad maintenance personnel of any deficiencies. It appeared that the inspectors did not follow up to see that these deficiencies were corrected.

As of July 1972 AMTRAK employed not only mechanical inspectors but also seven service inspectors to ride trains and report equipment deficiencies. The service inspectors forwarded their reports to mechanical inspectors for followup. However, mechanical inspectors did not receive these reports promptly or, upon receipt, did not take much followup action.

We believe that AMTRAK should build up its surveillance capability and should establish procedures to be followed by the inspection staff.

AMTRAK PROCEDURES FOR REPORTING  
CAR DEFECTS NOT FOLLOWED

AMTRAK requires train crews to list equipment defects observed on AMTRAK trains on car condition trip reports (form 1000s). AMTRAK procedures governing use of these reports stated:

--On leaving each initial terminal, each car will have an updated AMTRAK form 1000 in the receptacle in the switch locker door. This form will show any uncorrected defects from previous trips and will be placed in the car by a maintenance supervisor.

--Each conductor, porter, or attendant will list on the form any new defect not already reported and will sign the form.

AMTRAK intended for the form to be used to facilitate prompt maintenance and followup at the servicing points and to help reduce passenger criticism. But train crews did not record equipment defects on the forms. For example, we observed 723 defects in trains arriving and departing at maintenance yards in Chicago, Los Angeles, and New York during June and July 1972 but the train crews reported only 74 defects on these same trains.

Observable defects which we noted but were not reported by the train crews included major malfunctions of air-conditioning and electrical systems, broken windows, torn seats, and lack of hot water. Railroad maintenance officials said that properly prepared trip reports should result in maintenance personnel's spending less time in identifying car equipment needing repair.

We also noted instances in which reports showed needed repairs but the repairs were not made promptly. For example, a train crew reported that the air-conditioning and electrical systems on one car were malfunctioning but the car remained in service for over a week before it was removed for the needed repairs.

Train crews need to comply strictly with the requirements for reporting car defects.

#### NEED FOR ESTABLISHING CAR MAINTENANCE RECORD SYSTEM

Before AMTRAK was established, maintenance generally varied according to the policies and practices of the individual railroads owning the cars. To achieve a nationally high quality and uniform level of operations, AMTRAK established certain standards which all railroads were to follow in maintaining AMTRAK passenger cars. However, it did not require the railroads to document their maintenance and, at the

facilities we visited, the railroads generally did not document their maintenance.

AMTRAK defined the work and the frequency of work needed to eliminate deterioration of interiors and mechanical and electrical systems. AMTRAK divided the passenger car inspection, maintenance, and repair work into two categories:

- Turnaround work, representing routine maintenance on a car at every location where it terminates its normally assigned run.
- Layover work, representing the periodic inspection, maintenance, and repair normally performed only at assigned facilities.

Our review at seven facilities in three locations showed that one railroad kept no record of maintenance on AMTRAK passenger cars while three railroads documented maintenance using record systems which had been designed to meet their own requirements. Two of these railroads documented only maintenance on electrical and air-conditioning systems, and their records were not always current. The other railroad recorded periodic maintenance but did not show whether the work met AMTRAK's standards.

If the railroads do not keep adequate records of maintenance, AMTRAK has little or no assurance that its cars are being maintained in accordance with the prescribed standards.

AMTRAK officials told us that in September 1972 they discussed with a consulting engineering firm the development of a maintenance record system that would be adaptable to computer application and would provide (1) each car with a log showing the dates at which major items were overhauled or installed new, (2) crews with a schedule of work for each car, and (3) information on scheduled work not performed.

As of November 1972, about 19 months after AMTRAK had begun operations and 1 year after it had established maintenance standards, institution of a maintenance record system was still in the discussion stage. Without such a system, AMTRAK's capability to oversee maintenance and repair operations is significantly reduced.

## SHORTAGE OF SPARE PARTS

Many cars removed from service for repair were kept out of service for extended periods because of the lack of spare parts. So-called "foreign" cars, cars not previously owned by the railroad making the repairs and having many parts not interchangeable with those generally handled by the railroad, were affected more than others.

The foreign car problem was created when AMTRAK purchased cars from 11 different railroads and then assigned the cars to 5 railroads for maintenance and repair. The table below, based on a February 1972 AMTRAK car assignment schedule, shows the number and percent of foreign AMTRAK-owned cars assigned to maintenance facilities at the five railroads.

	<u>Number of cars</u>		<u>Percentage of foreign cars</u>
	<u>Total</u>	<u>Foreign</u>	
Railroad A			
Chicago	85	47	55
Seattle	73	13	18
Railroad B			
Chicago	55	55	100
Railroad C			
Buffalo	26	24	92
Chicago	132	125	95
Sunnyside, New York	58	17	29
Washington, D.C.	91	91	100
Railroad D			
Chicago	131	11	8
Los Angeles	88	12	14
Railroad E			
Jacksonville	31	12	39
Miami	189	113	60
St. Petersburg	64	42	66

When AMTRAK assigned its cars to the five railroads for maintenance it did not provide spare parts to accompany the foreign cars. As a result, some maintenance yards have had to (1) obtain parts from other railroads and other car maintenance facilities, (2) seek replacements for obsolete

parts from original or substitute manufacturers, or (3) subcontract for repairing defective parts. In some instances yards removed parts from other cars which were out of service and which were judged to be in lesser demand.

Specifically, we found that cars were out of service for extended periods of time because replacement parts for items such as wheels, batteries, generators, compressors, condensor motors, and electrical panels were not available at the maintenance facility.

For example, a coach car was removed from service on April 8, 1972, because four wheelsets were defective. While the car was out of service, two good sets of wheels were removed from it to replace defective wheels on another car out of service for repair. The four defective wheel sets were later sent to a wheel shop for repair. On September 13, 1972, after 158 days, repaired wheels were installed and the car was released to service.

In another case a diner car was removed from service on June 6, 1972, for a defective generator. While out of service, the following events took place:

- June 9, the generator was removed for repair.
- June 25, the repaired generator was installed.
- June 26, the generator became defective before the car was returned to service.
- July 1, the generator was again removed for repair.
- August 1, an electrical component was removed for use on another car.
- August 12, a kitchen fan was removed for repair.
- August 27, a replacement electrical component was installed.
- September 12, a range fan was removed for repair.
- September 27, the repaired generator was installed.

On October 2, 1972, after 118 days, the car was put back in service without the kitchen and range fans.

Because most of the cars constituting AMTRAK's fleet are in generally poor condition and will need frequent replacement and repair of parts, we inquired what action AMTRAK had taken to correct the piecemeal approach to the parts problem.

AMTRAK officials stated that they planned to eventually establish a parts inventory control system which would include a centralized purchasing staff and stock distribution centers. Pending establishment of this system, AMTRAK has placed blanket purchase orders with several suppliers to provide batteries for AMTRAK cars and has planned to institute similar procedures for generators and electrical panels.

Although the interim actions taken or planned by AMTRAK should help reduce the out-of-service time caused by shortages of electrical equipment, shortages of other critical parts will continue to exist until AMTRAK institutes an adequate parts inventory control system.

#### DIFFICULTIES IN MAINTAINING LOCOMOTIVES IN GOOD OPERATING CONDITION

AMTRAK has not effectively controlled the maintenance and repair of its locomotives and, in our opinion, has no assurance that the railroads are maintaining them well enough to minimize recurring failures and repair costs. Most of the locomotives used by AMTRAK are old and in poor operating condition.

AMTRAK's locomotives are maintained and repaired under contract by 7 railroads at 11 locations throughout the United States. The railroads charged AMTRAK about \$26 million for this work for the 14 months ended June 30, 1972.

At the time of our review, AMTRAK did not have data on the day-to-day availability of its locomotives but estimated that at any one time up to 25 percent were unavailable for service. Since our review, AMTRAK has established a daily reporting system on the condition of locomotives. During the 9 months ended September 30, 1972, AMTRAK's equipment failure reports showed that locomotives failed en route about 2,500 times. The reported causes included short circuits in locomotive traction motor systems, oil and water leaks, and mechanical problems such as blown gaskets, broken pistons,

and burned bearings. Several locomotives repeatedly experienced the same type failure within a short period. Problems related to the electrical system of the locomotive traction motor were the major source of recurrent failures.

At the time of our review, AMTRAK had only three employees in the field to inspect and monitor the locomotive maintenance and repair activities of the seven railroads. These employees--called district coordinators of locomotive maintenance--were assigned in March 1972 to the Miami district, in July 1972 to the Chicago district, and in September 1972 to the Los Angeles district. They (1) provided quality control inspections of work, (2) investigated locomotive and train malfunctions and instituted remedies, and (3) supervised shops and facilities servicing AMTRAK locomotives.

AMTRAK is gradually upgrading its locomotive fleet. (See p. 6.) AMTRAK estimated that purchase of the 40 new diesel locomotives and release of the old ones would save about \$3 million a year, net of depreciation on the new locomotives. Fifteen new electric locomotives are to replace 15 units now in use, and AMTRAK estimated this action would save an estimated \$1.2 million annually in maintenance costs. It also overhauled 30 units, rebuilt 4 units, and plans to rebuild an additional 46 units.

Although AMTRAK's locomotive replacement and overhaul program should improve locomotive performance, we believe AMTRAK should substantially strengthen its control over maintenance and repair activities to keep the many older units that are being retained serviceable and to keep the new units in proper operating condition.

Ultimately, in accordance with the congressional directive, AMTRAK should take direct responsibility for locomotive maintenance and repair. In the interim AMTRAK needs to increase its inspection force to strengthen its control over maintenance and repair.

#### RECOMMENDATIONS TO THE PRESIDENT OF AMTRAK

AMTRAK should:

- Take direct responsibility for maintaining and repairing its passenger cars and locomotives.

- Establish procedures for inspecting car maintenance and repairs and increase the number of employees assigned to the inspection of cars and locomotives.
- Enforce train crews' use of car condition trip reports.
- Establish a maintenance record system for passenger cars.
- Expedite the establishment of a parts inventory control system for passenger cars.

## CHAPTER 4

### PROBLEM AREAS IN AMTRAK'S

#### CAR REFURBISHMENT PROGRAM

AMTRAK has undertaken a major refurbishment program to upgrade the condition and appearance of its passenger cars. Most of the passenger cars AMTRAK purchased were old, and car interiors and mechanical and electrical systems had deteriorated substantially. By December 31, 1973, AMTRAK plans to refurbish and repair about 1,300 cars which it estimates will cost about \$55 million. By September 1972 465 cars had been refurbished in varying degrees.

AMTRAK encountered several problems in carrying out its refurbishment program: (1) lack of competition in awarding contracts, (2) inadequate advance scheduling of work, and (3) need for new repairs shortly after work was completed because of inadequate scope and quality of work.

#### NEED FOR COMPETITION IN AWARDING CONTRACTS

AMTRAK initially attempted to get competitive bids from 3 private companies for a fixed-price-type contract for car refurbishment for one group of 50 cars. It received a responsive bid from only one of these companies and it awarded the company a contract. AMTRAK also requested proposals for refurbishment from a number of railroad and private shops without seeking competition. This led to the award of negotiated contracts of several types--cost plus a fixed fee based on estimated costs, cost reimbursement, and time and materials.

These contracts provided little incentive for efficient and economical performance. Although AMTRAK stated that the award of contracts with a fee based on estimated costs was intended to encourage contractors to be efficient and economical in refurbishing cars, the work was taking longer and costing more than estimated.

To obtain refurbishment on a cost-effective basis, AMTRAK should seek to obtain, to the extent feasible, maximum competition from prospective contractors, regardless of whether fixed price or cost incentive contracts are awarded.

## NEED FOR BETTER PLANNING OF REFURBISHMENT

AMTRAK generally did not prepare detailed specifications to show what refurbishment was to be done and contractors did not specifically identify and document their work.

AMTRAK classifies major refurbishment into these categories.

1. Facelift--exterior styling, minimum interior refurbishment, and minimum mechanical repair.
2. Interior--exterior styling, complete interior refurbishment, and minimum mechanical repair.
3. Heavy--exterior styling, complete interior refurbishment, and complete mechanical repair.

We reviewed the status of work by three contractors which were scheduled to refurbish 600 cars. Work on 150 cars had been completed by September 15, 1972, as shown below.

	<u>Category of refurbishment</u>		
	<u>Facelift</u>	<u>Interior</u>	<u>Heavy</u>
Number of cars completed	55	17	78
Average days in shop per car:			
Estimated	43	67	82
Actual	58	72	111
Increase of actual over estimated	15	5	29
Average cost per car:			
Estimated	\$28,450	\$32,380	\$44,680
Actual	\$30,270	\$33,690	\$49,820
Increase of actual over estimated	\$1,820	\$1,310	\$5,140

Contractor officials and AMTRAK mechanical inspectors at the three shops informed us of a number of factors contributing to the delays and higher costs. One factor was a shortage of replacement parts. As a result, parts had to be specifically manufactured or substitute parts had to be obtained.

According to AMTRAK officials advance scheduling of cars to be refurbished was not possible because of the continued high rate of cars out of service for repair and the need for some of the better cars to remain in service to meet customer demand. As a result, two of the shops were not informed in advance of the cars to be refurbished or of the condition of the cars. Parts requirements could not be determined until the cars arrived and the contractor determined refurbishment needs. Some of these cars were among the worst in AMTRAK's fleet, and in some cases it became apparent after work had begun that the full extent of needed work was more than had been anticipated.

At one shop, work was begun on three cars before AMTRAK realized that additional structural repairs costing about \$4,500 were needed on each car. At another shop, \$16,000 had been invested in preparing a car for refurbishment before AMTRAK determined that the car was beyond economical repair. Each of the three contractors also experienced delays and additional costs because drawings and wiring diagrams were not forwarded with the cars.

Another factor adversely affecting refurbishment was the contractors' lack of experience. About 50 percent of the force doing AMTRAK work at one of the shops had been transferred from maintenance yards where repairs were normally less extensive. At another shop, about 180 employees previously assigned to freight car repair were transferred to do refurbishment.

As an illustration of the results of inexperienced help, employees often removed electrical equipment without properly identifying the wires, and additional time was required to make a proper electrical hookup when reinstalling the equipment.

The AMTRAK inspectors at each shop often required rework because of the poor quality of workmanship. For example, condensers were removed and reinstalled on some cars without being cleaned adequately and, as a result, a second round of removals and installations was required.

REFURBISHED CARS CONTINUE TO REQUIRE  
FREQUENT REPAIR OF MECHANICAL DEFECTS

Many of the newly refurbished cars needed repair shortly after being returned to service. Of the 150 cars refurbished between March 8 and September 8, 1972, by the three shops we visited, 92 were reported to have been out of service for repair at least once by September 30, 1972. About 40 percent of these 92 cars required repairs within 6 weeks after leaving the repair shop, and over 50 percent of the cars were ordered out of service more than once.

Equipment requiring further repairs included airbrakes, batteries, generators, and wheels and bearings. Most of these repairs were routinely performed by maintenance forces at additional cost to AMTRAK. For example, 18 cars that had undergone heavy refurbishment later were found unfit for service due to defects in wheels and bearings.

Many of the defects on refurbished cars reported by AMTRAK personnel pertained to the quality of interior work--the work most visible to the public. The defects included:

- Bubbles and bulges in the covering used on some wall areas, caused by poor butting fitting.
- Difficulty in opening doors on many cars, caused by faulty application of hardware.
- Great amount of threading and fraying of carpeting, especially apparent on the outside edges, indicating a poor cutting tool or a poor application.
- Car interiors in need of heavy cleaning after refurbishment was completed.
- Poor quality of painting--some items painted by mistake and other areas unpainted, such as the wall behind bunks in sleeper cars.
- Broken freon lines on diner refrigerator units.

AMTRAK had not established a system for relating refurbished car defects to the work required under the refurbishment contracts. Under existing practices, it would be

difficult to place responsibility for correcting defective items on the shop that did the refurbishment work because detailed work specifications were not prepared and because the shop or the AMTRAK mechanical inspector did not keep detailed records of work. Many of the specifications provided only that the cars be inspected, tested, and repaired as necessary. Officials at two shops we visited stated that more specific work requirements would provide the shops with a better understanding of the work needed and a better basis to make time and cost estimates.

#### CONCLUSION

AMTRAK needs to strengthen its procedures to substantially improve the refurbishment program which is an essential part of AMTRAK's efforts to attract passengers and revitalize rail passenger service. Such improvements are needed to reduce the out-of-service time of passenger cars and improve the quality of car refurbishments.

#### RECOMMENDATIONS TO THE PRESIDENT OF AMTRAK

AMTRAK should:

- Award refurbishment contracts on the basis of open competition.
- Schedule passenger cars in advance for refurbishment.
- Prepare detailed specifications for refurbishment.
- Hold contractors responsible for defective refurbishment.

## CHAPTER 5

### AGENCY AND CONTRACTOR COMMENTS

We obtained comments from AMTRAK, the Department of Transportation, and the Interstate Commerce Commission on the matters discussed in this report. Their comments are included in appendixes I, II, and III.

#### AMTRAK

AMTRAK stated that it generally agreed with our recommendations and offered the following comments.

- Since January 1973 it has assumed operating responsibility for the Turbo maintenance facility in Providence, Rhode Island, and in April 1973 it was constructing a similar facility in Chicago to service Turbo Trains which will operate in that area. It also is negotiating to take over five other car and/or locomotive repair and servicing facilities.
- It is establishing procedures for inspecting car maintenance and repairs, and, since the summer of 1972, the staff monitoring maintenance and repair has increased from 13 to 23 (including 10 car mechanical inspectors and 6 locomotive inspectors) and 20 more are to be employed.
- The car condition trip report system is being revised and enforcement of use of the report should improve as AMTRAK takes over the on-board service personnel and its field inspection and supervision staff is strengthened.
- A car maintenance record system is being installed to cover all car systems affecting passenger comfort and convenience as well as mechanical elements. It also is considering a consulting firm's recommendations for a detailed maintenance system to supplement the on-board system.
- It is beginning to assign cars to specific maintenance facilities, which allows for better allocation and concentration of spare parts, and is developing spare

parts inventory requirements for these facilities. An AMTRAK official told us that plans for AMTRAK to assume responsibility for purchasing spare parts and to establish stock distribution centers are being deferred until AMTRAK has acquired a fleet of new cars.

--AMTRAK now schedules cars in advance for refurbishment, uses detailed work specifications, and holds contractors responsible for defective work. It agreed that competitively awarded contracts were a desirable goal but pointed out that it was bound by statutory requirements to use railroad employees whenever possible and that railroads were reluctant to participate in a program which could result in sharp variations in the number and value of contracts received. For these reasons, it was difficult to move toward a competitive bid system on a cost-effective basis.

In commenting on its contractual relationship with the railroads in providing passenger service, AMTRAK acknowledged that the contracts give the railroads responsibility for and control of AMTRAK's maintenance and servicing but give no performance incentive, which is deleterious to equipment maintenance. The railroads' standards for work affecting the appearance of the equipment is not acceptable to AMTRAK and the public. To overcome these difficulties, AMTRAK seeks to take increasing control over service and maintenance.

AMTRAK said it has made considerable progress in the past year in eliminating the conditions and problems noted in the report and that, as corrective actions become fully effective, it can expect further and continued improvement in the condition and operation of its trains.

#### DEPARTMENT OF TRANSPORTATION

The Department stated that our report presents a fair picture of the rundown rolling stock AMTRAK inherited from the railroads. The Department furnished the comments of its Federal Railroad Administration which concurred that greater operational control by AMTRAK should remedy the defects detailed in our report.

## INTERSTATE COMMERCE COMMISSION

The Commission generally agreed that the conditions we reported corresponded to those it had observed during its inspections of rail passenger service and it also agreed with our recommendations. The Commission suggested, however, that the recommendation for AMTRAK to take direct responsibility for maintenance and repair should include consideration of the cost of, and the benefits to be derived from, implementing such a recommendation.

We believe that AMTRAK needs to strengthen its control over the repair and maintenance services of the railroads and that ultimately AMTRAK, in accordance with the congressional directive, should take direct operation and control of these services where such actions are cost effective.

## RAILROAD AND OTHER CONTRACTOR COMMENTS

We obtained comments from 11 railroads and 1 car manufacturer regarding our observations of the conditions of trains they operated and the maintenance, repair, and refurbishment they provided.

The railroads generally agreed with our observations of train conditions in June and July 1972 but stated that AMTRAK's maintenance program and the condition of its fleet had recently improved considerably. Two companies commented on the need to improve the car condition reporting system. One company stated that the initial criticism of refurbishment work could be partially attributed to the inferior quality of material rather than poor workmanship. It said that AMTRAK did much experimenting with types of seat covers, carpet, and wall materials. Another company said that the need to repair some recently refurbished cars was partially attributable to cars receiving, at AMTRAK direction, only minor repairs and painting.

## CHAPTER 6

### SCOPE OF REVIEW

We made 340 inspection trips on 56 AMTRAK trains in June and July 1972 to determine the cleanliness of passenger cars and the condition of on-board systems, such as air-conditioning, restrooms, and diner facilities.

We obtained operating statistics and information on AMTRAK policies and procedures from AMTRAK's headquarters in Washington, D.C., and held discussions with AMTRAK officials.

We reviewed passenger car maintenance and repair at seven facilities operated by four railroad companies and locomotive maintenance and repair at facilities operated by three railroads. We reviewed the AMTRAK car refurbishment program at facilities operated by two railroads and a car manufacturer. We discussed our findings and observations with company officials and AMTRAK inspectors assigned to the refurbishing installations.

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

BEST DOCUMENT AVAILABLE



April 11, 1973

Mr. Richard W. Kelley  
 Assistant Director  
 Resources and Economic Development Division  
 The United States General Accounting Office  
 400 7th Street, S.W.  
 Washington, D.C. 20024

Attention: Mr. Stanley Sargol  
 Room 2330

Dear Mr. Kelley:

This will acknowledge your letter of February 22, transmitting draft copies of a proposed report covering Condition of AMTRAK Trains and Problems in Maintaining Trains in Good Operating Condition.

We met with your representatives on March 9 to comment and discuss our views on the report. Subsequently on March 13 we received certain minor revisions to the report resulting from this conference.

The problems you identified should be viewed in light of the conditions under which we have been operating. Specifically, we are charged with the takeover, coordination and continued operation of 13 separate railroad passenger services under a contract which provided, among other things, that the railroads would perform the maintenance activities under certain terms and conditions. Concurrently we were charged with the responsibility for developing a new and better passenger service for the future.

We generally agree with your recommendations for improvements as set forth in your report and are setting our comments in the order of those recommendations.

1. Take direct responsibility for the maintenance and repair of AMTRAK's fleet.

AMTRAK has since January 1973 assumed full operating responsibility for the Fields Point, Providence, Rhode Island shop operation for maintaining Turbo Trains and is presently in the process of constructing

a similar facility at Brighton Park, Chicago, Illinois to maintain Turbo Trains which will operate in that area. AMTRAK is also negotiating for the takeover of five car and/or locomotive running repair shops and servicing facilities.

2. Enforce the use of Car Condition Trip Reports by train crews.

The car condition trip report system will be revised by April 30 and enforcement of the system will be improved as AMTRAK takes over the on-board service personnel and the field operating and maintenance inspection and supervision force is strengthened. AMTRAK has established three regional operating staffs with trained mechanical and operating personnel to improve control of train maintenance and operation.

3. Establish procedures for the inspection of car maintenance and repairs and increase the number of employees assigned to the inspection of maintenance and repair services.

During the summer of 1972 AMTRAK had directly in its employ 13 field, terminal and shop representatives to monitor maintenance and repair activities performed by railroads and contractors for locomotives and passenger cars. Since last summer we have increased our staff and we presently have 23 representatives in this function. An additional 20 are to be employed.

AMTRAK mechanical field representatives are required to make specific train inspections, insure that AMTRAK's maintenance policies are followed, establish priorities, investigate failures, and expedite required material.

AMTRAK has established maintenance instructions governing inspection procedures and is in process of expanding these instructions.

4. Expedite the establishment of a parts inventory control system for passenger cars.

The assignment of cars to specific maintenance points is being accomplished which will allow for a better allocation and concentration of spare parts.

Since the summer of 1972 we have been engaged in a program of developing inventory requirements to be

maintained by the railroads for replacement parts with a high probability of failure rate. We now have inventories under the responsibility of the railroads supplemented by readily accessible supply sources covering most critical classes of material related to passenger car equipment including components for air brakes, steam heat, electric and air conditioning systems, wheels and axles, etc. Our requirements for stocking or having accessible individual items are based on whether the part is critical for operation, frequency of demand and projected future need.

In addition, AMTRAK has established requirements and negotiated blanket purchase orders with guaranteed availability of certain critical parts.

5. Establish a maintenance record system for passenger cars.

A car maintenance record system has been inaugurated with on-board car record and instruction. This system is in the process of expansion to cover all systems of the car as it affects passenger comfort and convenience (e.g., air-conditioning, lighting, etc.) as well as mechanical elements. However, we do have a question as to how detailed the system should be.

Recommendations on a detailed maintenance system to supplement the on-board record system have been received from an independent consulting firm and are being considered in our program of maintenance control.

6. Schedule passenger cars in advance for refurbishment, prepare detailed specifications for refurbishment work, award contracts on the basis of open competition, and hold contractors responsible for defective work.

- a. We have a schedule for car refurbishment and specifications are being standardized to the extent possible with due regard to the fact that final specifications cannot be developed until the cars in the shop are torn down and the condition of the structural parts are determined.
- b. Contract shops performing car overhaul are furnished specifications with as much detail as possible prior to start of work. Individual car conditions requiring additional repairs in shop are evaluated on an individual basis by AMTRAK representatives and work orders

## APPENDIX I

prepared and approved. The work performed is described on work orders covering each car and a record of work performed is maintained both at contract shop and by AMTRAK.

- c. AMTRAK initially attempted to get competitive bids on the car refurbishing program. Offers were made to the following firms: Penn Central, Illinois Central, Burlington Northern, AT&SF, Hamburg, Auto Liner, Pullman-Standard. Adequate response was received from only the Burlington Northern and Pullman-Standard.

The very nature of car overhaul work places a high risk on anybody submitting a fixed price contract because they cannot possibly determine what expenditures might be required until the cars are torn down, sometimes at a considerable cost as in the case of the N&W car at the Woodcrest shop shown in the report as \$16,000 (consisting of \$4,000 recoverable and \$12,000 non-recoverable). Hence, most competitive bids would be on the high side. This is in fact what happened as the costs to do certain cars on a negotiated contract with Pullman-Standard were less in 1973 than the competitive bid submitted by Burlington Northern on those same cars in 1971.

Our general approach has been to make contracts for refurbishing with various shops and evaluate their performance in terms of cost, quality and timeliness. Such evaluation is regularly made for each car from reports based on the work performed. Based on this evaluation, we will be able to screen out those shops which do the poorest work. At the same time, railroad shops which have normally maintained only their own cars and outside shops which have normally maintained cars of their own manufacture will develop experience with other types of equipment, thereby permitting us to move to a competitive bid system on a cost effective basis. We can, however, see certain difficulties, inasmuch as the law requires that we use railroad employees whenever possible; railroad shops have indicated that they do not want to participate in a program which might provide for sharp variations in activity levels (e.g., when they fail to win a bid), inasmuch as this would place a financial burden on the railroad in terms of job protection payments.

- d. Contractors are held responsible for defective work, and we have collected overcharges from Illinois Central Gulf, Hamburg Industries and Hoover Aircraft and we also have claims outstanding from Penn

Central, Hamburg Industries and Pullman-Standard. We concur that open competition is a desirable goal, but for reasons set forth above, it may not be economical for the immediate future.

In addition, you have made observations in the report for which we believe further comment is appropriate.

1. Difficulties in maintaining locomotives in good operating condition.

BEST DOCUMENT AVAILABLE

[See GAC note 1 on p. 44.]

2. Condition of AMTRAK trains and equipment.

[See GAO note 1 on p. 44.]

[See GAO note 1 on p. 44.]

3. Car replacement program.

AMTRAK has a general long-range plan for systematically replacing cars as follows: The present service requires about 1,600 conventional cars which we own or have under lease (excluding the New York - Philadelphia service).

[See GAO note 1 on p. 44.]

About 900 of the used conventional cars which had been acquired are all stainless steel construction with electro-mechanical air conditioning. These cars can be rebuilt with new interiors at a lower cost than that of a new car. The rebuilt car is fully capable of operating at speeds up to 100 mph and hence will be satisfactory on the long-haul routes where roadbed replacement does not now appear feasible.

The remaining 400 cars are being given a heavy overhaul to extend their useful life for about five years pending replacement with a design most appropriate for the service on which they will be used.

With respect to corridors, there are three general alternatives: (1) continue to use locomotive-drawn conventional coaches; (2) replace present conventional coaches with high-performance turbine driven or electric self-propelled equipment, and, (3) develop and acquire new advanced equipment with even higher performance. We will do each of these things on one or another corridor but the mix will depend on market demand, evaluation of performance of turbine trains, and availability of roadbed improvement funds

which will be necessary to effectively utilize advanced equipment.

Two turbine trains are now in service and four additional turbine trains will be put in service during the summer of 1973. The performance results of these trains will be highly useful in determining equipment replacement strategy for corridor operation.

Finally, we would like to expand on the nature of our relationship with the railroads in providing passenger service.

The operating contract with the railroads provides that the railroads will perform all equipment maintenance and service work at "accepted railroad standards" and will charge AMTRAK whatever costs are incurred solely by reason of these functions, plus a 5% allowance for miscellaneous unmeasured costs. Hence, the railroads had responsibility for and control of our maintenance and servicing without any incentive, inasmuch as revenues accrue to AMTRAK. The railroad control without incentive is a fundamental weakness of the operating contract that permeates many of the functional areas. However, it is most deleterious to equipment maintenance. In addition, the standards of the railroads for service work as it affects equipment appearance is not acceptable to AMTRAK and the public. We recognize these difficulties and, as described above, are taking increasing control over service and maintenance activities.

We have made considerable progress in the past year in eliminating the conditions and problems noted in the report. The equipment acquired from the railroads is continuing to age under continual use and the problems of maintaining in adequate operating condition is becoming greater. However, as these and other programs become fully effective we can expect further and continued improvement in the condition and operation of our trains.

Respectfully submitted,



Roger Lewis  
President



OFFICE OF THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

ASSISTANT SECRETARY  
FOR ADMINISTRATION

April 16, 1973

Mr. Richard W. Kelley  
Associate Director, RED Division  
United States General Accounting Office  
400 Seventh Street, SW.  
Washington, D.C. 20590

Dear Mr. Kelley:

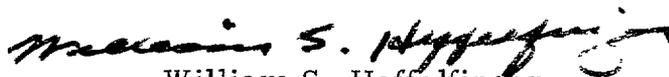
This is in response to your letter of March 6, 1973, requesting the Department of Transportation's comments on the draft report on the condition of AMTRAK trains and problems in maintaining trains in good operating condition. The report presents a fair picture of the situation AMTRAK inherited on May 1, 1971, and in particular, the rundown condition of intercity rail passenger equipment and available motive power.

In order that the findings and conclusions are placed in the proper perspective, the Department believes the report should indicate the time frame the GAO review was conducted. There have been improvements in AMTRAK operations since the review was conducted. Therefore, the time frame of the review should be clearly identified, and updated information should be included in the report to reflect current operations. In addition, to ensure that the reader is not misled on the condition of trains and cars, the report should explain what criteria GAO used as determining factors in classifying trains and cars as satisfactory or unsatisfactory.

The Department believes that consideration of the above points in the final report will ensure that the time frame is in context and will preclude unwarranted generalizations about AMTRAK operations.

A copy of the Federal Railroad Administration's reply is enclosed.

Sincerely,

  
William S. Heffelfinger

Enclosure

Department of Transportation's comments on the GAO Report entitled "Condition of Amtrak Trains and Problems in Maintaining Trains in Good Operation Condition."

SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

The GAO Report reviews the condition of trains operated by the National Railroad Passenger Corporation ("Amtrak") over a two month period. GAO made 340 inspection trips on 56 trains and reviewed the operation of Amtrak's equipment maintenance program (for both passenger cars and locomotives), and the general conditions of cleanliness, comfort, and reliability of passenger equipment. The draft report concluded that much improvement is needed in the maintenance, repair and refurbishment of Amtrak trains and equipment to place them in first class operating condition. To improve the conditions of its trains and equipment and to increase the number of in-service cars, the draft report recommends that Amtrak should take direct responsibility for the maintenance and repair of its fleet and establish an effective system of control over maintenance and repair activities. (Please see pages 41-42 of the draft report.) The specific recommendations are that Amtrak:

- Take direct responsibility for the maintenance and repair of Amtrak fleet.
- Enforce the use of Car Condition Trip Reports by train crews.
- Establish procedures for the inspection of car maintenance and repairs and increase the number of employees assigned to the inspection of maintenance and repair services.
- Expedite the establishment of a parts inventory system for passenger cars.
- Establish a maintenance record system for passenger cars.

[See GAO note 2 on p. 44.]

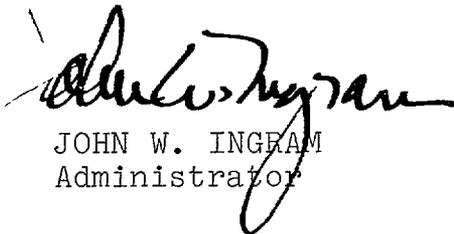
## APPENDIX II

- Schedule passenger cars in advance for refurbishment, prepare detailed specifications for refurbishment work, award contracts on the basis of open competition, and hold contractors responsible for defective work.

### POSITION STATEMENT

The Federal Railroad Administration has reviewed the draft report and notes that it was apparently developed pursuant to the Congressional mandate contained in section 805 of the Rail Passenger Service Act of 1970. The report is an independent evaluation of the Amtrak program and our comments are accordingly limited.

Our review indicates the recommendations of the draft report are consistent with the statutory mandate contained in section 305 of the Act, as amended, that Amtrak assume direct control over all aspects of its rail passenger service. For a comparative view please see those provisions of the Department's Report to Congress dated March 15, 1973, discussing Amtrak's equipment repair and purchase program and assumption of functions by the Corporation. The Federal Railroad Administration concurs in the GAO opinion that greater control by Amtrak of its operations should remedy the defects detailed in the GAO Report. A copy of the Department's "Report to Congress on the Rail Passenger Service Act" is included for ready reference.



JOHN W. INGRAM  
Administrator

Attachment

#### GAO notes:

1. Appropriate changes have been made in the final report to recognize deleted material.
2. Material included in draft report but deleted from final report.

**Interstate Commerce Commission**  
**Washington, D.C. 20423**

OFFICE OF THE CHAIRMAN

March 20, 1973

Mr. Robert A. Peterson  
Assistant Director  
General Government Division  
U. S. General Accounting Office  
441 G Street, N.W.  
Washington, DC 20548

Dear Mr. Peterson:

As suggested in your letter dated March 6, 1973, Commission staff met with representatives from the GAO and discussed the draft audit report on "Condition of Amtrak Trains and Problems in Maintaining Trains in Good Operating Condition." Our informal comments were conveyed during the meeting held on March 14, 1973. This letter will confirm those comments.

The Commission generally agrees with the facts set forth in the draft report. These facts, developed from data obtained in June and July 1972, correspond to those which have been developed by the Commission during its own inspections of rail passenger service. Our records indicate that Amtrak appears to have made some progress since June-July 1972 in maintaining its trains in good operating condition, but that the maintenance and repair problems outlined in your draft report still generally persist. We are all aware that Amtrak faces severe financial limitations and that it must establish priorities with available funds.

I have no disagreement with the recommendations presented in the draft report. I believe, however, that the recommendation that the President of Amtrak "take direct responsibility for the maintenance and repair of Amtrak's fleet" should contain some discussion concerning the cost of implementing such a recommendation and the benefits to be derived from the implementation. I recognize the difficulty of placing a monetary value on such a cost-benefit relationship. In my opinion, however, the report may not be sufficient unless it comments upon cost factors of implementing such a recommendation.

APPENDIX III

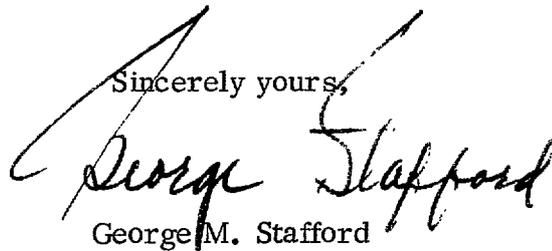
Mr. Robert A. Peterson

March 20, 1973

The Commission appreciates the opportunity to provide comments on the draft report and looks forward to receiving the other reports in the series of reports covering Amtrak activities.

If I can be of further assistance, please do not hesitate to call upon me.

Sincerely yours,

A handwritten signature in cursive script that reads "George Stafford". The signature is written in dark ink and is positioned above the printed name and title.

George M. Stafford  
Chairman