



OFFICE *of* INSPECTOR GENERAL
NATIONAL RAILROAD PASSENGER CORPORATION

TRAIN OPERATIONS:

Acela 21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning

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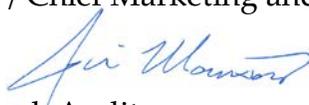
OIG-A-2020-004 | January 21, 2020

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Memorandum

To: Roger Harris
Executive Vice President / Chief Marketing and Revenue Officer

From: Jim Morrison 
Assistant Inspector General, Audits

Date: January 21, 2020

Subject: *Train Operations: Acela 21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning (OIG-A-2020-004)*

Acela is Amtrak's (the company) most profitable business line, and the company relies on Acela revenue to meet its financial goals. The \$2.1 billion Acela 21 program is the largest single investment in the company's 49-year history. Through this program, the company plans to buy 28 new trainsets to replace the 20 trainsets that have provided high-speed service on the Northeast Corridor (NEC)—the nation's busiest passenger rail corridor—since 2000. Each new trainset will have 82 more seats than the older trainset it replaces; selling tickets for these extra seats should provide additional sources of revenue. The company is scheduled to [REDACTED]. All 28 trainsets are scheduled to be delivered by [REDACTED] 2022.

The Acela 21 program is entering a critical stage if it is to begin revenue service on time. Alstom, the trainset manufacturer, is scheduled to begin testing the first prototype trainsets in early 2020. The company, meanwhile, is undertaking the key steps—commonly called “program elements” —necessary to launch service on time. These include modifying critical maintenance facilities, developing and upgrading its information technology (IT) systems to accommodate the new trainsets, and training more than 1,000 maintenance and onboard personnel.

In November 2017, we reported that the company faced risks to completing the program on time,¹ as well as significant oversight challenges. Given the size and importance of the Acela 21 program to the company's future, and to help avoid problems the company experienced with other recent, major acquisitions, our objective

¹ *Train Operations: The Acela Express 2021 Program Faces Oversight Weaknesses and Schedule Risks* (OIG-A-2018-002) November 16, 2017.

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for this report was to identify current risks to launching revenue service on schedule and reassess the company's oversight of the program.

To identify schedule risks, we interviewed key program officials, made site visits to service and inspection maintenance facilities in Washington, D.C. and New York City, and reviewed key programmatic documents including schedules that both the company and Alstom produced. To assess the company's oversight of the Acela 21 program, we reviewed the program's charter and monthly status updates, interviewed program management and company executives, and attended coordinating meetings with the Federal Railroad Administration (FRA), which oversees Amtrak, including the Acela 21 program.

SUMMARY OF RESULTS

Our previous work demonstrated that establishing an effective management structure for major acquisitions is a fundamental ingredient for cost and schedule efficiencies. This is particularly important in the near term because, in addition to the Acela 21 trainsets, the company plans to upgrade or replace several major fleet assets, including diesel locomotives and passenger cars. So far, the Acela 21 program has employed some sound program management practices. Nevertheless, management and structural weaknesses still pose significant risks. Foremost is that project delays have eliminated any cushion in the schedule, and multiple indicators point to further delays beyond the planned service launch in [REDACTED] 2021. [REDACTED]

Specifically, we found the following:

- **No schedule cushion left.** The company has instituted some key program management practices for the Acela 21 program to correct earlier problems and avoid those it experienced in other recent, major acquisitions. For example, the company established a dedicated team to oversee the trainset acquisition, developed an integrated master schedule and a list of program risks, and continues to provide monthly progress updates, consistent with company standards. Nevertheless, the program has no schedule cushion left, not only because of Alstom's delays in delivering the trainsets, but also because of other management weaknesses. Specifically, key program officials have had competing responsibilities, constraining their ability to undertake Acela 21 program

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activities. For example, due to a heavy workload, the Engineering department did not fill a key vacancy for six months, which delayed critical infrastructure modifications needed for trainset maintenance. Further, the program sponsor—the highest ranked company official responsible for the Acela 21 program according to the program charter—is also responsible for the NEC service line and, until recently, was accountable for the Moynihan Train Hall project, both of which are complex and significant undertakings. In addition to these competing responsibilities, the program’s management structure does not clearly define the program sponsor’s authority to task key program officials and make decisions to ensure problems are addressed in a timely manner.

- **Multiple indicators of further delays, but insufficient contingency planning.** The company must complete five critical program elements before it can launch revenue service; a delay in any one of these five program elements would delay the launch. Two of these elements have already experienced delays, including a projected [REDACTED]-day delay by Alstom in delivering the first trainset. Company executives acknowledged that all five elements would have to proceed nearly flawlessly to ensure on-time revenue launch in [REDACTED] 2021. Nevertheless, although company officials have discussed other options, the company has developed only one contingency plan. Under this option, the company would [REDACTED]
[REDACTED]. The company has not, however, developed a full range of contingency plans, such as selectively reducing service on lower-demand Acela trains, and has not assessed their potential impacts. As a result, the company cannot make fully informed decisions about how to mitigate the impacts of delays, or whether to increase resources now to try to avoid some delays in the first place.
- **Delay in generating additional revenue.** Even if new trainsets enter revenue service on time, they will not generate additional revenue when they are first launched. Due to the projected trainset delivery delay, the company now plans to launch revenue service [REDACTED]
[REDACTED]. The company has concluded, however, that before it can sell tickets for the additional seats, it must have enough trainsets to guarantee with 99 percent confidence that a new trainset will be available for a particular timeslot in the Acela schedule. Absent that guarantee, the company decided not to sell the

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additional tickets to avoid potentially overbooking seats and damaging the brand. We do not question the company's decision, but it is important to recognize that this decision will delay capturing additional revenue from the new, larger trainsets. We estimate that the forgone revenue could be substantial, and, any additional delays in trainset delivery, could increase this amount into the millions of dollars.

To minimize schedule risks and be prepared to manage any future delays in the Acela 21 program, we recommend that the Executive Vice President / Chief Marketing and Revenue Officer work with the Executive Vice President / Chief Operations Officer take the following actions:

- Ensure key program officials have sufficient capacity so that competing responsibilities do not interfere with their ability to complete program tasks in a timely manner.
- Assess the extent to which the program sponsor has the authority to task key program officials and make decisions necessary to resolve problems, and then work with the Executive Leadership Team to address any gaps in this authority.
- Task the program management team with developing additional contingency plans and assessing their operational and financial impacts.

In commenting on a draft of this report, the company's Executive Vice President/Chief Marketing and Revenue Officer and the Executive Vice President/Chief Operations Officer stated that the company agreed with our recommendations and described company actions and plans to address them. These include actions it has already taken, such as removing the Acela 21 program sponsor from being the program sponsor of the Moynihan Train Hall project to increase her capacity to focus on the Acela 21 program. Further, the company is now developing additional contingency scenarios, which span from minor delays to extensive delays or disruptions, and will continue to develop them as risks evolve and likely outcomes become more certain.

We note, however, that the company disagreed with our assessment that management weaknesses contributed to the delays that are threatening an on-time service launch. Instead, the company cites its management accomplishments, while only mentioning the trainset delivery delay—implicitly attributing program delays solely to its contractor, Alstom. While we note Alstom's delay, we stand by our findings that other delays were caused by management weaknesses. Further, we also believe the management themes identified within our recommendations are germane not only to

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this acquisition, but also to other ongoing projects like the Moynihan Train Hall and upcoming projects such as the Amfleet replacement. For management’s complete response, see Appendix B.

BACKGROUND

In August 2016, the company received a 23-year loan from the Build America Bureau Railroad Rehabilitation and Improvement Financing Program to finance the majority of the Acela 21 program to upgrade its high-speed train service along the NEC. The loan will allow the company to spend \$1.6 billion purchasing 28 new high-speed trainsets and \$850 million to undertake a series of infrastructure improvements needed to operate and maintain them. In particular, the company must modify three critical service and inspection maintenance facilities—in Washington, D.C., New York City, and Boston, Massachusetts—that will be used to perform regular, federally mandated maintenance on the trainsets. As of December 2019, the company has spent \$640 million on the program.

According to company documents, the Acela 21 program includes numerous program elements, five of which it must complete before the company can launch revenue service with the first trainset in [REDACTED] 2021, as shown in Figure 1.

**Figure 1. Acela 21 Program Elements
Necessary to Launch Revenue Service**



Source: OIG analysis of Acela 21 program documents

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THE PROGRAM HAS NO SCHEDULE CUSHION LEFT, DUE IN PART TO KEY MANAGEMENT WEAKNESSES

The company has instituted some key program management practices for the Acela 21 program to correct earlier problems and avoid those it experienced in other recent, major acquisitions, such as the replacement of its long-distance passenger cars.² Although some delays that reduced the company's schedule cushion are outside the company's control, such as the existing and evolving delay in Alstom's trainset delivery schedule, other delays occurred because of management weaknesses. These include key program officials who have multiple, competing job assignments and questions about whether the "program sponsor," the highest ranked company official in charge of the program, has the authority to task program officials and make all key decisions.

In 2017, we reported that the Acela 21 program faced a trainset delivery risk. At that time, Alstom in its monthly progress reports was already predicting the trainsets were 81-89 days behind its delivery schedule because of redesign work needed to meet certain safety standards. We also reported that the program experienced program management weaknesses, including oversight challenges and risks to completing the program on time.³ In particular, we found that management oversight and risk management tools were only partially in place. For example, although the company had established a dedicated team to oversee the trainset acquisition, the Engineering department had not assigned personnel to oversee several infrastructure projects. In response to our recommendations, the company's Enterprise Program Management Office (EPMO) and the Engineering department filled vacant positions. The company also assigned trained project management staff who began developing essential project- and risk-management tools, in keeping with company standards. These tools included, for example, a list of program risks and their mitigation plans, monthly progress reports, and a program-wide integrated master schedule to track and communicate program status and risks.

² In 2010, the company contracted with CAF USA to acquire 130 new single level long-distance passenger cars and experienced significant delays, which were compounded by an absence of program management capacity and capabilities. Originally scheduled to be completed in November 2014, the program, is still ongoing. See *Asset Management: Additional Actions Can Help Reduce Significant Risks Associated with Long-Distance Passenger Car Procurement* (OIG-A-2016-003), February 1, 2016.

³ *Train Operations: The Acela Express 2021 Program Faces Oversight Weaknesses and Schedule Risks* (OIG-A-2018-002), November 16, 2017.

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As of December 2019, however, the program still faced management challenges. Key program officials assigned to the Acela 21 program were concurrently assigned to other large programs that posed competing obligations. For example, in February 2019, the official responsible for modifications to the maintenance facilities—a critical step the company must complete on time to be able to maintain the new trainsets—left the company. The Engineering department, however, did not backfill this key position for six months. The official responsible for doing so said he did not have the capacity to fully focus on the Acela projects, which compete with other major programs he manages, including the multi-billion-dollar Baltimore and Potomac tunnel. While the Engineering position was vacant, the company made little progress on its critical infrastructure modifications needed for trainset maintenance. For example, the company initially planned to award construction contracts for these modifications in August 2019, but as of January 2020, the Engineering department had not finalized construction schedules or made the awards. As a result, the department has minimal schedule cushion left to absorb any unexpected setbacks once construction begins. The program sponsor also has competing responsibilities, including responsibility for service along the NEC and, until recently, was accountable for the Moynihan Train Hall project, both of which are significant and complex undertakings.

Further, the program's matrixed management structure⁴ does not clearly define the program sponsor's authority to task key program officials responsible for various program elements and make program-level decisions to ensure that problems are addressed in a timely manner. Under this structure, the program sponsor does not have authority over key officials—such as those in charge of delivering the trainsets—largely because they report to other departments. This is similar to what we reported in 2017, when we found that the company had assigned the EPMO as the program lead but did not formally define its duties and authorities to manage the program, leaving it unclear whether the EPMO had full authority over other departments with program responsibilities. Without executive action to identify and address gaps in management capacity and authority, the Acela 21 program remains at risk of schedule delays. Establishing an effective management structure for major acquisitions is crucial, as we demonstrated in our prior work documenting repeated program management weaknesses with past acquisitions. This is especially important because, starting in early 2020, the company plans to upgrade or replace several other major fleet assets,

⁴ According to the Project Management Institute, a matrixed management structure is in an organizational structure in which the project manager shares responsibility with the functional managers for assigning priorities and for directing the work of persons assigned to the project.

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including diesel locomotives and passenger cars. Resolving these fundamental management issues will be important to the success of these efforts.

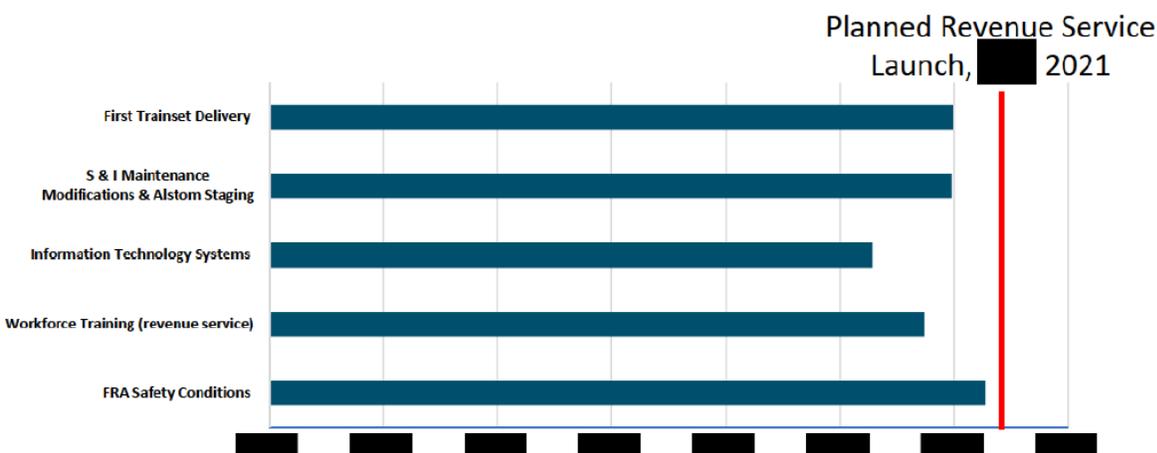
MULTIPLE INDICATORS POINT TO ADDITIONAL DELAYS, BUT THE COMPANY HAS NOT DEVELOPED A FULL RANGE OF CONTINGENCY PLANS OR ASSESSED THEIR IMPACT

The Acela 21 program has already experienced delays that have eliminated any schedule cushion, and multiple indicators point to additional delays beyond the planned service launch in [REDACTED] 2021. Company executives agree, are aware of this schedule risk, and have determined that if there is a delay, the company may need to run the older Acela trainsets longer than planned, which will be costly. The company, however, has discussed—but not developed—a full range of contingency plans to identify the best corrective action to take to limit the negative impacts of delays or determine whether to increase resources to avoid delays in the first place.

The Program Faces a Significant Risk of Further Delays

A delay in any one of five program elements would postpone revenue service launch. Figure 2 illustrates that the projected delivery dates for each of the five critical program elements compared to the [REDACTED] 2021 service launch date leave little margin for error.

Figure 2. Projected Delivery Dates of Critical Program Elements



Source: OIG analysis of Acela 21 program documents

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The program has already experienced delays in two of the five critical elements, and both face risk of additional delays.

- **Ensuring trainset delivery and performance.** As of December 2019, Alstom is projecting a [REDACTED]-day delay in delivering the first trainset compared to its original delivery date, eliminating most of the schedule cushion for the [REDACTED] 2021 service launch. This delay is largely outside the company's control. The trainsets face additional delivery delay risks, however. For example, on January 7, 2020, company officials told us that Alstom may face delays obtaining some of the equipment for the Positive Train Control safety system required for the new trainsets. Company officials said they are working to identify short-term workarounds until Alstom can resolve this issue, but ultimately, the train control system delivery and functionality is Alstom's responsibility. The trainsets could also face additional delivery delays because they are based on designs that have not operated in North America. Before FRA approves the trainsets for passenger service, Alstom and the company must test them on the NEC to ensure that they meet all contractual specifications and can operate safely. According to officials from the company, Alstom, and FRA, it is common for such testing and certification processes to identify problems that would delay operations. As a result, the company will be uncertain of the trainset delivery schedule until this testing and certification is complete. The company recognizes this risk but has limited ability to mitigate it because trainset testing and performance is Alstom's contractual responsibility.
- **Modifying maintenance facilities.** To help make up time after the six-month delay in finalizing designs for the three maintenance facilities, the company has expedited the process to solicit bids from contractors. As of January 2020, however, the company has not yet set a construction start date or awarded a construction contract, as it originally planned to do in August 2019. Moreover, because of these delays, the company now has limited time to accommodate any unforeseen setbacks once construction begins. For instance, the contractor will be working in the facilities while they remain operational, meaning the contractor will need to ensure that the facility modifications stay on schedule without interrupting ongoing Acela maintenance.

Moreover, the company needs to complete work in three additional complex areas to launch revenue service, each of which has minimal schedule cushion and therefore presents an inherent risk of additional delays. These areas include developing multiple

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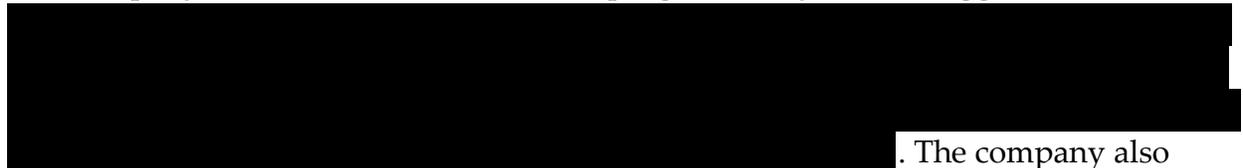
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IT systems, some of which are new and untested. Our past work has demonstrated that the company has had limited success integrating complex systems.⁵ Further, in the time remaining before the launch date, the company must train nearly 1,000 personnel, including conductors and engineers. To date, the company has not finalized this training program but is working with Alstom to receive a trainset in time to use for training. The company must also take actions to comply with 12 FRA safety requirements that are specific to Acela service. These include adding fencing to the NEC to protect the right-of-way from trespassers and upgrading track. As of December 2019, the company is on schedule, and it is working with FRA to ensure that it meets all of these requirements.

The Company Has Not Developed A Full Range of Contingency Plans or Assessed Their Impacts to Identify the Optimum Response to Delays

The company is aware of the Acela 21 program's overall schedule risk; however, contrary to its own program management guidelines, it has not developed a full range of contingency plans and assessed their potential impacts to identify the most effective way to respond to a delay.

The company has determined that further program delays could trigger the need to

. The company also acknowledges that it could face significant additional costs because several legacy trainsets will be due for FRA-required overhauls in the near-term. Company officials also told us that (1) obtaining spare parts for the legacy trainsets may be difficult because Alstom no longer manufactures them, and (2) if delays go beyond a year, the company would need to assess the financial viability of continuing to operate the aging legacy equipment.

The company, however, has not developed a full range of contingency plans to weigh the costs and benefits of other potential scenarios. For example, instead of extending leases on the older equipment, the company could temporarily reduce Acela service on

⁵ *Safety and Security: Progress Made in Implementing Positive Train Control, but Additional Actions Needed to Ensure Timely Completion of Remaining Tasks* (OIG-A-2017-001) October 6, 2016.

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select, lower-demand Acela trains, or use different rolling stock in a particular time slot in the Acela schedule. One program official said that the company may be able to cut less popular Acela trains from the schedule without significant impacts on customers or its brand. Such options would have an impact on revenue but may be less costly than [REDACTED].

The program sponsor told us that, as of December 2019, the program office had begun calculating the revenue impacts of reducing service and had held preliminary discussions about additional contingency plans but had not developed them. Until the company does so, it cannot ensure that it has identified—and would be ready to implement—the most effective way to manage the fallout of delays. Moreover, without a full range of contingency plans, the company does not have the information it needs to determine whether to increase resources now to try to avoid delays in the first place.

NEW TRAINSETS WILL NOT GENERATE ADDITIONAL REVENUE AT SERVICE LAUNCH

Even if the company launches the Acela 21 program as planned in 2021, the company recently decided that—to protect the Acela brand—it will not immediately sell the 82 additional seats on the new trainsets at service launch.

Alstom was originally scheduled to deliver up to nine trainsets by [REDACTED] 2021. Given the reported [REDACTED]-day delay in trainset delivery, however, the company now intends to launch revenue service [REDACTED]

[REDACTED]: each time Alstom delivers a new trainset, the company plans to take one legacy trainset out of service. Company officials told us, however, that they have decided to wait to sell the additional seats until they have enough trainsets to guarantee—with 99 percent confidence—that a new trainset will be available to run in a given timeslot. That would allow the company to reliably sell the extra seats without the risk of overbooking. Senior company officials told us that overbooking trains could jeopardize customer satisfaction and the Acela's brand as a reliable, premium, business-class service. The company expects that it will take four months—[REDACTED]—to begin selling the additional seats.

We do not question the company's decision to protect the brand, but doing so will delay the company's ability to capture additional revenue from the new seats. The company has not estimated the amount of revenue it will forgo, but we estimate that it could be

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more than \$15,000 per trainset per departure.⁶ This amount could total in the millions of dollars before the company receives enough of the newer trainsets to reliably sell the additional seat capacity. The amount of forgone revenue could increase if the service launch is delayed beyond [REDACTED] 2021 or if any of the initially delivered trainsets experiences problems, as has occurred with past purchases of rolling stock.

CONCLUSIONS

Our prior work has documented repeated program management weaknesses with major company acquisitions. Addressing the management weaknesses we identified will help the company more effectively manage the Acela 21 program. In particular, ensuring that program officials have the capacity and the authority to make decisions and resolve problems in a timely manner will help the largest acquisition in company history avoid further delays. Additional contingency planning will also help the company ensure it has identified the best solution if the service launch is postponed past [REDACTED] 2021. Given the company's significant upcoming acquisitions of rolling stock, correcting these program management deficiencies is especially important.

RECOMMENDATIONS

To minimize schedule risks and be prepared to manage any future delays in the Acela 21 program, we recommend that the Executive Vice President / Chief Marketing and Revenue Officer work with the Executive Vice President / Chief Operations Officer take the following actions:

1. Ensure that key program officials have sufficient capacity so that competing responsibilities do not interfere with their ability to complete program tasks in a timely manner.
2. Assess the extent to which the program sponsor has the authority to task key program officials and make decisions necessary to resolve problems, and then work with the Executive Leadership Team to address any gaps in this authority.
3. Task the program management team with developing additional contingency plans and assessing their operational and financial impacts.

⁶ This estimate is based on fiscal year 2019 company data on Acela ridership and revenue.

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MANAGEMENT COMMENTS AND OIG ANALYSIS

In commenting on a draft of this report, the company's Executive Vice President / Chief Revenue and Marketing Officer and the Executive Vice President / Chief Operations Officer agreed with our recommendations and described the company's actions and plans to address them, which we summarize below.

- **Recommendation 1:** Management agrees with our recommendation to ensure key program officials have sufficient capacity so that competing responsibilities do not interfere with their ability to complete program tasks in a timely manner. The company also points to the recent change of responsibilities for the program sponsor to ensure greater focus on the Acela 21 program execution. Specifically, in late December 2019 the Moynihan Train Hall program's executive sponsorship transitioned from the Vice-President, Northeast Corridor Service line, to the Vice-President, Stations, Properties and Accessibility. In addition, the company committed to ensuring that the management team will utilize the matrixed organization structure and tools to elevate any challenges to the appropriate stakeholders for timely resolution. The target completion date will be ongoing through the service launch period.
- **Recommendation 2:** Management agrees with our recommendation to assess the extent to which the program sponsor has the authority to task key program officials and make decisions necessary to resolve problems, then work with the Executive Leadership Team to address any gaps in this authority. The company reiterated that the program team is encouraged to escalate matters to executive leadership and that the Service Launch Steering Committee allow for discussion regarding program progress, risks, and needs, and facilitate needed decisions and action steps. The target completion date will be ongoing through the service launch period.
- **Recommendation 3:** Management agrees with our recommendation to task the program management team with developing additional contingency plans and assessing their operational and financial impacts. The company is now developing a revised short-list of contingency scenarios which span from minor delay to extensive delay or disruption. The company stated that contingency planning will continually evolve as risk factors change and outcome variables become more certain. The target completion date will be March 31, 2020, and then monthly through the service launch period.

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In the response, management also provided additional company perspectives for some of the issues the OIG identified. The company highlighted a number of the same program management improvements we note in our report and acknowledged that schedule compression had occurred and could worsen if there is any additional trainset delivery delay or a delay in any other critical path deliverable.

The company did disagree with our assessment of management weaknesses and that they played a role in delays. The company qualifies that the weaknesses did not play a role in trainset delays—our report already attributes trainset delays in part to the contractor, Alstom. The company's response, however, does not directly address the delays in other areas of the program that we identified were due to management weaknesses, such as in filling a key vacancy that delayed beginning construction for needed facility upgrades. We maintain that it is important for the company to take ownership of these management weaknesses and address them, not only so that it can head off any additional issues within the Acela 21 program, but also avoid these issues in other ongoing projects like the Moynihan Train Hall and upcoming projects such as the replacement of its Amfleet rolling stock. Given the billions of dollars the company plans to spend over the next decade, positioning itself now to manage these acquisitions most effectively will ensure good stewardship of taxpayer dollars and best serve its customers.

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APPENDIX A

Objective, Scope, and Methodology

This report provides the results of our audit of the company's Acela 21 program. Our objective was to identify current risks to launching revenue service on schedule and reassess the company's oversight of the program. Our scope included program elements critical to service launch for the Acela 21 program. We conducted our work from September 2019 to January 2020 in Washington, D.C.; Philadelphia, Pennsylvania; New Castle, Delaware; Hornell, New York; and New York City. Certain information in this report has been redacted due to its sensitive nature.

To determine which program elements were needed for service launch, we reviewed company documents, interviewed senior company officials responsible for the program, and attended quarterly meetings the company held to update Federal Railroad Administration officials on the program status.

To identify risks to launching revenue service as planned, we reviewed the company's schedules and Alstom's schedule. We also reviewed any changes to these schedules and interviewed company officials responsible for each program element to understand the risks and mitigation efforts. We conducted site visits to two of the three service and inspection maintenance facilities that require modifications prior to service launch, and we interviewed the official in charge of overseeing these projects. We also visited Alstom's facility in Hornell, New York, where the trainsets are being assembled.

To assess the company's oversight of the program, we reviewed the program charter and the current management structure, and we interviewed key company officials responsible for the program. We also interviewed officials from the company's Enterprise Program Management Office to understand changes made to the program management structure since our last report in 2017.

We conducted this performance audit in accordance with generally accepted governmental auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

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Internal Controls

We reviewed the management controls for overseeing the program and mitigating associated risks. In particular, we assessed the internal control components and underlying principles and determined that three of the five internal controls areas were significant to our audit objectives:

- **Control environment.** Management should establish an organizational structure, assign responsibility, and delegate authority to achieve the entity's objectives.
- **Risk assessment.** Management should identify, analyze and respond to risks related to achieving the defined objectives.
- **Control activities.** Management should design control activities to achieve objectives and respond to risk.

We developed audit work to ensure that we assessed each of these controls. This included reviewing the extent to which the company followed internal program management standards, such as developing a risk register, maintaining an integrated master schedule, assigning clear roles and responsibilities for program managers, and determining if there were clear lines of authority within the program. Because our review was limited to these internal control components and underlying principles, it may not have disclosed all of the internal control deficiencies that may have existed at the time of this audit.

Computer-Processed Data

Our analyses and findings did not rely on computer-generated data from any company information systems.

Prior Reports

In conducting our analysis, we reviewed and used information from the following reports:

Amtrak OIG:

- *Amtrak: Top Management and Performance Challenges—Fiscal Years 2019 and 2020* (OIG-SP-2018-011), September 28, 2018
- *Train Operations: The Acela Express 2021 Program Faces Oversight Weaknesses and Schedule Risks* (OIG-A-2018-002), November 16, 2017

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- *Asset Management: Additional Actions Can Help Reduce Significant Risks Associated with Long-Distance Passenger Car Procurement (OIG-A-2016-003), February 1, 2016*
- *Safety and Security: Progress Made in Implementing Positive Train Control, but Additional Actions Needed to Ensure Timely Completion of Remaining Tasks (OIG-A-2017-001) October 6, 2016*
- *Governance: Improved Policies, Practices, and Training Can Enhance Capital Project Management (OIG-A-2014-009), July 15, 2014*

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APPENDIX B

Management Comments

NATIONAL RAILROAD PASSENGER CORPORATION

Memo



Date	January 17, 2020	From	Roger Harris, EVP Commercial and Marketing Scot Naparstek, EVP Chief Operations Officer
To	Jim Morrison, Assistant Inspector General, Audits	Departments	Commercial and Marketing Operations
		Cc	Eleanor Acheson, EVP General Counsel Caroline Decker, VP Stephen Gardner, Sr. EVP Carol Hanna, VP Controller Charlie King, VP Dennis Newman, EVP Steven Predmore, EVP Mark Richards, Sr Director Amtrak Risk & Controls DJ Stadtler, EVP CAO Tracie Winbigler, EVP CFO Christian Zacariassen, EVP

Subject Management Response to TRAIN OPERATIONS: A21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning (Draft Audit Report for Project No. 013-2019)

This memorandum provides Amtrak's response to the draft audit report entitled, "*TRAIN OPERATIONS: A21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning*". Amtrak appreciates the opportunity to respond to the report and recommendations and values the perspective and insights provided by the OIG's work on this matter. Amtrak management concurs with your view on the complexity and importance of this program and the need to continually address risks and perform comprehensive contingency planning.

General Comments and Observations

Amtrak management shares many of the perspectives offered in the OIG report and has acted on several of the issues raised in the recommendations portion of the report. Regarding the overall findings, Amtrak offers a different assessment on the schedule, program management/contingency planning, and the revenue strategy to support the incremental service launch in 2021:

- Delivery and launch schedule are largely unchanged from the November 2017 report. Amtrak is planning 2021 service launch of first new *Acela* trainset.

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Certain information in this report has been redacted due to its sensitive nature.

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- Maintenance facility modifications are on schedule to support launch of trainsets. Additionally, Mechanical leadership with assistance from others in the organization are working on a plan for the trainsets that may not be running at the start of revenue service.
- Program management, program sponsorship, executive leadership engagement and internal coordination is organized to achieve highest levels of transparency and effectiveness. Contingency planning is well underway and continually evolving.
- The FY21 revenue plan does not assume sale of incremental additional inventory and will require operational certainty around positioning of new equipment.
- Amtrak and Alstom, the original equipment manufacturer (OEM), have forged a strong partnership. Two test trains, Prototype 1 (PS01) & Prototype 2 (PS02), have been fully assembled. PS01 has undergone preliminary static testing and the tests, to date, have been successful. PS01 is being prepared for shipment to Pueblo, Colorado where testing at the Transportation Technology Center (TTC) will commence in spring CY2020. PS02 will undergo dynamic testing on Amtrak's Northeast Corridor in summer/fall of 2020, with the exact date still to be determined.
- Amtrak's Philadelphia Penn Coach Yard (PCY) will be the PS02 NEC test base. PCY facility work is underway to support PS02 testing.



- There are no trainset delays related to program sponsorship and oversight.
- From its inception, Amtrak has recognized the depth and complexity of replacing the Acela fleet and the challenges associated with the equipment transition planning requirements. Any schedule risks must be considered in combination with the current *Acela* fleet retirement plans, which acts as a fixed variable for the program timeline.
- Furthermore, schedule compression has occurred and may worsen due to trainset delivery delays associated with US-based supply chain maturation and component availability issues as well as any other critical path deliverables.
- The program management team has effectively identified risks and is tracking and monitoring risks daily, developing mitigation and contingency planning to address risks.

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- The program continues to face significant risks and delays, consistent with the OIG findings in the November 2017 report. The program team has kept Amtrak management and program leadership fully apprised and briefed of all risks to the schedule and in real time.

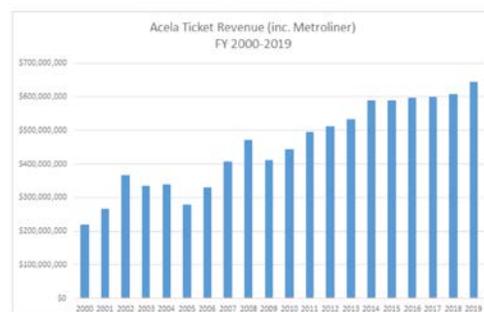
Acela Background

Acela is Amtrak's most commercially successful and profitable service on the nation's busiest rail corridor. Performance on the NEC, as reflected in all key metrics, continues to trend favorably. The growth in demand and FY19 record in revenue and ridership have been bolstered by improvements in customer satisfaction, on-time performance, and overall reliability. *Acela's* brand has never been stronger and it is with this understanding that the A21 program team and Amtrak's executive leadership share a full and deep appreciation of the magnitude of the effort and all that is at stake, reputationally and commercially, for the Northeast Corridor and for the millions of customers whom rely on *Acela* each year.

In the first full year of service, *Acela* ridership was approximately 2.40M, and in the most recent fiscal year, ridership was approximately 3.58M, an increase of approximately 48.5%. Even more importantly, annual ticket revenue has tripled (Table 1) since the service was introduced, largely due to reliability and performance improvements. When *Acela* service was introduced, Amtrak's Air/Rail share between Washington and New York was as low as 37% but has more than doubled to approximately 75-78% today.

Given the record of success and customer demand and loyalty, Amtrak must take great care as it plans for the relaunch of the brand with new equipment starting in [REDACTED] 2021. As such, Amtrak never assumed additional revenue growth from the new *Acela* equipment in FY21, not in the original business case nor in the current five-year planning horizon. Given the limited initial inventory and the ramp up that will be required to drive additional demand, Amtrak's plan to cap the sale of seats on next generation trainsets to match the capacity of current generation *Acela* trainsets (with each new train comes additional capacity of 82 seats.) has always been built into the launch strategy. While Amtrak is eager to fully monetize and sell the inventory on the new equipment, until there are enough trains in service to provide greater certainty in the schedule, Amtrak cannot risk disruptions or inconveniences to its customers during the transition. More importantly, based on the current delivery schedule, Amtrak will be able to achieve greater scheduling certainty by [REDACTED] which coincides with the start of the Fall business travel peak when additional seats on the *Acela* trainsets will be in greatest demand. The timing is favorable for this critical mass of trains to enter the NEC schedule at this point on the calendar. All of this is being reflected in the revenue modeling five-year planning efforts currently underway.

Table 1



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Program Management

In the November 2017 report, “Train Operations: The Acela Express 2021 Program Faces Oversight Weaknesses and Schedule Risks” the OIG states, “...Alstom and the company have not resolved a disagreement over a potential three-month delay in delivering the trainsets.” Nothing materially has changed relative to the delivery and launch schedule and the issue remains in dispute. What has occurred since the 2017 report is the mobilization of the company’s Enterprise Program Management Office and the development of Amtrak’s well-defined program tracking all potential delays while developing mitigation and contingency planning to address a vast and dynamic range of variables that may impact service launch. A charter for the A21 enterprise-wide PMO was approved by the Amtrak ELT and a team was organized to support the charter mission. The A21 Integration PMO, with a cross-functional focus on the Amtrak end-to-end new service solution, joined the Trainset and Engineering efforts already in process in the Fall of 2017. This includes:

- A robust program structure to manage such a massive and complex program requires working groups and processes which were established and organized into eleven workstreams to enable program decision-making, execution, and key outcomes.
- Establishment and mobilization of 11 workstreams (such as Workforce Readiness and Customer Experience) spanning multiple departments and requiring constant collaboration to deliver program elements.
- Monthly program-wide status report is generated in conjunction with business workstream leaders and shared with the Executive Leadership Team (ELT), Senior Leadership Team (SLT), and a wide audience of program stakeholders and participants.
- Service Launch Steering Committee (VP-level) and Program Leadership Team (workstream leaders and key contributors) both meet on a monthly basis, while standing workstream-specific groups connect for progress discussions on set cadences.
- The Program Leadership Team also hosts a quarterly stakeholder meeting to provide awareness of program progress and upcoming milestones for internal Amtrak employees to bolster interest and engagement.

OIG Recommendations

To minimize schedule risks and be prepared to manage any future delays in the program, we recommend that the Executive Vice President/Chief Marketing and Revenue Officer work with the Executive Vice President/Chief Operations Officer to employ the following key program management principles:

1. **Ensure key program officials have sufficient capacity so that competing responsibilities do not interfere with their ability to be able to complete program tasks in a timely manner.**

Management Response/Action Plan:

Amtrak is fully committed to ensuring key leaders and contributors have the capacity and resources necessary to achieve the program goals and deliverables, and this commitment will continue through the service launch period.

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In late CY 2019, the Moynihan Train Hall (MTH) program executive sponsorship role transitioned from the VP, Northeast Corridor Service Line (NECSL), to the VP, Stations, Properties and Accessibility. While the VP, NECSL continues to be a key stakeholder and Steering Committee member for the MTH program, this sponsorship transition allows greater focus on the final phases of the next generation Acela implementation and execution.

The OIG correctly characterizes the highly complex nature of the program, crossing all functional departments of the company, requiring the close coordination across all the company. The Executive Leadership Team has made it clear that coordination is fundamental to the success of the program and has demonstrated its leadership and active engagement in the form of participating in standing meetings, organizing high level briefings, interceding when matters have been escalated. To date, there is not one example of any trainset or service launch schedule delay that is attributable to organizational lapses or gaps.

While many key officials and program leads, such as the Trainset and NECSL PMO members, continue to be solely dedicated to the program efforts, the program sponsor, who is supported by the NECSL PMO, is empowered to elevate any resource challenges to the leaders in Engineering, Information Technology, Safety, and Human Resources, as well as the ELT. Every program Service Launch Steering Committee meeting, chaired by the program sponsor and facilitated by the NECSL PMO, will include a resource commitment review to identify any current and future competing priorities which could jeopardize program objectives.

Concurrently, the Sr. Director, Program Management (Engineering) will inform the AVP, Project Delivery (Engineering) and VP, Chief Engineer of any emerging competing priorities.

Responsible Amtrak Official(s): EVP, Chief Marketing and Revenue Officer, VP, NECSL, and Acela 21 Service Launch Steering Committee

Target Completion Date: MTH sponsorship transition occurred December 18, 2019. The program Service Launch Steering committee convenes monthly. All other outlined actions are ongoing.

2. **Assess the extent to which the program sponsor has the authority to task key program officials and make decisions necessary to resolve problems, then work with the Executive Leadership Team to address any gaps in this authority.**

Management Response/Action Plan:

Amtrak fully appreciates that leadership agility, timely decision-making, and sound execution are essential to the successful delivery of the program. Creating, evaluating and evolving an empowered program leadership framework is a top priority. The program sponsor and dedicated program team, the NECSL PMO, are appropriately and fully empowered to carry out their respective responsibilities in the matrix organization that such a project requires and are also empowered and encouraged to escalate matters to executive leadership as appropriate.

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As previously noted, the program sponsor, chairs the standing Service Launch Steering Committee which meets monthly, and is comprised of leaders from all areas required to support the service launch. This forum allows for discussion regarding program progress, risks and needs, and facilitates the flow of coordinated decision-making and action.

Responsible Amtrak Official(s): EVP, Chief Marketing and Revenue Officer and VP, NECSL

Target Completion Date: Ongoing

3. Task the program management team with developing additional contingency plans and assessing their operational and financial impacts.

Management Response/Action Plan:

The program risk management process enables Amtrak to create a broad awareness of outcome uncertainty. A key part of the Acela 21 risk management response, contingency planning was deployed as part of Amtrak's framework to develop action plans for a variety of "what if" scenarios. The Amtrak contingency plan must continually evolve as risk factors change and outcome variables become more certain.

In early CY 2019, the NECSL PMO led a cross-company contingency planning analysis effort in the month which followed conclusion of the new trainset final design reviews. The plan included various new equipment delivery and deployment scenarios, with analysis which included two options, one of which was temporary service reduction on lower-demand Acela trains and the associated revenue impact. This analysis was later updated in September and November 2019 when new, pertinent trainset delivery timing information became available.

The VP, NECSL in coordination with the VP, Chief Mechanical Officer, EVP, Strategy & Planning and Treasurer, recently coordinated with the NECSL PMO to update the contingency plan analysis with the latest available information, including the most current trainset commissioning projections.

A revised short-list of contingency scenarios which span from minor delay to extensive delay/disruption is being developed by leadership and is under consideration. The contingency plan will be updated by March 31, 2020; iterative updates will be made as needed moving forward. Each update will be shared and discussed with the program Service Launch Steering Committee. Decisions related to activating contingencies will originate from the Service Launch Steering Committee either during a standing monthly meeting, or via offline communication between meeting occurrences.

Responsible Amtrak Official(s): VP, NECSL and NECSL PMO

Target Completion Date: March 31, 2020 and monthly through service launch transition period.

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Conclusion

Management is acutely aware of the delivery schedule and the risks associated with any delays to the current plan. The visibility, the magnitude, and the importance of this program are unmatched in recent Amtrak history. As such, contingency planning efforts, as previously discussed, are well underway and will continue to evolve throughout the course of the A21 program. The Program Sponsor/VP NECSL, Trainset PMO, the NECSL PMO have largely demonstrated that they are employing appropriate efforts to maintain the highest levels of coordination and collaboration and to date, no delays are tied to any gaps or lapses in program management or communication.

There remains an extraordinary amount of work ahead and Amtrak management is confident that the proper resources are aligned to deliver this ambitious program on scope, schedule, and budget. To ensure the highest level of transparency on all matters related to the program as we enter this pivotal year, Amtrak will continue to provide the OIG, the US DOT, FRA, Congress, and all stakeholders with regular updates and reports on the status of the program.

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APPENDIX C

Abbreviations

EPMO	Enterprise Program Management Office
FRA	Federal Railroad Administration
IT	Information technology
NEC	Northeast Corridor
OIG	Amtrak Office of Inspector General
the company	Amtrak

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APPENDIX D

OIG Team Members

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Alison O'Neill, Communications Analyst

OIG MISSION AND CONTACT INFORMATION

Mission

The Amtrak OIG's mission is to provide independent, objective oversight of Amtrak's programs and operations through audits and investigations focused on recommending improvements to Amtrak's economy, efficiency, and effectiveness; preventing and detecting fraud, waste, and abuse; and providing Congress, Amtrak management, and Amtrak's Board of Directors with timely information about problems and deficiencies relating to Amtrak's programs and operations.

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