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STATE OF NEW YORK
OFFICE OF THE STATE COMPTROLLER

June 12, 2003

Mr. Joseph H. Boardman
Commissioner
Department of Transportation
State Office Building Campus – Building #5
Albany, NY 12232

Re: Turboliner Modernization Project
Project Delays
Report 2002-S-52

Dear Mr. Boardman:

Pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution, and Article II, Section 8 of the State Finance Law, we have audited the progress made by the Department of Transportation on the Turboliner Modernization Project (Project) for the period October 1, 1998 through October 31, 2002. This report is the first in a series of reports we plan to issue addressing activities related to the Project. Other reports will address such topics as Project monitoring and controls over contract payments.

A. Background

The Department of Transportation (Department) oversees the transportation systems in New York State. In one of these systems, rail transportation between New York City and Buffalo (the Empire Corridor) is provided to passengers by the National Railroad Passenger Corporation, also known as Amtrak. To improve passenger rail transportation in the Empire Corridor, the Department is implementing the High Speed Rail Improvement Program. The Department and Amtrak have entered into a contract to support the objectives of the high-speed rail program. While this program was formally announced to the public in September 1998, some of the activities relevant to the program were initiated prior to the announcement.

One of these activities was the Project, in which seven existing Amtrak trainsets were to be remanufactured so that they would be capable of traveling at 125 miles per hour, and meet current Federal safety and accessibility standards. A trainset consists of five cars: a power car at each end with two passenger coach cars and a food service car. One of the seven trainsets was partially modified in December 1994 to demonstrate that the train was safe and stable at high speeds. This trainset was successfully tested in early 1995 and, in March 1995, Amtrak began to use this train in the Empire Corridor. Based on the results of the demonstration project, Department, Federal

Railroad Administration, and Amtrak officials decided to modernize seven trainsets, including the demonstration trainset. In addition, Amtrak agreed to make rail infrastructure improvements to allow trains to reach higher speeds.

The trainsets were to be modernized through a remanufacturing process that was to be performed by a contractor and overseen by the Department. Since no other diesel turboliner (non-electric) trains existed that could serve as models for the fully modernized trainsets, there were no detailed specifications to guide the remanufacturing process. Therefore, to expedite the design and remanufacturing process, the Department sought to enter into a "design and build" contract with a remanufacturer. In this type of contract, the design work and the remanufacturing work are performed at the same time, sometimes by the same contractor, and project components are worked on as soon as they are designed.

In June 1996, the Department hired the engineering consulting firm of Chambers, Conlon & Hartwell, who issued a report that contained a preliminary scope of work for the new high speed diesel turboliners, a preliminary project schedule, cost estimates and possible public and private funding sources.

In February 1998, the remanufacturing contract with Super Steel Schenectady, Inc. (SSSI) was approved. According to the terms of the contract, the first two trainsets, which were referred to as the prototype trains, were to be ready for passenger service early in 1999, and the remaining five trainsets were later added to the scope of work to be ready for passenger service between June and December of 2002. According to the contract budget, which has been revised twice and may be revised again, SSSI is to be paid a total of \$74.4 million under the contract.

The Department also contracted with an engineering firm (TLEngineering Services or TLE) to provide technical assistance in developing the Request for Proposal for the design and build remanufacturing contract, and in monitoring the work performed under the contract. TLE, which is on-site at the SSSI manufacturing plant two days a month, assists the Department on technical issues and reviews SSSI payment requests. A total of four Department staff are assigned to the Turboliner Modernization Project: the project manager (who is also the Director of the Department's Economic Development and Administration Bureau, and is currently committed to spending three-quarters of his time on the Project), an on-site quality inspector who works at SSSI daily, and two staff who process payment requests and also have other responsibilities not related to the Project.

Amtrak also participates in the Project, as Amtrak officials attend monthly technical review meetings with Department, SSSI, and TLE officials. Amtrak also supplied the seven 30-year-old trainsets that were to be remanufactured, and agreed to provide all ten turbines and transmissions for the remanufactured trainsets. In addition, Amtrak, in conjunction with the Federal Railroad Administration, agreed to share certain other Project costs with the Department. Specifically, the Department and the Federal Railroad Administration (FRA) will share equally in the remanufacturing cost of the first two trainsets (the prototypes), up to a total cost of \$25 million (\$12.5 million each). The Department will pay all costs in excess of \$25 million for these two trainsets. The Department and Amtrak will share equally in the remanufacturing costs of the remaining five trainsets, and will share equally in the cost of up to \$140 million of infrastructure improvements that are made as part of the High Speed Rail Improvement Program.

B. Audit Scope, Objective and Methodology

We audited the progress of the Department's Turboliner Modernization Project for the period October 1, 1998 through October 31, 2002. The objective of our performance audit was to determine whether the remanufacturing of the trainsets has proceeded in accordance with the Department-approved contract schedule. To accomplish our objective, we reviewed and analyzed Department records, and interviewed managers and staff of the Department, SSSI, TLE and Amtrak. We also visited SSSI's remanufacturing plant to view work in progress, reviewed SSSI's records, and attended several monthly technical meetings of Department, SSSI, TLE and Amtrak officials.

We conducted our audit in accordance with generally accepted government auditing standards. Such standards require that we plan and do our audit to adequately assess those procedures and operations included within the audit scope. Further, these standards require that we understand the Department's internal control systems and compliance with those laws, rules and regulations that are relevant to the Department's procedures and operations that are included in our audit scope. An audit includes examining, on a test basis, evidence supporting transactions recorded in the accounting and operating records and applying such other auditing procedures as we consider necessary in the circumstances. An audit also includes assessing the estimates, judgments and decisions made by management. We believe our audit provides a reasonable basis for our findings, conclusions and recommendations.

We use a risk-based approach when selecting activities to be audited. This approach focuses our efforts on those procedures and operations identified through our preliminary survey as having the greatest probability for needing improvement. Consequently, by design, we use our finite audit resources to identify where and how improvements can be made. Thus, we devote little audit effort to reviewing procedures and operations that may be relatively efficient or effective. As a result, our audit reports are prepared on an "exception basis." This report, therefore, highlights those areas needing improvement and does not address activities that may be functioning properly.

C. Results of Audit

We found that the Turboliner Modernization Project is years behind schedule and at least \$21 million dollars over budget. The turboliner remanufacturing process is about four years behind the original schedule for Trainset 1. In addition, as of October 31, 2002, none of the fully modernized trainsets had been placed in service. While Department and SSSI officials expected the two prototype trainsets to be placed in service by the end of 2002, and four of the remaining five trainsets to be placed in service by the end of 2003, the Project is significantly behind the Department-approved contract schedule.

We identified a number of reasons for the extensive delays in the remanufacturing of the trainsets. Most significant was the delay in completing the first prototype trainset, as the work on this trainset was to provide the basis for the work on the other six trainsets. The first trainset on this design and build project was delayed, to a large extent, because the design work was not done timely. In addition, SSSI lacked sufficient engineering expertise, did not have experience with a project of this nature, and did not receive accurate legacy diagrams from Amtrak. Moreover, no work was performed on Trainset 1 for an interval of more than six months, a period during which

SSSI was experiencing cash flow problems. We also determined that the Department, which also has little experience with a project of this nature, did not effectively monitor the design and remanufacturing processes. We recommend that a special ad hoc group be created within the Department to investigate the reasons for the delays and cost increases, and to develop an action plan for preventing future delays and cost increases.

According to Department officials, the initial project schedules were very ambitious, especially in light of the fact that a design and build remanufacturing project of this nature had not been undertaken previously. Department officials stated they took action to address the delays by assigning a more experienced project manager to the Project in 1999, and by reorganizing in March 2002 to allow the project manager to spend more time on the Project. In addition, starting in 2001, the Department, Amtrak and SSSI worked together more closely to expedite work on the contract. The Department and SSSI are also working on additional supplemental agreements to the contract to modify contract payment terms to expedite payment to SSSI for some materials and equipment. However, we conclude that the Department was not effective in bringing the Project back on schedule. (Department officials replied to the draft report that they have “done everything administratively possible with the exception of litigation or contract termination, to facilitate the successful completion of this project by the contractor.” They added that the primary focus has been to complete a “quality project that meets the needs of intercity rail passengers in New York State.”)

1. Status of the Remanufacturing Process

According to the Department’s contract and supplemental agreements 1 and 2 with SSSI, the seven remanufactured trainsets were to be ready for passenger service on the following dates:

Trainset	Scheduled In-Service Date
1	January 21, 1999
2	Not Specified
3	June 20, 2002
4	August 1, 2002
5	September 12, 2002
6	October 24, 2002
7	December 5, 2002

(An in-service date was never specified for Trainset 2, but Department officials told us they expected the remanufacturing process for this trainset to be parallel to the process for Trainset 1, and they expected Trainset 2 to be ready for passenger service a few months after Trainset 1.)

We found that the remanufacturing process is significantly behind schedule for all seven trainsets. Although the contract schedule required that six of the seven trainsets be in service by October 31, 2002, Amtrak had not placed any fully modernized trainset in service.

The following are nine of the major sequences in the remanufacturing process:

1. Arrival of the trainset at the remanufacturing plant
2. Stripping the trainset
3. Sandblasting and prime painting the trainset
4. Repairing and modifying the cars
5. Assembling the equipment for each car
6. Painting the trainset
7. Testing the completed trainset by SSSI
8. Testing the trainset by Amtrak
9. Acceptance of the trainset by Amtrak for service on the Empire Corridor

As of October 31, 2002, only Trainsets 1 and 2 had gotten beyond the fifth milestone (assembling the equipment for each car). Trainset 1 was in the eighth major work sequence (testing by Amtrak), as it had passed performance testing by SSSI in August 2002. According to Department officials, Trainset 1 was ready to be placed in service by Amtrak in November 2002. This was already nearly four years behind schedule. Trainset 2 had just begun testing by SSSI. SSSI officials expected Trainset 2 to have been ready to place in service by Amtrak by December 31, 2002; more than three years behind schedule. Department officials advised us that Trainset 2 passed its testing in January 2003. However, it had not been placed in service by Amtrak.

As of October 31, 2002, Trainset 3 was in the work sequence of assembling the equipment for each car, and Trainsets 4, 5 and 6 were in the work sequence of repairing and modifying the cars. Trainset 7 (the partially modified demonstration model) was still being used by Amtrak, and will not be taken out of service and delivered to SSSI until Trainsets 1 and 2 have been accepted for service. When we compared the work in process on these five trainsets to when SSSI expected that work sequence to be completed, we noted they were between 8 and 18 months behind schedule.

SSSI officials advised that they expected Trainset 3 to be placed in service in January 2003. They expect Trainsets 4, 5 and 6 will be placed in service in May 2003, August 2003 and December 2003, respectively. These timetables put service delivery between 7 and 14 months later than required by the contract schedule. SSSI officials are unable to estimate an in-service date for Trainset 7, which was originally expected to be in service by December 5, 2002.

As a result of these extensive delays in the remanufacturing process, a fully modernized trainset has yet to be placed into service by Amtrak. Consequently, the benefits intended from the Project have yet to be realized. Moreover, as is described in the following section of this report, some of the delays in the remanufacturing process have led to higher remanufacturing costs, some of which will be borne entirely by the Department. In addition, Amtrak has had continued financial problems over the years, and there is a question as to whether Amtrak will be capable of meeting its contractual commitments to the Department in the future.

2. Reasons for Delays

The most critical part of the Turboliner Modernization Project was the completion of Trainset 1. The remanufacturing process for Trainset 2 was to follow the process established for

Trainset 1, and production on the remaining trainsets was not to begin until the design of the two prototypes was set. In fact, the contract with SSSI initially addressed the remanufacture of up to two prototype trainsets; the remaining trainsets were not added until the contract was first amended in September 2000. According to that initial contract, the overall design for the remanufacturing process was supposed to be “frozen” on January 21, 1999, the day after Trainset 1 was scheduled to be put in service by Amtrak.

However, the remanufacturing of Trainset 1 was subject to a number of extensive delays. As is described later in this report, design work and engineering specifications were significantly delayed, and asbestos unexpectedly found in engine compartments and car interiors had to be abated. In August 2000, more than 18 months after Trainset 1 was supposed to have been placed in service, the Department conditionally accepted the remanufacturing work on Trainset 1, indicating that it was ready to be tested for performance. The trainset did not pass all the required performance tests and, as a result, was sent back to SSSI for corrective work, which was not completed until June 2002, nearly two years later. In August 2002, Trainset 1 passed performance testing at SSSI and was sent to Amtrak for the final performance testing. As of October 31, 2002, Amtrak had not accepted Trainset 1.

As is described in the following sections of this report, we identified a number of reasons for the extensive delays in the completion of Trainset 1. In addition, while the delays in this trainset were the primary reason for the delays in the other trainsets, we also identified some causes of delay that were independent of this primary factor.

Some of the delays identified in our report may have led to higher remanufacturing costs. At the time of our audit, the Department had paid SSSI a total of \$41.7 million for work performed under the contract as of June 30, 2002. According to the agreement between the Department and the Federal Railroad Administration, all remanufacturing costs in excess of \$25 million for Trainsets 1 and 2 are to be paid by the Department without any matching federal funds. Since these costs have exceeded \$25 million, the Department will have the burden of fully reimbursing the excess costs. However, according to a liquidated damages clause in the Department’s contract with SSSI, SSSI may be liable for \$1,000 a day in penalties for the late delivery of Trainset 1. Therefore, the various responsibilities for the additional costs on the Turboliner Modernization Project remain to be determined.

We also note that, in 1996, when the Department’s consultant initially estimated the cost of the remanufacturing contract, it estimated that contract costs would total about \$53 million. The contract budget was later increased to \$74.4 million, and with two additional supplemental agreements, in process, actual payments will probably exceed this amount when all seven trainsets are completed. While some of the cost increases may not have been preventable, it is possible that others could have been prevented, or at least minimized, if the Turboliner Modernization Project had been managed more effectively.

a. Project Management

A project as large and complex as the remanufacturing of the seven trainsets consists of many smaller, separate activities. If the entire project is to be completed according to schedule, the

individual activities that make up the entire project must also be completed according to schedule. To ensure that the various deadlines are met, each activity must be monitored against its deadlines, and schedules must be adjusted when activities do not proceed as planned.

We identified significant weaknesses in the Department's project management practices for the Turboliner Modernization Project. In particular, the project schedules developed by the Department were not sufficiently detailed and were not kept up-to-date. As a result, the schedules were of limited use in helping the Department monitor and control the progress of the Project.

The schedules were not sufficiently detailed because, while they listed major work sequences in the remanufacturing process (e.g., stripping the trainset, sandblasting and prime painting the trainset), and indicated when each major work sequence should begin and end, they did not indicate when the various significant activities that make up each major work sequence should begin and end, and did not take into account the necessary interaction with Amtrak. Moreover, no specific work schedule of any kind was ever developed for Trainset 2; rather, the remanufacturing of this trainset was expected to generally follow the schedule for Trainset 1.

Department officials stated that SSSI was responsible for developing the detailed production schedules that could be used to monitor the progress of the remanufacturing process. However, SSSI did not develop such schedules until May 2002, at which time the process was already years behind schedule.

The Department's project schedules also were not kept up-to-date to reflect significant changes. For example, according to the original project schedule for Trainset 1, the remanufacturing process was to begin in May 1997, when SSSI was selected as the contractor. However, work could not begin until February 1998, when the approval process for the contract was completed. Despite this initial nine-month delay, the SSSI production schedule for Trainset 1 was not adjusted at all. Moreover, when the contract was amended in September 2000 to add change orders for the two prototype trainsets (1 and 2) and to authorize remanufacturing of the remaining five trainsets (including contract schedules for these trainsets), the SSSI production schedule for Trainset 1 still was not adjusted, even though it was at least 18 months behind schedule.

In November 2001, the contract was amended a second time to add change orders to all seven trainsets. However, none of the SSSI production schedules were adjusted, even though all seven trainsets were behind schedule. SSSI subsequently developed revised production schedules for Trainsets 1 through 6, but the Department has not approved these or any other revised schedules. Department officials preferred to keep the original project schedules for contract management purposes and may analyze these schedules for additional work after the contract is completed.

We note that the Department has had relatively little experience with rail equipment projects and none similar to the Turboliner Modernization Project. The projects in which the Department has had the most experience are projects involving the planning, design and construction of highways, bridges, and other infrastructure projects. We believe this inexperience may have contributed to the weaknesses in project management that were identified by our audit.

We also note that, while design and build contracts can be used to expedite the completion of a project, they must be managed effectively for this benefit to be realized. If this kind of contract is not managed effectively, project completion can be significantly delayed and project costs can escalate. In light of the Department's lack of experience with design and build contracts in general, we question whether such contracts should be used by the Department in the future unless it restructures its organization and management processes.

b. Design and Engineering Work

In a design and build contract, the timely completion of design work is critical, because much of the construction work cannot proceed until its design is completed. Department officials originally anticipated that design and engineering work on Trainset 1 would begin about five months before the remanufacturing work, and overlap the remanufacturing work for about three months. The remanufacturing work was then expected to continue for another five months after the design and engineering had been completed and approved. The remanufacturing work on Trainsets 2 through 7 was not expected to begin until all the design and engineering work on Trainset 1 was approved. This did not happen.

Despite the importance of the design and engineering work on Trainset 1, none of SSSI's production schedules specify due dates for any design and engineering tasks. In the absence of such readily identifiable milestones, critical delays in the design and engineering process were less likely to be identified in a timely manner.

Our audit found indications that the completion of Trainset 1 was delayed, in large part, because of delays in the design and engineering process. For example, a Department official and a TLE consultant asserted that, throughout the course of the project, there were times when the manufacturing was forced to move very slowly because SSSI's engineering department was not producing designs fast enough. In addition, according to Department officials, one of the reasons it took nearly two years (between August 2000 and June 2002) to correct performance problems in Trainset 1 was that SSSI did not have sufficient engineering expertise at that time.

We also note that, as of October 24, 2002, a total of 1,496 design drawings had been completed by SSSI. Based on SSSI's records, more than half of these drawings had to be revised at least once (404 of the drawings were revised once, while 376 of the drawings were revised two or more times). Such extensive design rework may have further delayed the remanufacturing process.

The amount of engineering work required for the project was much more than SSSI expected. For example, technical review meeting minutes from early in 1999 document that one reason for the delay of the project was that SSSI had not assigned enough qualified engineering staff to the project. In July 1999, an SSSI official said they intended to add more engineering personnel and more workstations to expedite the designs, but there was a shortage of qualified engineers at that time. (Department officials replied to the draft report that SSSI should have anticipated the amount of engineering work that was required. They added that they continually told SSSI that more engineering resources were needed to complete the designs in a timely manner.)

The July 2000 technical review meeting minutes noted that an SSSI official acknowledged that they did not have enough qualified engineers for the project and planned to increase the engineering staff. At that time, there were 11 engineers. In August 2000, SSSI hired additional engineers to work on project designs, increasing the total engineering staff to 30. However, in early 2001, SSSI discontinued using these engineers because it was having cash flow problems, and reduced the engineering staff to eight. SSSI then began to re-experience design delays that caused related delays in its remanufacturing effort. Later in 2001, SSSI contracted with more experienced supervisory engineering staff to help complete the design process.

Department officials stated that, in their opinion, SSSI's Engineering Department did not have adequate experience or supervision in the early stages of the project. Department officials told us they encouraged SSSI to promptly complete the design work, and periodically requested estimates of when the work would be completed. They added that, at that time, Amtrak engineers assisted SSSI in some of the design work.

It should also be noted that some of the delays in project design were due to errors on the legacy diagrams provided by Amtrak. Legacy diagrams are blueprints of each car in each trainset showing the original design as well as all modifications to the car that were made through the years. However, Amtrak's legacy diagrams were inaccurate and were not up-to-date, as they did not include all equipment modifications. Department officials told us that some of these errors were caused by errors in the original legacy diagrams provided to Amtrak by the equipment manufacturers.

c. Cash Flow Problems at SSSI

In August 2000, Trainset 1 failed certain performance tests and was sent back to SSSI for corrective work. This corrective work was not completed until June 2002. As previously noted, one of the reasons for this long delay was SSSI's lack of engineering expertise. Another reason was that, from late in 1999 until the Fall of 2000, a period of nearly one year, SSSI received no contract payments. The payments had ceased because the maximum amount (\$21.4 million) allowed under the original contract, which addressed only Trainsets 1 and 2, had been reached. The first supplemental agreement to the contract, which authorized payment for change orders on Trainsets 1 and 2 and the remanufacture of Trainsets 3 through 7, was not approved until September 2000.

SSSI did not have much other non-turboliner work at this time, and the absence of payments exacerbated SSSI's cash flow problems throughout 2000. SSSI did some work on Trainset 1 during this time and received a \$2 million payment upon the approval of the first supplemental agreement in September 2000, after delivery of the trainset to Amtrak for testing. However, SSSI stopped work on Trainset 1 for more than six months after receiving this payment. According to Department officials, this delay was caused by the lack of qualified engineering staff at SSSI. Department officials stated that they continued to work with SSSI during this time and referred the company to others who might be able to help correct Trainset 1's performance problems. SSSI refocused its work strategy to doing work on Trainsets 3 through 6 to generate cash flow and it deferred work on Trainset 1 because SSSI would not receive additional State payments for completing the required design drawing work, since it had already reached the current contract cap.

According to the terms of the contract amendment in September 2000, SSSI would receive a payment whenever it completed a major work sequence on Trainsets 3 through 6. Therefore, to help alleviate its cash flow problems, after the contract was amended, SSSI began to perform some of the work on Trainsets 3 through 6, even though the designs for Trainset 1 were not yet finalized. It therefore appears that SSSI's cash flow problems may have contributed to the delay in correcting the performance problems with Trainset 1.

We note that SSSI, which was founded in 1994, did not have any experience with large remanufacturing projects similar to the Turboliner Modernization Project. This manufacturing inexperience, when combined with the Department's inexperience in managing projects of this kind, contributed to the likelihood of delay. In addition, about 80 of SSSI's 150 employees work on the Turboliner Modernization Project. As a result, SSSI may have been particularly vulnerable to disruption when contract payments were suspended.

d. Change Orders

A change order results when work must be performed that was not originally anticipated in a contract. The change order authorizes the additional work, and authorizes payment for the work. Effective planning can minimize the number and cost of change orders. The two amendments to the contract with SSSI included several change orders that increased the contract budget by a total of about \$6.9 million. About \$1.7 million of this amount related to change orders that were needed to abate asbestos discovered in the engine compartments of Trainsets 1 through 7 (\$1.3 million), and the car lining in Trainsets 3 through 7 (about \$400,000).

SSSI officials asked Amtrak officials whether asbestos was used in the old trainsets before work on the contract started. Amtrak officials said there was no asbestos, but SSSI discovered asbestos in the engine compartments and some car interiors. As a result, SSSI had to change its remanufacturing plans to include specialized procedures for asbestos abatement. This change in plans delayed the process of dismantling all seven trainsets.

We note that Amtrak's maintenance manuals indicated that asbestos insulation was in the engine compartments. We therefore conclude that Amtrak officials should have known about this asbestos. The manuals did not indicate that there was asbestos in the car interior linings.

Officials at the Department, TLE and SSSI all agree that the project was delayed to some extent by the various change orders. However, no additional time was added to the Department's project schedule to account for the change orders. The internal production schedule created by SSSI does, to some extent, reflect this additional work.

e. New Turbines and Transmissions To Be Supplied by Amtrak

Each trainset consists of two power cars. Each power car has a turbine and a transmission. In the remanufacturing of the trainsets, new turbines and new transmissions will be installed in the power cars. Therefore, a total of ten new turbines and ten new transmissions will be required for Trainsets 3 through 7. According to the agreement between the Department and Amtrak, Amtrak is supposed to supply all ten turbines and transmissions. To keep the project moving, the Department

advanced ordered the first two turbines and transmissions and expects to be reimbursed for its share of the cost of the advanced ordered units in accordance with the reimbursement process established in the contract provisions.

As of October 31, 2002, Amtrak had yet to place a purchase order for the transmissions for Trainsets 4, 5, 6 and 7. Since it takes eight to twelve months to receive the transmissions from the time Amtrak places the order, the completion of these four trainsets may be further delayed unless Amtrak promptly orders the transmissions. Department officials told us that they repeatedly tried to get Amtrak to order the transmissions sooner. They also stated that they considered buying the equipment directly and later billing Amtrak for its share of the cost; however, State funding was not available to do this.

Recommendations

1. *Assess its organization and management processes related to capital projects to determine whether they are adequate to support the use of design-build contracts in an effort to preclude the recurrence of the type of problems (i.e., delays and cost increases) on the Turboliner Modernization Project.*
2. *Enhance the project management process to improve accountability over the remaining trainsets by, at a minimum, updating the project and production schedules, monitoring progress against these schedules, and holding parties accountable for achieving these goals.*
3. *Work closely with SSSI and TLE to ensure that engineering designs are accurate and timely.*
4. *Work with Amtrak to expedite the delivery of the transmissions for the remaining trainsets.*
5. *Establish an ad hoc group within the Department to investigate the causes and responsibility for the delays and cost increases in the Turboliner Modernization Project, and to develop an action plan for preventing future delays and cost increases. As part of its efforts, the ad hoc group, which should report directly to the Commissioner of the Department, should perform the following actions:*
 - *Determine the extent to which the delays and cost increases are attributable to Amtrak and SSSI, and evaluate the appropriateness of recovering certain amounts from Amtrak and SSSI, including amounts related to the liquidated damage clause in the SSSI contract for the late delivery of Trainset 1.*
 - *Determine when all design drawings will be approved by the Department and a final contract price will be established.*

A draft copy of this report was provided to Department of Transportation officials for their review and comment. Their comments have been considered in preparing this report, and are included as Appendix A. Department officials generally agree with and have taken steps to implement our recommendations.

Within 90 days after final release of this report, as required by Section 170 of the Executive Law, the Commissioner of the Department of Transportation shall report to the Governor, the State Comptroller, and the leaders of the Legislature and its fiscal committees, advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons therefor.

Major contributors to this report were Gerald Tysiak, Roger Mazula, Deb Spaulding, Lisa Dunleavy, Jennifer Paperman and Dana Newhouse.

We wish to thank the management and staff of the Department of Transportation for the courtesies and cooperation extended to our auditors during this audit.

Very truly yours,

Carmen Maldonado
Audit Director

cc: Deirdre Taylor
John Samaniuk



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
<http://www.dot.state.ny.us>

JOSEPH H. BOARDMAN
COMMISSIONER

GEORGE E. PATAKI
GOVERNOR

January 30, 2003

Ms. Carmen Maldonado, Audit Director
Office of the State Comptroller
Division of Management Audit and State Financial Services
123 William St - 21st floor
New York, NY 10038

Re: Draft Audit Report 2002-S-52:
*Turboliner Modernization Project -
Project Delays*

Dear Ms. Maldonado:

Attached is the Department of Transportation's response to the Office of the State Comptroller's Draft Audit Report 2002-S-52, "Turboliner Modernization Project - Project Delays".

Sincerely,

A handwritten signature in cursive script that reads "John F. Guinan".

John F. Guinan
Assistant Commissioner

Attachment

cc: N. Schneider, 7A-300
G. Smith, 7A-304
M. Novakowski, DOB

DEPARTMENT OF TRANSPORTATION RESPONSE TO OSC AUDIT REPORT 2002-S-52
TURBOLINER MODERNIZATION PROJECT - PROJECT DELAYS

RECOMMENDATION # 1: *Assess its organization and management processes related to capital projects to determine whether they are adequate to support the use of design-build contracts in an effort to preclude the recurrence of the type of problems (i.e., delays and cost increases) on the Turboliner Modernization Project.*

DOT RESPONSE: This recommendation is agreed to in part. The Department is assessing on an ongoing basis its current organization and management process related to future design-build equipment projects. We will complete our review within six months of the acceptance of the seventh trainset for revenue service. The Department does not believe that such an assessment would provide useful results for capital infrastructure projects since this project focused exclusively on equipment remanufacturing.

RECOMMENDATION # 2: *Enhance the project management process to improve accountability over the remaining trainsets by, at a minimum, updating the project and production schedules, monitoring progress against these schedules, and holding parties accountable for achieving these goals.*

DOT RESPONSE: The Department fully supports actions that will enhance accountability over the remaining trainsets. The Contractor has already developed an updated schedule that is guiding its daily efforts, as well as facilitating oversight by the Department and its engineering consultant. Additionally, during 2002 the Contractor hired a full time contract administrator to oversee this major effort. Ultimately, the Department's contractor is responsible for meeting the terms and conditions of the turboliner remanufacturing contract, including updating and compliance with the schedule. To the extent that this was not achieved in accordance with the contract provisions, the liquidated damages provisions contained in the contract may be used.

RECOMMENDATION # 3: *Work closely with SSSI and TLE to ensure that engineering designs are accurate and timely.*

DOT RESPONSE: The Department agrees with this recommendation. As documented in the Technical Review Meeting notes, Department officials have frequently urged the responsible parties to complete the designs in an accurate and timely manner.

RECOMMENDATION # 4: *Work with Amtrak to expedite the delivery of the transmissions for the remaining trainsets.*

DOT RESPONSE: The Department agrees with the concept of this recommendation and has repeatedly urged Amtrak to procure both the engines and transmissions that it is under contractual obligation to obtain. Amtrak's well known fiscal woes appear to be responsible for this not happening. It appears that there is little the Department can do to force such action other than to take legal action against Amtrak, which will be considered if all else fails.

DEPARTMENT OF TRANSPORTATION RESPONSE TO OSC AUDIT REPORT 2002-S-52
TURBOLINER MODERNIZATION PROJECT - PROJECT DELAYS

RECOMMENDATION # 5: *Establish an ad hoc group within the Department to investigate the causes and responsibility for the delays and cost increases in the Turboliner Modernization Project, and to develop an action plan for preventing future delays and cost increases. As part of its efforts, the ad hoc group, which should report directly to the Commissioner of the Department, should perform the following actions:*

- *Determine the extent to which the delays and cost increases are attributable to Amtrak and SSSI, and evaluate the appropriateness of recovering certain amounts from Amtrak and SSSI, including amounts related to the liquidated damage clause in the SSSI contract for the late delivery of Trainset 1.*
- *Determine when all design drawings will be approved by the Department and a final contract price will be established.*

DOT RESPONSE: The Department agrees with this recommendation and has already established a high level oversight committee co-chaired by the Commissioner's Chief of Staff and the Assistant Commissioner for Passenger and Freight Transportation to help guide the remainder of this project. Furthermore, the Department has already instituted an improved approval process for design drawings involving SSSI, TLE and Amtrak. Lastly, the Department is in the process of determining which parties may be responsible for delays and/or additional costs to the project.

SPECIFIC REPORT CONTENT COMMENTS

Page 1, Background section: Additional information

Comment: At the time this project was begun, no other trains were being produced for, or in operation within, North America that met then current Federal safety and equipment requirements and the requirements of the Americans with Disabilities Act that were capable of maintaining speeds up to 125 mph in non-electrified territory and that could also operate in commuter rail electrified territory. Thus, the Department proceeded to rebuild the seven turboliners that had been in service along New York's Empire Corridor since the mid-1970's. The Department used a competitive bidding process to select the contractor for the remanufacture. The Department widely solicited bids but given the unique nature of this work, only two bidders responded. An independent team determined that SSSI was the preferential bid, even though they had little direct experience in this area. The Office of the State Comptroller reviewed in detail the Department's procurement process and the submitted bids prior to approving the contract to begin remanufacturing the turboliners.

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Page 4, Paragraph 2: "...we conclude that the Department was not effective in bringing the Project back on schedule."

Comment: The Department has done everything administratively possible, with the exception of litigation or contract termination, to facilitate the successful conclusion of this project by the contractor. The primary focus to date has been to complete the project with a quality product that meets the needs of intercity rail passengers in New York State.

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Note

Page 6 and 7, Project Management: *General references to the schedules related to the project.*

Comment: The report appears to confuse the various timelines/schedules established as part of this project. Before the contract was awarded, a rough timeline was developed by Chambers, Conlan and Hartwell for project planning purposes. This timeline was only intended to guide the project until a contractor was selected and a contract schedule established. Once the contract was in place, the contract schedule became the only schedule by which baseline performance can be measured. Establishing and maintaining detailed production schedules specifying how the contract would be accomplished were and continue to be the contractual responsibility of the contractor.

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Note

Page 5, Paragraph 5: "The amount of engineering work was much more than SSSI expected."

Comment: The Department disagrees with this statement. SSSI should have anticipated the amount of engineering that was required. Moreover, the Department has continually pointed out to SSSI that more engineering resources were needed to complete the component designs in a timely manner.

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Note

Page 10, Paragraph 6: "According to the agreement between the Department and Amtrak, Amtrak is supposed to supply eight of these turbines and eight of these transmissions, while the Department is to provide the remaining two turbines and transmissions."

Comment: Under the contract, Amtrak must supply all ten turbines and transmissions. To keep the project moving, the Department placed an advance order for the first two. The Department will be reimbursed for its share of the cost of these advance ordered units through the reimbursement process established in the contract (Section 3.02, page 8 of the Program Agreement).

*
Note

State Comptroller's Note:

This report has been revised to reflect additional information provided in the agency's response.