
Office of Inspector General

Audit Report

FAA NEEDS TO STRENGTHEN ITS RISK ASSESSMENT AND OVERSIGHT APPROACH FOR ORGANIZATION DESIGNATION AUTHORIZATION AND RISK-BASED RESOURCE TARGETING PROGRAMS

Federal Aviation Administration

Report Number: AV-2011-136

Date Issued: June 29, 2011





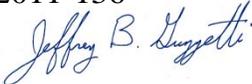
Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **INFORMATION:** FAA Needs To Strengthen Its
Risk Assessment and Oversight Approach for
Organization Designation Authorization and Risk-
Based Resource Targeting Programs
Federal Aviation Administration
Report Number AV-2011-136

Date: June 29, 2011

From: Jeffrey B. Guzzetti 
Assistant Inspector General
for Aviation and Special Program Audits

Reply to
Attn. of: JA-10

To: Federal Aviation Administrator

The Federal Aviation Administration (FAA) is responsible for overseeing numerous aviation activities designed to ensure the safety of the flying public. Recognizing that it is not possible for FAA employees to personally oversee every facet of aviation, public law¹ allows FAA to delegate certain functions, such as approving new aircraft designs, to private individuals or organizations. Designees perform a substantial amount of critical work on FAA's behalf—for example, at one aircraft manufacturer, they made about 90 percent of the regulatory compliance determinations for a new aircraft design.

FAA created the Organization Designation Authorization (ODA) program in 2005 to standardize its oversight of organizational designees.² ODA was fully implemented in November 2009 when FAA required all delegated organizations to transition to the new ODA policy. FAA also deployed its Risk Based Resource Targeting (RBRT) system in 2007 to assist FAA engineers in deciding which aircraft certification projects represent the highest risk and therefore need more FAA oversight.

Representative Daniel Lipinski requested that we review these two aircraft certification initiatives. He expressed concern that ODA allows companies to

¹ 49 U.S.C. § 44702.

² Organizational designees are companies (e.g., aircraft manufacturers) that FAA has approved to perform certain functions on its behalf, such as determining compliance with aircraft certification regulations. The organization is responsible for overseeing the employees who perform the delegated functions.

choose individuals who perform work on behalf of FAA³ with little or no FAA oversight and that RBRT precludes certification engineers from reviewing projects that are deemed low or medium risk. He was also concerned that these two programs were not in compliance with current laws and regulations.⁴ Accordingly, our audit objectives were to determine (1) the role FAA plays in the selection process for individuals who perform work under the Agency's ODA program, (2) the adequacy of FAA's oversight of the program, and (3) the effectiveness of FAA's RBRT program.

We conducted this review between August 2009 and May 2011 in accordance with government auditing standards prescribed by the Comptroller General of the United States. We visited aircraft manufacturers and FAA Aircraft Certification Offices (ACO)⁵ for both small and transport category airplanes. Due to the nature of Representative Lipinski's request, we focused on delegated organizations that approve new aircraft designs (type certification) and changes to existing designs (supplemental type certificates). An air transportation consultant assisted us in assessing the effectiveness of ODA and RBRT. Exhibit A details our scope and methodology. Exhibit B lists the entities we visited or contacted.

RESULTS IN BRIEF

Under the ODA program, FAA has significantly reduced its role in approving individuals who perform work on FAA's behalf by further delegating this approval to private companies (e.g., aircraft manufacturers). Under previous forms of organizational delegation, FAA approved each appointment of personnel working for these companies. Now, once the Agency approves the company's selection process, ODA company representatives select these personnel, known as unit members, without FAA concurrence. While FAA maintains some involvement with the selection process during an ODA holder's first 2 years, it is unclear how FAA will be involved beyond that timeframe. Because FAA has not provided clear, written guidance on how to oversee unit member appointments, there are inconsistencies in how ACOs interpret FAA's role and track unit members and in how manufacturers select those personnel. For example, only three of the five ACOs we visited consulted an FAA database to pre-screen prospective unit members' performance histories, and FAA engineers in the field expressed confusion about whether this check would continue beyond an ODA's first 2 years. With less FAA involvement in the selection process, there is also potential risk that an ODA company could appoint unit members with inadequate qualifications or a history of poor performance to approve certification projects.

³ Under ODA, these individuals are known as unit members.

⁴ Based on our review, we did not find any conflict with 49 U.S.C. § 44702 and 14 C.F.R. Part 21.

⁵ FAA offices responsible for engineering oversight of aircraft manufacturers.

While the ODA program is relatively new, we identified potential vulnerabilities in FAA's oversight and training. Beyond the change in the unit member selection process, FAA's ODA oversight methods (e.g., initial project review, site visits, and technical evaluations) are similar to those used for past forms of organizational delegations. Therefore, FAA will likely face many of the same challenges with ODA. Past FAA audits discovered "after the fact" that delegated organizations had either neglected a critical rule or did not properly demonstrate compliance, calling into question how adequately FAA reviews new engineering project plans submitted by delegated organizations. For example, during initial project review, an FAA engineer failed to detect that a manufacturer's certification plan did not demonstrate compliance with specific aviation regulations governing design and construction of aircraft flight controls. Under ODA, FAA engineers will also have expanded enforcement responsibilities, but the Agency has not ensured that they are adequately trained to perform these duties. As a result, FAA engineers may not detect and enforce all regulatory noncompliances.

Finally, RBRT has not been effective for measuring risk and directing FAA engineers' oversight efforts to high-risk projects because it relies on subjective input from engineers, does not contain detailed data, and has experienced repeated technical difficulties. Engineers reported numerous problems with the system, including a tendency to identify projects as low risk regardless of inputs that suggested higher risk factors, such as a lack of company experience with the design. FAA removed RBRT from active use in August 2009 to undergo revisions identified during its pilot phase. FAA plans to reintroduce RBRT in late fiscal year (FY) 2011. In the interim, FAA engineers will continue to determine which projects to review using subjective judgment.

We are making a series of recommendations to FAA to improve its oversight of ODA programs and the RBRT system.

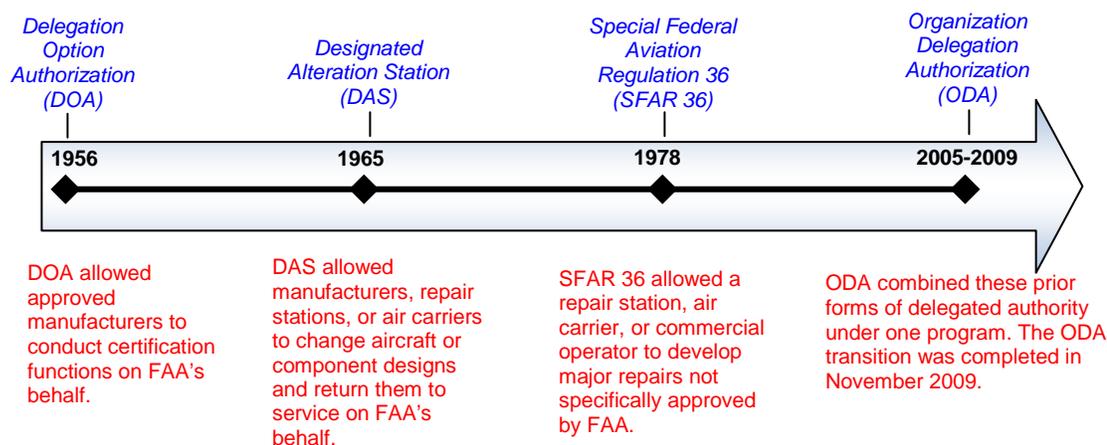
BACKGROUND

Historically, FAA has relied on a variety of organizational or individual designee programs to meet its responsibility to hold the aviation industry accountable to its safety standards. A designee can be a person or an organization who witnesses inspections or tests on FAA's behalf. For example, one type of designee is known as a Designated Engineering Representative (DER).⁶ To gain FAA approval of a new aircraft design, a manufacturer must demonstrate compliance to hundreds of detailed Federal Aviation Regulations. FAA has the option to thoroughly examine test data, accompanying analysis, and conclusions of DER approvals; spot check a few calculations or data points; or simply accept the report at face value.

⁶ DERs are non-FAA employees authorized to approve information related to aircraft structure, engines, power plants, propellers, flight characteristics, systems, and equipment on behalf of FAA.

Organization Designation Authorization: Since 1956, FAA has developed various forms of organizational delegation to meet specific needs. In 2005, FAA created the ODA program to consolidate these types of organizational delegations under one program and standardize oversight.⁷ By November 2009, all 67 companies that had applied for ODA had completed the transition as required by FAA. As of November 2010, there were 84 authorizations at air carriers, aircraft manufacturers, repair and maintenance facilities, and aircraft modification companies. Figure 1 illustrates the development of organizational delegation.

Figure 1. Development of Organizational Delegation



Source: OIG analysis of various FAA documents

By implementing ODA, FAA has reduced the numbers of both organizational delegations and individual designees. According to FAA, managing an organization is more efficient than managing the activity of many individual designees. Table 1 details changes in the number of individual and organizational designees since 2004.

⁷ The ODA program is authorized in the Code of Federal Regulations, 14 C.F.R. Part 183, and FAA steps for approving ODA programs are governed by internal FAA policies.

Table 1. Change in the Number of Engineering and Manufacturing Designees

Individual Designees	May 2004	November 2010
Designated Engineering Representatives	2,725	2,052
Designated Manufacturing Inspection Representatives	1,249	1,181
Designated Airworthiness Representatives	359	422
TOTAL	4,333	3,655
Organizational Designees	May 2004	November 2010
Organizational Designated Airworthiness Representatives	86	0
Designated Alteration Station	31	0
Delegation Option Authorization	6	0
Special Federal Aviation Regulations No. 36	12	0
Organization Designation Authorization	0	84
TOTAL	135	84

Source: OIG analysis of FAA data

Risk Based Resource Targeting: In September 2007, as another way to leverage limited FAA engineering resources, FAA implemented a policy to allow RBRT in deciding which new engineering projects to review. RBRT is a process that evaluates the risk associated with non-compliance with FAA regulations that govern six “business processes” FAA oversees, including aircraft or aircraft component design.

Using a series of assessment questions, FAA inspectors and engineers rate the likelihood and severity of the risk of the organization failing to comply with FAA regulations. This risk assessment is expressed as a number from 1 to 5 and characterized as low, medium, or high. The higher the risk, the more direct FAA oversight of the project or activity is recommended.

UNDER ODA, FAA HAS DELEGATED A SIGNIFICANT PORTION OF ITS PERSONNEL SELECTION AUTHORITY TO PRIVATE COMPANIES

FAA’s role in selecting unit members will gradually decline under the 2009 ODA policy, as ODA holders can start selecting unit members without FAA’s input 2 years after receiving their approval. Also, we identified inconsistencies in how ACOs interpret policy on unit member screening requirements and in how they track unit members. Further, at one of the three manufacturers we visited, where FAA allowed an ODA company to proceed with self-selection, problems arose that demonstrate the challenges FAA may face as its role in unit member selection declines.

FAA's Role in Selecting Personnel Who Perform Work on Its Behalf Will Decline Over Time

Under the ODA program, FAA has significantly reduced its role in approving individuals who perform work on its behalf by delegating this approval to private companies (e.g., aircraft manufacturers). Under previous forms of organizational delegation, FAA approved each appointment of personnel working for these companies. Now, ODA company representatives select these personnel, known as unit members, without FAA concurrence once the Agency approves the company's selection process. FAA's ODA policy calls for a 2-year period before the ODA holder can self-select unit members. However, it also permits FAA to allow an ODA holder to proceed with self-selection sooner *if the company has demonstrated a capability to do so*.

Implementation and Interpretation of FAA's Role in the Unit Member Selection Process Is Inconsistent Across FAA

FAA's ACO personnel are not consistently pre-screening prospective unit members' performance histories and have different interpretations of how long to continue pre-screening after the ODA holder is granted approval. We found this is largely due to a lack of clear guidance on FAA's ODA policy.⁸ FAA engineers and managers at the five ACOs we reviewed expressed confusion over the need for pre-screening. First, only three of the five ACOs used FAA's Designee Information Network (DIN) to pre-screen unit members' performance histories. The DIN is a system for tracking all aircraft certification designees and delegations so ACOs can look for any prior negative experience with the individual in question and share the information with the ODA holder. Second, some FAA program managers we met with asserted that pre-screening will continue beyond the 2-year phase while FAA engineers in the field stated that pre-screening is only required for the first 2 years. If proposed unit members are not screened, an individual with a history of poor performance as a DER could be authorized to perform critical aircraft certification functions.

Finally, FAA's ACOs are not consistently tracking (i.e., collecting and maintaining data on) unit member performance because there is no FAA policy requiring them to do so. One ACO we visited tracks ODA unit members by name in the DIN, while others did not track them at all. FAA Headquarters officials state that they would not allow an individual designee with poor past performance to serve as a designee or ODA unit member. However, if these ODA employees are not tracked by name, it is unclear how FAA or the ODA will know if a prospective unit member has a poor performance history. This lack of visibility into the background of prospective unit members will further diminish FAA's

⁸ FAA Order 8100.15 contains the policy guidance for implementing ODA.

ability to conduct effective oversight of ODA companies and their unit member selection process.

FAA's Process Does Not Prevent ODAs from Selecting Unit Members With Past Performance Problems

While FAA has the authority to remove unit members based on performance issues, its guidance does not clearly define how individual offices should do so. We identified instances in which FAA did not act quickly to remove questionable unit members and appointed an individual to a key ODA position despite FAA engineers' objections. FAA is losing the direct supervisory connection it historically relied on with DERs; as a result, there is a greater risk that individuals with a history of poor performance could continue to carry out critical aircraft certification functions.

For example, FAA engineers cited troubling performance issues with a unit member and insisted that the manufacturer remove his authority to perform work under the ODA. FAA engineers were concerned with the unit member's integrity because he was advocating a position that directly opposed FAA rules on an aircraft fuel system in favor of the manufacturer. Specifically, the unit member determined that an aircraft type was in compliance with FAA fuel system rules but ignored other language in the rules that, according to FAA engineers, made it clear that the aircraft type did not comply. According to ODA regulations, when acting as a representative of FAA, the ODA is required to perform in a manner consistent with FAA policies, guidelines, and directives. When performing a delegated function, designees are legally distinct from and act independent of the organizations that employ them. The manufacturer disagreed with the FAA engineers' assertions but, after nearly a year of discussions, temporarily suspended the unit member's authority. During that year, the unit member continued to approve certification data on FAA's behalf. After our visit, FAA took action to permanently remove the unit member.

In another instance, the manufacturer sought input from FAA on whom to appoint to a key ODA position. However, according to FAA engineers, the person that FAA managers ultimately approved was the one who received the most objections from the FAA engineering staff.

The manufacturer also promoted a prior DER to a first-level ODA management position despite a considerable record of negative feedback from FAA. FAA performance evaluation records noted that he showed a consistent lack of integrity, unsound judgment, and an uncooperative attitude towards FAA. FAA noted that this person should never be considered for appointment as a representative or authority in any assignment on behalf of FAA or within the company's delegated organization. Yet, according to FAA engineers we spoke with, the company

hoped to eventually promote this individual to ODA Administrator—the company employee with overall responsibility for the ODA and its unit members.⁹

FAA HAS NOT ADDRESSED OVERSIGHT OR TRAINING WEAKNESSES THAT COULD IMPACT THE ODA PROGRAM

Weaknesses in FAA’s oversight of past forms of delegated authority and in ODA transition training could prevent successful ODA implementation. Our review indicated that FAA audits¹⁰ of prior forms of FAA’s delegated authority (before ODA) revealed lapses in FAA’s initial review of engineering projects. Inadequate ODA transition training resulted in FAA engineers being unprepared to carry out their expanded oversight and enforcement responsibilities under ODA. As a result, FAA engineers may not detect and enforce all regulatory noncompliances.

OIG Review of Prior FAA Audit Findings Show Lapses in Initial Oversight of Aircraft Design and Modification

FAA’s past audits of manufacturers that held prior forms of delegated authority—which are now ODA holders—identified instances of non-compliance with regulations after these companies had certified aircraft components as compliant. Our analysis of FAA audit findings from 2005 to 2008 disclosed 45 instances that indicated FAA had *not* carefully reviewed the certification plan in advance. This upfront review of the certification plan is a key component of FAA oversight of engineering projects. For example:

- A manufacturer did not have evidence that critical tests on a new aircraft engine component were ever performed.
- A manufacturer’s certification plan did not indicate that it complied with specific aviation regulations governing design and construction of aircraft flight controls.
- A manufacturer did not comply with regulations addressing the supplemental oxygen system for passengers and crew or emergency evacuation and escape routes.

These “after the fact” findings raise questions about the effectiveness of FAA’s initial oversight of certification plans that the ODA holder submits. FAA’s ODA policy requires engineers to perform one supervisory visit to companies they oversee per year and a more comprehensive technical audit every 2 years.

⁹ As of January 2011, this individual has not been appointed as the ODA Administrator.

¹⁰ FAA completed the transition to ODA in November 2009. Since technical audits of ODA performance are conducted every 2 years, we did not have enough examples under ODA from which we could draw conclusions about the quality of FAA oversight.

Therefore, it can be a year or longer before FAA engineers perform additional oversight through an annual visit or a technical audit.

FAA Has Not Adequately Prepared Its Engineers To Carry Out Their Expanded Enforcement Responsibilities Under ODA

FAA has not ensured that its engineers are adequately trained to manage oversight of the ODA program. Under ODA, FAA's certification engineers have increased capability to cite companies with violations of the Federal Aviation Regulations when an ODA holder does not comply with its FAA-approved ODA procedures manual. FAA engineers can now initiate an enforcement action for non-compliance with the procedures manual, which could lead to civil penalties. This is an important change from prior forms of delegated authority in which most non-compliance issues related to the procedures manual were not regulatory violations.

However, FAA managers and engineers cited concerns to us that they never received training or that FAA's training course does not fully inform them of their responsibilities under ODA. For example, engineers stated that they had no past experience in compliance and enforcement activities and were unsure of their role in any enforcement activities. One engineer even stated that he does not have any compliance and enforcement responsibility under ODA. Also FAA's training is geared toward Flight Standards and manufacturing inspectors—not engineers, who will be overseeing ODA holders. Engineers working within FAA's new oversight organization for large ODA holders with multiple certification locations also expressed concerns. These engineers, as well as ACO engineers, told us that this new oversight concept has been poorly communicated, leaving them uncertain about their role.

RBRT HAS NOT BEEN EFFECTIVE IN ASSESSING ENGINEERING PROJECT RISK

RBRT does not contain detailed data, such as accidents, to assess the risk of noncompliances with regulations, and engineers do not accept the RBRT process due to numerous technical difficulties. RBRT contains risk assessment formulas based on experts' opinions rather than an objective, automated analysis of accident or incident data. As a result, RBRT has not been effective for measuring risk and directing engineers' oversight efforts to higher risk projects. Even if FAA is able to successfully address these shortcomings, it still must train and prepare engineers to effectively use RBRT.

RBRT Does Not Include Objective, Detailed Data

RBRT does not meet seven of nine risk assessment principles in FAA's own risk assessment policy (see table 2).¹¹ One principle is for the system to include all relevant data available. However, there is no automated mechanism to leverage data outside of the user's potentially subjective knowledge. For example, RBRT does not contain any data related to actual aviation accidents resulting from manufacturing defects. A fully developed risk-based system would be able to retrieve data directly from FAA's own accident and incident databases.

Table 2. FAA Risk Assessment Principles

FAA Risk Assessment Principles	RBRT Consistent with Principle	Comment
Scientifically Objective	No	RBRT in its current state is purely subjective
Unbiased	Yes	If the user is unbiased
Include All Relevant Data Available	No	No automated mechanism to leverage data outside users' personal knowledge
Use Default/Conservative Assumptions Only if Situation Specific Info Not Available	No	The same risk level is assigned to all regulations with no differentiation for those with direct and substantial impact to safety
Reasonably Detailed and Accurate	No	An accurate assessment is not possible given that currently all regulations are assigned the same risk rating
Address Both Severity and Likelihood	Yes	none
Quantitative to the Maximum Extent Possible	No	RBRT represents a quantitative processing of subjective judgment; however, there is little or no data-driven assessment capability
Flexible	No	The RBRT tool requires the same tedious data input for all projects regardless of relevance to safety
Assumptions Documented	No	Users are clearly not aware of assumptions fundamental to RBRT design

Source: OIG and consultant analysis of FAA data

Our analysis as well as that of our external consultant concluded that RBRT has data shortcomings. In addition to our determination that RBRT is driven by subject matter experts' opinion rather than objective data, our consultant found that RBRT risk assessments are of limited value in differentiating projects by safety risk for resource targeting. For example, when originally introduced, the system did not differentiate the potential safety impacts of noncompliance with various regulations.¹² Therefore, RBRT treated the potential impact of non-compliance with the regulation governing design of critical flight controls the same as non-compliance with the regulation requiring installation of a no-smoking decal. In another example, we reviewed a RBRT risk assessment that was rated as

¹¹ FAA Order 8040.4 defines FAA's principles for risk assessment.

¹² According to FAA officials, the system that will be reintroduced in late FY 2011 will have this capability.

low risk by RBRT even though the company involved in the assessment was a new company that would require a higher level of FAA oversight.

Further, FAA's risk assessment policy calls for a plan that identifies *specific* hazards that may be encountered in the overall certification process, analyzes the likelihood of their occurrence, and determines their severity. However, RBRT uses vague hazard statements rather than describing specific hazards that could endanger an aircraft, such as sudden depressurization or lightning strike.¹³ For example, the hazard statement for aircraft design is, "If the [aircraft design] process is not effectively completed, it may result in a non-compliant design of an aviation product (aircraft, engine, or propeller) that may contribute to the cause of a fatal accident." While identifying all hazards that put an aircraft at risk is an enormous task, it would greatly enhance RBRT's effectiveness. Although FAA has acknowledged that a risk assessment tool based upon objective data is superior to the current subjective model, it does not expect to populate RBRT with more objective data before late 2014 to 2015 at the earliest. According to FAA officials, their plan to prioritize regulations in the next release of RBRT will better define risks and hazards.

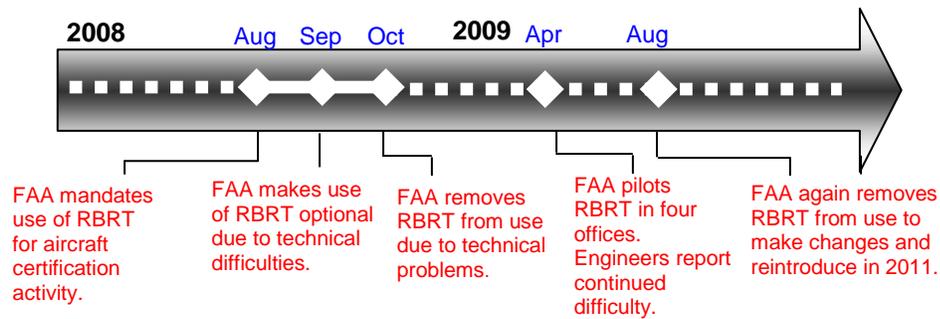
RBRT Has Experienced Significant Technical Difficulties

FAA did not ensure that the RBRT tool was fully functional before requiring its use. FAA mandated the use of RBRT for all certification activity in August 2008; however, the Agency poorly executed its deployment. Once it was in widespread use by certification engineers, the RBRT tool experienced a number of technical difficulties, including slow system functionality and system "freezes."¹⁴ Engineers stated it could take weeks to months to complete an RBRT risk assessment. After being removed and reintroduced, RBRT continued to experience technical difficulties, frustrating FAA engineers and causing FAA to take the system back offline to undergo modifications. RBRT is currently not in use, and FAA plans to reintroduce RBRT in late FY 2011. Until FAA deploys RBRT, FAA engineers will continue to determine which projects to review using only their subjective judgment. Figure 2 describes the timeline of RBRT's deployment in greater detail.

¹³ FAA defines safety hazards as a condition, event, or circumstance that could lead to or contribute to an unplanned or an undesired event.

¹⁴ According to FAA officials, the issues with slow functionality and system freezes were largely due to the lack of Information Technology (IT) capacity within FAA. Until this issue is resolved at the Agency level, IT programs will not run at optimum efficiency.

Figure 2. Timeline of RBRT Deployment



Source: OIG analysis of FAA data

FAA Has Not Effectively Prepared Engineers To Use the RBRT Tool

FAA did not effectively train engineers and managers on RBRT, which resulted in confusion among engineers we interviewed on how to implement RBRT. For example, FAA’s intent is to allow low-risk projects to be approved without a required data review—a concept known as “applicant showing only.” However, FAA did not adequately train engineers on this concept. The initial training given to engineers using RBRT consisted of briefing slides that did not fully address the engineers’ concerns regarding the level of involvement expected for each risk level. Engineers told us that they would never accept a project proposal without reviewing data.

CONCLUSION

As the aviation industry continues to expand, FAA must continue to adapt its role in oversight efforts, including the use of designees to perform work on its behalf. While FAA’s effort to reduce the number of individual designees is a good step toward efficiency, decreasing its involvement in selecting unit members is not without risk. Unless FAA has the necessary training and tools in place to conduct effective oversight, it cannot be assured that ODA organizations are fully complying with FAA’s safety requirements or that unit members are qualified to perform critical safety tasks. To best target limited oversight resources to the highest risk projects, FAA must continue efforts to develop a sound risk assessment process and inform personnel of how to utilize the system.

RECOMMENDATIONS

We recommend that FAA:

1. Revise its ODA policy to require a full 2-year transition for unit member self-selection.

2. Develop explicit guidance on the process to remove an ODA unit member in a timely fashion and require all ODA holders to include this standardized removal process in their approved ODA procedures manual.
3. Track unit member appointments in its Designee Information Network (DIN) database or another method in order to identify unit members with known performance issues and require engineers to cross-check names with the database beyond the first 2-year required timeframe.
4. Develop enforcement training and guidance that is pertinent to the unique requirements of the certification engineering discipline.
5. Improve the new oversight structure for large ODA holders by:
 - a. developing training for FAA engineers and disseminating comprehensive procedures on the new oversight structure for large ODA holders.
 - b. assessing the effectiveness of the new oversight structure before implementing it at other large ODA holders.
6. Improve the RBRT tool by:
 - a. enhancing the risk assessment process so that it uses more automated data, such as accidents resulting from manufacturing defects, to accurately differentiate higher risk projects that likely pose the most safety risk.
 - b. thoroughly testing and validating it to ensure that it is fully functional.
 - c. ensuring that engineers are properly trained before requiring its use and relying upon its results.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FAA with our draft report on May 3, 2011, and received its response on June 1, 2011. FAA's response is included in its entirety as an appendix to this report. FAA concurred or partially concurred with all of our recommendations, and its response meets the intent of most of them. However, we are concerned with the timeframe for issuing new guidance on the process for approving and tracking ODA unit members. Additionally, we are requesting that FAA expand its planned actions for recommendation 3 and clarify information regarding its actions planned for recommendation 5a.

Specifically, in response to recommendations 1, 2, and 3, FAA proposes to revise its guidance regarding the ODA transition period, procedures for unit member removal, and the requirement to cross-check names with FAA databases by September 30, 2012. However, because these recommendations affect the core tenets of the ODA program, we believe that FAA should issue interim guidance to immediately enhance its oversight until the Agency is able to issue permanent changes to its guidance. Additionally, for recommendation 3, FAA stated that it is impractical to maintain all ODA unit members in an FAA database but agreed to track unit members that have been removed due to performance-related issues. However, as we reported, unit members can experience performance issues for a prolonged period before removal. Given that poor performing unit members could leave on their own before removal, FAA should expand its action by including ODA unit members that are experiencing performance issues, but have not yet been removed. Accordingly, we are requesting that FAA provide additional planned actions and target dates for recommendations 1, 2, and 3 and consider these recommendations open and unresolved.

For recommendation 5a, FAA states that it plans to revise its policy to clarify that new offices are responsible for developing and conducting training for their staff. However, the target date for this action is not clear. Additionally, given that FAA is making individual offices responsible for enhancing training and procedures, we request that the Agency clarify how it will ensure consistency in training and procedures across these new offices. We are requesting that FAA likewise provide additional planned actions and target dates for this recommendation and consider it open and unresolved as well.

ACTIONS REQUIRED

FAA's planned actions and target dates for recommendations 4, 5b, and 6 are responsive, and we consider these recommendations resolved but open pending completion of planned actions. The remaining recommendations remain

unresolved pending further action by FAA. We request that FAA provide, within 30 days of this report, additional actions to resolve recommendations 1, 2, and 3, along with estimated target completion dates. Also, we request that FAA clarify its target date and actions to enhance training and procedures for recommendation 5a. We appreciate the courtesies and cooperation of FAA representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-0500 or Robin Koch, Program Director, at (404) 562-3770.

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cc: FAA Associate Administrator for Aviation Safety
Director, Aircraft Certification Service
Anthony Williams, AAE-001
Martin Gertel, M-1

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this audit in accordance with generally accepted government auditing standards prescribed by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that provides 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 objectives. We conducted this review between August 2009 and May 2011. We used the following scope and methodology in conducting this review.

To determine the role FAA plays in the selection process for individuals who perform work under the Agency's ODA program, assess the adequacy of FAA's oversight of the program, and evaluate the effectiveness of FAA's RBRT program, we performed audit work at 5 of 10 FAA Aircraft Certification Offices (ACOs) and manufacturers for both small and transport category airplanes. Due to the nature of Representative Lipinski's request, we focused on delegated organizations that approve new aircraft designs (type certification) and changes to existing designs (supplemental type certificates).

We interviewed aircraft certification managers and engineers at FAA Headquarters, the Mike Monroney Aeronautical Center in Oklahoma City, and ACOs. We met with management officials responsible for administration of their respective ODA programs at Bombardier-Learjet, Cessna Aircraft, and the Boeing Company and interviewed individual unit members who perform work under each company's ODA. We analyzed unit member qualifications and ODA procedures manuals for these companies. We obtained documents to analyze FAA's policies and procedures for ODA and RBRT, assessed the adequacy of completed RBRT risk assessments, and reviewed the qualifications of ODA unit members.

To assist us in assessing the effectiveness of ODA and RBRT, we contracted with TeamSAI, an air transportation consulting firm. TeamSAI assisted in our analysis and participated in meetings with several ACOs and all three aircraft manufacturers.

We met with the national certification engineering representative of the National Air Traffic Controllers Association (NATCA) to obtain the labor union's perspectives on ODA and RBRT. We also engaged OIG legal and statistical representatives for assistance in evaluating ODA and RBRT.

EXHIBIT B. ENTITIES VISITED OR CONTACTED

Federal Aviation Administration

FAA Headquarters	Washington, DC
Mike Monroney Aeronautical Center	Oklahoma City, OK
Wichita ACO	Wichita, KS
Chicago ACO	Chicago, IL
Atlanta ACO	Atlanta, GA
Los Angeles ACO	Los Angeles, CA
Seattle ACO	Seattle, WA
Transport Airplane Directorate	Seattle, WA

Aircraft Manufacturers

Cessna Aircraft	Wichita, KS
Bombardier-Learjet	Wichita, KS
The Boeing Company	Seattle, WA

Other Organizations

National Air Traffic Controllers Association (Aircraft Certification Engineers)	Chicago, IL
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EXHIBIT C. MAJOR CONTRIBUTORS TO THIS REPORT

<u>Name</u>	<u>Title</u>
Robin Koch	Program Director
Marshall Jackson	Project Manager
Mark Perrill	Senior Analyst
Taniesha Snell	Analyst
Ruth Foyere	Analyst
Andrea Nossaman	Writer/Editor

APPENDIX. AGENCY COMMENTS



Federal Aviation Administration

Memorandum

Date: **JUN 1 2011**

To: Jeffrey B. Guzzetti, Assistant Inspector General for Aviation and Special Program Audits

From: Clay Foushee, Director, Office of Audit and Evaluations, AAE-1 *Clay Foushee*

Subject: **OIG Final Report: FAA Needs to Strengthen its Risk Assessment and Oversight Approach for Organization Designation Authorization and Risk Based Resources Targeting Programs**

While organizational delegation is not new to the FAA or the aviation industry, FAA is continuing its efforts to strengthen the program, provide meaningful and consistent oversight, and ensure it addresses the most important issues relating to aviation safety. In the process of improving this program, FAA is seeking to make the most efficient use of its resources, by redeploying assets previously devoted to less constructive oversight activities, and apply a risk based framework for directing the activities of its Designees. FAA recognizes that its efforts are a work in process, and has efforts underway that will provide better training, ongoing program evaluations, and policy and information technology (IT) improvements.

RECOMMENDATIONS AND RESPONSES

Recommendation 1: Revise its ODA policy to require a full 2-year transition for unit member self selection.

FAA Response: Concur. The FAA will revise its guidance by September 30, 2012 to require the organization management team (OMT) to review selections made in the first two years or longer, if necessary. We will continue to communicate the role of the OMT in performing oversight of an ODA's unit member selection to ensure the processes are being properly established and exercised.

Recommendation 2: Develop explicit guidance on the process to remove an ODA unit member in a timely fashion and require all ODA holders to include this standardized removal process in their approved ODA procedures manual.

FAA Response: Concur. Although the FAA believes that unit member (UM) removal clearly falls under the established corrective action procedures, the FAA will add policy and procedures to specifically address UM removal. This information will be included in Change 1 to 8100.15A by September 30, 2012.

Recommendation 3: Track unit member appointments in its Designee Information Network (DIN) database or another method in order to identify unit members with known performance issues and require engineers to cross-check names with the database beyond the first 2-year required timeframe.

FAA Response: Concur in part. It is impractical for the FAA to maintain all ODA UM names in an FAA database. However, since an ODA holder is responsible for their unit member management and we already require ODA holders to report the names of UMs removed for performance reasons that constitute misconduct, we could track only those unit members who have been removed due to performance-related issues. We propose to issue policy that will require these removed UMs to be tracked in DIN so that they may be precluded from future designee or UM selection. Order 8100.15 currently requires that proposed UMs are cross-checked with existing FAA databases beyond the initial 2-year timeframe. This is being clarified in Order 8100.15A. The proposed change will be included in Change 1 to 8100.15A by September 30, 2012.

Recommendation 4: Develop enforcement training and guidance that is pertinent to the unique requirements of the certification engineering discipline.

FAA Response: Concur. Aviation Safety (AVS) will ensure that pertinent portions of the existing FAA Academy Compliance & Enforcement course address ODA certificate management. AVS will also provide more information in the designee management course lesson on ODA oversight by December 31, 2012.

Recommendation 5: Improve the new oversight structure for large ODA holders by:

- A. developing training for FAA engineers and disseminating comprehensive procedures on the new oversight structure for large ODA holders.
- B. assessing the effectiveness of the new oversight structure before implementing it at other large ODA holders.

FAA Response: Concur. The establishment of the Boeing Aviation Safety Oversight Office (BASOO) and Gulfstream Aviation Safety Oversight Office (GASOO) constitutes a new organizational structure, not a new oversight structure. Oversight roles and processes remain unchanged but may be divided among more staff members in these offices. AVS will revise its policy to clarify that these new offices are responsible for developing and conducting training for their staff and the people that interact with them. In addition, AVS will develop guidance defining best practices for proper oversight of ODAs by June 2012. We will then assess the effectiveness of the existing oversight offices (BASOO and GASOO) against this guidance before we implement any future organizational changes of a similar nature. We will have a plan developed to assess the

existing oversight offices by September 2012. We will then perform the assessment and document any proposed changes, to policy or structure, in fiscal year (FY) 2013.

Recommendation 6: Improve the RBRT tool by:

- A. Enhancing the risk assessment process so that it uses more automated data, such as accidents resulting from manufacturing defects, to accurately differentiate higher risk projects that likely pose the most safety risk.
- B. Thoroughly testing and validating it to ensure that it is fully functional.
- C. Ensuring that engineers are properly trained before requiring its use and relying upon its results.

FAA Response to 6.A: Concur. It has been the intention of the FAA to continuously improve the RBRT process. The implementation of the AVS Safety Management System (SMS) will establish a methodology to collect appropriate data to transition from a qualitative to a quantitative risk management system. There are several process initiatives within AVS SMS to provide data to support RBRT in the future. To get to that point though, we also need to begin using RBRT in a qualitative form to standardize the risks on which our workforce should focus. We have revised the RBRT tool to use the regulation prioritization data that differentiates and prioritizes the severity of all the regulations. This will help the workforce better use the tool to focus on specific regulations that are higher risk. New process and IT tools being developed to support the transition of RBRT to a fully quantitative process include All Lessons Learned (accident database) expected in mid-FY 2012; Aircraft Certification Audit Information System, expected by the end of FY 2012; the Engineering Design Approval process, expected in FY 2013; the Designee Management System, expected by the end of FY 2013; Manufacturers SMS; and potential rulemaking for Part 21 SMS beginning in FY 2013. All of these processes currently under development will collect the objective data needed to support RBRT in the future.

FAA Response to 6.B: Concur. The new IT solution is currently in the user-acceptance testing phase. This new solution is being tested more vigorously than the last, based on the lessons learned from the prototype tool. Validation of the process has occurred multiple times in the past four years. The process was initially challenged by a large user community, after which several changes were made. The improved process and tool were then used in a prototype environment, during which we found additional changes and learned about the IT limitations. We will continue to take full advantage of testing and validation practices, as necessary, to deploy future data tools mentioned in 6A, and anticipate implementation by September 30, 2014. Additionally, there are targeted reviews scheduled by the process owner to review the user feedback being collected along with management recommendations, which will drive continuous improvement of the tool.

FAA Response to 6.C: Concur. New training is being developed to provide the work force with the necessary knowledge to use the RBRT IT tool. This training will take many forms. First, we are developing a computer-based learning package that will be available to all employees. This computer-based package will be available two months

before planned implementation to allow adequate time for the work force to access the training. There is also a plan to conduct an orientation presentation to all field offices, detailing the process and demonstrating the IT tool. These orientations will take place in the month before projected launch, so as to make sure the information on how to interface with and use the tool stays fresh in the minds of the field employees. To support the use of RBRT, we will also be issuing policy and Quality Management System work instructions, detailing when and how to use the tool for those who may have missed the orientation sessions. This information will be published and have an effective date no later than September 30, 2011. Additionally, AVS has been conducting a “road show” for the workforce on our discretionary function authority and what it means. This training is also in support of RBRT in that it lays the foundation for the management options RBRT provides. These discretionary function briefings are scheduled to be completed by December 31, 2011.