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Subcommittee on Financial and Contracting Oversight
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The Success of FAA's Air Traffic Controller Optimum Training Solution Relies on Sound Contracting and Program Management Practices

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Chairman McCaskill, Ranking Member Johnson, and Members of the Subcommittee:

Thank you for inviting me here today to testify on the Federal Aviation Administration's (FAA) $859-million Air Traffic Control Optimum Training Solution (ATCOTS) contract. The contract was intended to provide up to 10 years of support to train approximately 17,000 new air traffic controllers FAA planned to hire. However, since the contract was awarded in September 2008, we have identified significant weaknesses that undermine efforts to meet three key ATCOTS goals: reduce training costs, reduce training time, and leverage training innovations to make the training program more efficient. In addition, FAA exhausted the contract's 5-year base funding 1 year earlier than planned after experiencing cost overruns totaling about $89 million.

Our reviews have identified four primary weaknesses that undermine FAA's efforts to achieve its ATCOTS training goals and to maintain a sufficient cadre of fully trained air traffic controllers. Those weaknesses concern (1) training requirements, (2) training innovations, (3) use of award and incentive fees, and (4) contract oversight.

IN SUMMARY

FAA has yet to clearly define its controller training requirements for the ATCOTS contract, including the number of controllers who will need to be trained and the types of training needed. Without clearly defined training requirements, FAA cannot develop realistic estimates of its controller training costs or hold the contractor accountable for desired outcomes. FAA also has not provided sufficient contract funding for training innovations—even though the contractor's proposal was dependent on training innovations to stay within proposed costs, which were 29 percent lower than FAA's estimates. Further, FAA paid over $17 million in award fees and $14 million in incentive fees that were not effective in motivating the contractor to achieve desired outcomes. While FAA has taken certain actions to improve program and contract oversight—such as implementing a tool to better prioritize where training is needed and consolidating training operations under one office—FAA has not adequately maintained ATCOTS contract files or effectively communicated with contract oversight staff at air traffic facilities regarding contract management issues, such as instructor staffing reductions and program office roles and responsibilities.

BACKGROUND

ATCOTS is a performance-based[1] contract that includes cost-plus-incentive-fee, cost-plus-award-fee, and firm-fixed-price components. The contract consisted of a 5-year base

[1] Performance-based contracting lets Government agencies acquire services using contracts that define what is to be achieved, not necessarily how the work is done. The idea is that contractors have the freedom to define how they will achieve the objectives, which allows them to use innovative approaches.

period, worth $437 million, and two option periods (a 3-year period and a 2-year period), worth $422 million. The ATCOTS contract outlines six key training goals: (1) improve quality and consistency of training, (2) reduce training costs, (3) reduce training time, (4) leverage best practices and innovation to provide comprehensive training, (5) develop flexible training that can be adapted to meet changing requirements, such as new Next Generation Air Transportation System (NextGen) systems, and (6) develop flexible training that can be adapted around candidate competencies.

Under the terms of the contract, the contractor provides classroom and simulator instruction, course and curriculum development, and administrative and program support services at the FAA Academy and air traffic facilities nationwide primarily for new and developmental[2] controllers. The contractor also provides proficiency and specialized training to Certified Professional Controllers (CPC).[3] In addition, the contractor must train Certified Professional Controllers in Training (CPC-IT)—controllers who are already certified but require site-specific training when they transfer to different facilities or move to different areas within a facility. FAA retains control for the overall training program as well as for recruiting and hiring controller candidates and conducting on-the-job training[4] at air traffic facilities.

In September 2010, we reported that FAA's weak acquisition practices—including a failure to clearly define requirements and a lack of effective contract oversight—contributed to cost overruns of $46 million in the first 2 years of the program.[5] At the Chairman's request, we initiated a follow-up review of the ATCOTS contract. In our report issued in December 2013,[6] we determined that FAA exhausted the contract's 5-year base funding after 4 consecutive years of cost overruns totaling about $89 million. As a result, 1 year of training support was eliminated from the contract. During our audit, we met with the FAA Acting Administrator in July 2012, to discuss our concerns that the contract was about to run out of funds. FAA ultimately exercised the first 3-year option period to continue training; however, FAA did not evaluate its additional training requirements for that period.

[2] Developmental controllers are newly hired controllers that have graduated from the FAA Academy and been assigned to air traffic facilities for field training (classroom and lab instruction and on-the-job training).
[3] CPCs are controllers who have been certified on all areas within their assigned location.
[4] On-the-job training occurs when a developmental controller is directing live traffic one-on-one with a CPC. This training begins after developmental controllers complete ATCOTS-related classroom and simulator training.
[5] *FAA's Air Traffic Controller Optimum Training Solution Program: Sound Contract Management Practices Are Needed To Achieve Program Outcomes* (OIG Report Number AV-2010-126), Sept. 30, 2010.
[6] *FAA Needs To Improve ATCOTS Contract Management To Achieve Its Air Traffic Controller Training Goals* (OIG Report Number ZA-2014-018), Dec. 18, 2013.

LACK OF WELL-DEFINED TRAINING REQUIREMENTS CONTINUES TO IMPEDE FAA'S EFFORTS TO ESTIMATE COSTS AND REDUCE TRAINING TIMES

Since our September 2010 report, FAA has taken some steps to better assess training needs, such as use of enhanced program management tools to better prioritize where training is needed. However, FAA has yet to clearly define its controller training requirements or determine the number of controller training hours needed—recommendations we made in 2010.[7] Without clearly defined training requirements, FAA cannot develop realistic estimates of its controller training costs or hold the contractor accountable for desired outcomes. The lack of well-defined requirements has also contributed to increases in the time it takes to train controllers.

FAA Has Yet To Clearly Define Its Controller Training Requirements

Within the first year of the ATCOTS contract, it became clear that FAA had greatly underestimated its developmental and CPC training needs and had not anticipated the impact of new training requirements, such as those needed for the introduction of new NextGen systems into the National Airspace System. For example:

- During the first year, the ATCOTS contractor estimated that a total of 5,620 developmental controllers needed training—41 percent more than FAA's original pre-award estimate of 4,000 total developmental controllers. As a result, the contractor was required to train significantly more controllers than expected;

- FAA's original requirements did not quantify the number of CPC-ITs who required training. Over 600 CPC-ITs required training in 2009—a number that grew to over 1,100 in 2012—which increased the number of training hours the contractor was expected to provide.

Consequently, the ATCOTS contract costs grew by 35 percent during the first year alone. However, FAA has still not yet clearly defined its total controller training requirements. For example, the ATCOTS contract requires the contractor to provide proficiency training on both new and existing air traffic controller systems,[8] but FAA has not quantified these requirements. As a result, the contractor's proposal did not include sufficient training hours for new systems—such as the En Route Automation Modernization, a key NextGen program—which required 77,736 hours of training during the first contract year.

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[7] Specifically, we recommended that FAA determine (1) if the existing contract mechanism could be effectively modified to achieve ATCOTS program goals within the original contract estimate of $859 million or (2) update the cost estimates and requirements for its training needs and develop criteria for determining whether the Agency should exercise options in the contract.

[8] These systems include En Route Automation Modernization, Standard Terminal Automation Replacement System, and Automatic Dependent Surveillance-Broadcast.

In September 2010, we reported that FAA's Annual Work Plan (AWP)—a tool for identifying and reporting training needs to the contractor—did not adequately capture FAA's training requirements. Since we issued that report, FAA has established additional controls to better capture training requirements. For example, FAA has improved its AWP, which now defines the number and types of students, student training levels, training locations, and the dates by which students must be trained. FAA also created a tool to better verify training hours being incurred at individual air traffic facilities. However, the AWP still does not capture all of FAA's training requirements, such as proficiency training requirements for both new and existing systems. Without a sound AWP or clearly defined training requirements, FAA remains at risk for underestimating its training costs.

Increases in Training Requirements Have Contributed to Cost Overruns

Without clearly defined requirements that include all of FAA's air traffic controller training needs, FAA could not develop a realistic estimate of its training costs to ensure that sufficient funding is available for training. For 4 consecutive years, ATCOTS experienced cost overruns totaling about $89 million, which exhausted the contract's 5-year base funding in 4 years. Specifically, FAA chose to exercise the contract's first 3-year option period 1 year ahead of time to continue training support when the base period funding ran out, reducing the contract's total performance period by 1 year.

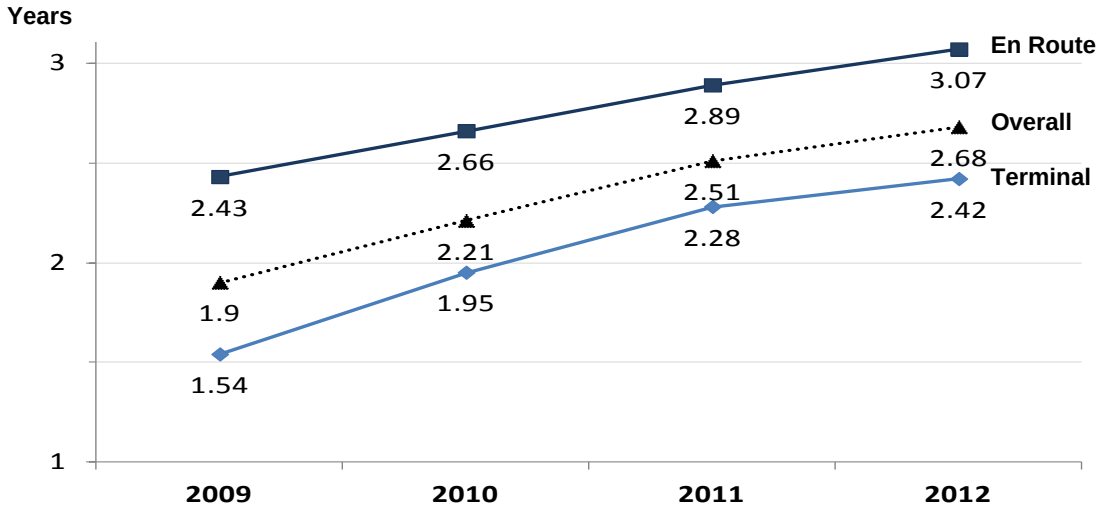
To limit future cost overruns on the ATCOTS contract, the contractor reduced contractor training staff by about 44 percent—from 1,312 to 738 employees—between September 2008 and August 2012. To compensate for this reduction, FAA plans to increase the amount of internal training performed by CPCs. FAA acknowledged that the contractor can provide training at a lower cost than CPCs, who are paid higher salaries than contractor staff. In addition, internal training may also lead to increases in CPC overtime pay. CPC overtime costs can include overtime hours for CPCs conducting training as well as overtime hours for CPCs taking on the controller responsibilities of those taken off the floor to conduct training.

However, FAA does not account for its total internal training costs. For example, FAA only tracks costs associated with time CPCs spend conducting on-the-job training. FAA does not account for the costs of using CPCs to conduct classroom and simulator training or the associated backfill overtime costs to replace CPCs on the control room floor. As a result, FAA cannot truly assess whether there might be a more cost-efficient way to provide training to its air traffic controllers.

Controller Training Times Have Significantly Increased

Between fiscal years 2009 and 2012, the time to certify controllers increased by an overall average of 41 percent—taking 9 months longer on average to certify each controller. While average training times are the longest at en route facilities,[9] certification times increased the most at terminal facilities, with an average increase of 57 percent, or almost 11 months longer on average to certify controllers (see figure 1).

Figure 1. Average Time To Certify Controllers Between Fiscal Years 2009 and 2012



Source: FAA training data

Air traffic and training managers attribute the increased training times to decreased contractor support; increases in training requirements, including training related to airspace redesign and new technology; and increased proficiency training and refresher training for CPCs in response to changes in regulations.

FAA facility managers we spoke with also warn that contractor staffing reductions may further increase training delays. While officials from FAA's ATCOTS program office told us that lower hiring and retirement rates have reduced the Agency's overall training needs, more than half of the managers at 13 air traffic facilities we contacted believe they do not have the capacity to provide internal training, given current staffing levels and workload demands. Further, FAA has not collected data on whether facilities have the capacity to provide training, especially at high-traffic facilities. If CPCs are not immediately available to teach, there may be training backlogs.

[9] En route facilities manage high-altitude air traffic. Terminal facilities vary in complexity and manage air traffic in and around airports.

TRAINING INNOVATIONS INTENDED TO REDUCE COSTS HAVE NOT BEEN ACHIEVED

FAA's independent Government cost estimate determined that the 10-year ATCOTS contract would cost $1.2 billion—nearly $358 million, or 29 percent, more than the contractor's proposed costs. To close this gap, the ATCOTS contractor planned to implement training innovations—such as pilot programs for new capabilities to reduce training time and cost, and a proposed "hub and spoke" system to provide services at multiple locations.

Prior to award, FAA's technical management evaluation team determined that the contractor's proposed costs were unrealistic and concluded that there was a 60- to 80-percent likelihood that training needs would not be achieved. However, FAA's source selection board did not require the contractor to revise its proposal and ultimately determined that the contractor could overcome weaknesses in its proposed approach.

However, FAA budgeted less than 2 percent of the ATCOTS base contract value for training innovations—a key factor for reducing costs. The contractor's lower bid was based on the assumption that it could reduce training hours by 30 percent by implementing training innovations. In practice, the $16.7 million that FAA dedicated for training innovation proved insufficient to adequately implement the contractor's innovation ideas. According to the contractor, FAA rejected the majority of the 11 proposals it submitted for training innovations. FAA officials told us that the contractor's process improvement and training innovation proposals were technically deficient and too costly. Instead, FAA used most of the budget associated with innovation to implement the Agency's innovations rather than the contractor's.

The lack of training innovations is particularly problematic given the need to make large-scale, technological improvements to the training program and train controllers on future NextGen technologies. FAA facility managers stated that the introduction of NextGen technologies has substantially increased controller training requirements. Without training innovations that can be adapted to new technologies, the arrival of future NextGen systems may lead to additional training backlogs.

FAA HAS NOT EFFECTIVELY USED AWARD AND INCENTIVE FEES TO HOLD THE CONTRACTOR ACCOUNTABLE FOR ACHIEVING DESIRED OUTCOMES

FAA has not leveraged contract incentives to hold the contractor accountable for achieving desired outcomes. Specifically, FAA paid the contractor over $17 million in award fees and paid another $14 million in incentive fees despite 4 consecutive years of cost overruns totaling about $89 million.

The ATCOTS contract allows the contractor to earn both incentive fees and award fees for containing costs, a practice that is inconsistent with FAA's Acquisition Management System (AMS) guidance. AMS states that care must be exercised to ensure that combinations of cost-control award and incentive fees do not result in contractors making trade-off decisions inconsistent with FAA's objectives. In addition, FAA's Award Fee Contracting Guidance states that no performance element—such as cost—should be incentivized more than once. Contrary to its guidance, FAA paid the contractor $5 million in cost-related award fees and $14 million in incentive fees despite 4 consecutive years of significant cost overruns. The incentive fees were not effective at controlling costs because FAA continually increased target costs. However, FAA's AMS states that an incentive fee should only be used when a reasonable and attainable cost target can be established.

In addition to cost-related award fees, the Agency paid another $12.3 million in award fees that were intended to motivate the contractor to achieve FAA's training goals but sometimes forced the contractor to make trade-off decisions inconsistent with other goals. For example, FAA paid the contractor a portion of the award fee for meeting a performance measure related to staffing efficiency, which called for the contractor to stay within a set range of staffing hours. However, the contractor stated that it was not motivated to optimize staffing or lower staffing costs because any efforts to reduce staffing below the set range of hours would have lowered its award fee in this category.

In September 2012 (the beginning of the first option period), FAA introduced a new award fee structure for controlling costs that requires the contractor to make trade offs that defeat the contract's larger goal of providing sufficient controller training. Specifically, the new structure provides that FAA will not pay the contractor any award fees if (1) contract costs exceed the cost target or (2) the contractor does not deliver sufficient training. However, in April 2012 the contractor decreased its instructor staffing to avoid exceeding cost targets and, therefore, could not provide sufficient training support. As a result, FAA did not pay the contractor an award fee for any performance measure for this period. This represents an ineffectively designed measure because it offset the ability to motivate the contractor to achieve various quality, cost, and schedule objectives for the contract. Specifically, if the contractor pays the amount needed to

ensure training levels, then it is penalized for exceeding cost targets. Conversely, if the contractor remains within cost targets, then it is penalized for not meeting training levels. An effective contract award structure requires each contract goal to be separately measured and incentivized without impeding the achievement of other measures.

FAA HAS NOT PROVIDED ADEQUATE CONTRACT OVERSIGHT

While FAA has taken certain actions to improve program and contract oversight, such as implementing a tool to better prioritize where training is needed and consolidating training operations under one office, oversight weaknesses remain. Specifically, FAA has not adequately maintained ATCOTS contract files or effectively communicated with FAA contract oversight staff at air traffic facilities who help manage the contract.

In September 2010, we reported that FAA did not have controls to ensure it received services billed by the contractor. During the first year of the contract, the ATCOTS program office authorized payment for 11 contractor invoices, totaling $45 million, without the FAA Academy verifying whether the services billed were actually provided. Since our 2010 report, FAA has made some improvements to its oversight controls and contract administration. For example, FAA reorganized and consolidated training operations under one office and implemented a tool to better prioritize where training is needed. In addition, an FAA program representative stated that the Agency has implemented the following improvements in contract management:

- Implemented performance and cost boards to monitor contractor performance;
- Required the contractor to provide more detail about the costs incurred, improving invoice review procedures; and
- Required the contractor to reorganize its management structure to reduce inefficiency.

Despite these reported actions, other weaknesses persist. For example, FAA has not adequately maintained contract files, which exist in two separate locations and do not contain a complete history of all contract actions. Complete contract files allow newer staff to readily access and understand the contract's complete history, which has proven especially important for ATCOTS given the high turnover in critical program staff that the program has experienced. Since September 2010, FAA has completely re-staffed its ATCOTS program office and contract management office. In total, the ATCOTS program has had four program managers, six contracting officers, and eight contracting officer representatives since the contract award, making it all the more critical to have complete contract files.

FAA's ATCOTS program office depends on FAA contract oversight staff at individual air traffic facilities to help manage the contract, but during this review we determined that

the program office does not effectively communicate with the facilities or provide adequate oversight on matters such as staffing reductions and expectations about program office roles and responsibilities. Many facility managers did not know who managed the ATCOTS program and were not always provided with detailed guidance. Moreover, FAA's ATCOTS program office did not enforce the requirement that FAA contract oversight staff conduct semi-annual evaluations of the contractor's performance. The lack of evaluations prevents the program office from identifying problems and taking appropriate corrective actions.

Finally, FAA has yet to perform an integrated baseline review (IBR) of the ATCOTS program, despite cost overruns and limited training delivery. An IBR can help agencies pinpoint problems and make decisions on the amount of services required and additional funding needed to obtain them. Specifically, an IBR examines whether (1) all program requirements have been addressed, (2) all risks have been identified and appropriate mitigation plans are in place, and (3) planned resources are sufficient to complete the work. Without an IBR, it will be difficult for FAA to determine whether it can achieve its air traffic controller training goals under the current ATCOTS contract.

Last month, we issued our audit report updating the status of the ATCOTS contract. In its response to our report, FAA generally agreed with our recommendations and stated that it has begun taking actions to address them. For example, FAA stated that it rolled out a new training planning tool and designated two quality reliability officers to provide surveillance. However, we are requesting further information from the Agency to verify whether these actions meet the intent of our recommendations. Additionally, FAA announced that it plans to award a new contract to replace ATCOTS as early as fall 2014. To avoid repeating the problems with ATCOTS, FAA will need to ensure that it completes an IBR and clearly defines its training requirements before awarding the new contract—one of the recommendations from our December report. Since FAA recently stated its intentions to address our report recommendations, we will continue to monitor FAA's progress in implementing them and provide this Committee, the Secretary, and FAA with future updates on the ATCOTS program.

That concludes my statement Chairman McCaskill and Ranking Member Johnson, I will be happy to answer any questions you or the other Members of the Subcommittee may have.