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AVIATION CERTIFICATION

Issues Related to Domestic and Foreign Approval of U.S. Aviation Products

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Why GAO Did This Study

FAA issues certificates for new U.S.-manufactured aviation products, based on federal aviation regulations. GAO has previously reviewed the efficiency of FAA's certification process and the consistency of its regulatory interpretations. As required by the 2012 FAA Modernization and Reform Act, FAA chartered two aviation rulemaking committees in April 2012—one to improve certification processes and another to address regulatory consistency—that recommended improvements in 2012. FAA also assists U.S. aviation companies seeking approval of their FAA-certificated products in foreign markets. FAA has negotiated BASAs with many FCAAs to provide a framework for the reciprocal approval of aviation products. However, U.S. industry stakeholders have raised concerns that some countries conduct lengthy processes for approving U.S. products.

This testimony focuses on (1) FAA's reported progress in implementing the aviation rulemaking committees' 2012 recommendations regarding its certification process and the consistency of its regulatory interpretations and (2) the challenges that selected U.S. companies reported they have faced when attempting to obtain foreign approvals of their products, and how FAA is addressing some of the reported challenges. It is based on GAO products issued from 2010 to 2015, selectively updated in April 2015 based on FAA documents and information from FAA officials and selected industry stakeholders.

View GAO-15-550T. For more information, contact Gerald L. Dillingham, Ph. D. at (202) 512-2834 or dillinghamg@gao.gov.

What GAO Found

The Federal Aviation Administration (FAA) has made progress in addressing the Certification Process and the Regulatory Consistency Committees' recommendations, but as GAO reported in January 2015, challenges remain that could affect successful implementation of FAA's planned actions.

- FAA is implementing 14 initiatives for addressing 6 *certification process* recommendations. According to an April 2015 FAA update, 13 initiatives have been completed or are on track to be completed, and 1 will not meet planned milestones.

- In January 2015, FAA published a detailed implementation plan for addressing six *regulatory consistency* recommendations. According to the plan, FAA closed two recommendations—one as not implemented and one as implemented in 2013—and plans to complete the remaining four by July 2016.

While FAA has made some progress, it is too soon for GAO to determine whether FAA's planned actions adequately address the recommendations. However, industry stakeholders indicated concerns regarding FAA's efforts, including concerns about a lack of communication with and involvement of stakeholders as FAA implements the two committees' recommendations. Since GAO reported in January 2015, FAA has been addressing these concerns.

In January 2015, GAO also reported that representatives of 15 selected U.S. aviation companies that GAO interviewed reported facing various challenges in obtaining foreign approvals of their products, including challenges related to foreign civil aviation authorities (FCAA) as well as challenges related to FAA.

- Reported *FCAA-related challenges* related to (1) the length and uncertainty of some FCAA approval processes, (2) the lack of specificity and flexibility in some of FAA's bilateral aviation safety agreements (BASA) negotiated with FCAAs, (3) difficulty with or lack of FCAA communications, and (4) high fees charged by some FCAAs. Although FAA's authority to address some of these challenges is limited, FAA has been addressing many of them. For example, FAA created a certification management team with its three major bilateral partners to provide a forum for addressing approval process challenges, among other issues. FAA has also taken action to mitigate the challenges related to some BASAs by holding regular meetings with bilateral partners and adding dispute resolution procedures to some BASAs.

- Reported *FAA-related challenges* primarily involved (1) FAA's process for facilitating approval applications, which sometimes delayed the submission of applications to FCAAs; (2) limited availability of FAA staff for facilitating approval applications; and (3) lack of FAA staff expertise in issues unique to foreign approvals, such as intellectual property concerns and export control laws. FAA has initiatives under way to improve its process that may help resolve some of these challenges raised by U.S. companies. For example, FAA has initiated efforts to improve the robustness of its approvals-related data to better evaluate its relationships with bilateral partners, i.e., countries for which FAA has a BASA in place. FAA is also addressing its resource limitations by taking actions to improve the efficiency of its process.

_____ **United States Government Accountability Office**

Chairwoman Ayotte, Ranking Member Cantwell, and Members of the Subcommittee:

I am pleased to be here today to testify on the status of the Federal Aviation Administration's (FAA) efforts to improve its processes for certifying new aviation products for domestic use, and the challenges faced by U.S. aviation companies seeking product approvals in foreign countries. The 2012 FAA Modernization and Reform Act required FAA to work with industry to resolve issues related to the efficiency of FAA's certification processes and varying interpretations and applications of its regulations in making compliance decisions during certification.[1] In response to the mandated provisions in the 2012 FAA Modernization and Reform Act, in April 2012, FAA chartered two aviation rulemaking committees—one to address certification processes (the Certification Process Committee) and another to address regulatory consistency (the Regulatory Consistency Committee)—which recommended improvements in 2012. FAA also assists U.S. aviation companies in getting their U.S.-certificated products approved for sale and export to foreign countries. However, some U.S. industry stakeholders have raised concerns that some countries do not accept the FAA certification and conduct their own approval processes for U.S. products, which can be lengthy and provide no additional safety benefit.

My statement today discusses (1) FAA's reported progress in implementing the aviation rulemaking committees' 2012 recommendations regarding its certification process and the consistency of its regulatory interpretations and (2) the challenges that selected U.S. companies reported they have faced when attempting to obtain foreign approvals of their products, and how FAA is addressing some of the reported challenges. This testimony is based on several GAO products

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[1]Pub. L. No. 112-95, §§ 312 and 313, 126 Stat. 11, 66, 67 (2012).

issued since 2010,[2] and selected updates of this work on FAA's progress in implementing the committees' recommendations and addressing foreign approval challenges, based on FAA documents and information from FAA officials and selected industry stakeholders. Each of these products contains detailed information on our objectives, scope, and methodology for performing this work. The work on which this statement is based was performed in accordance with generally accepted government 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 objectives.

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[2]GAO, *Aviation Safety: Issues Related to Domestic Certification and Foreign Approval of U.S. Aviation Products*, GAO-15-327T (Washington, D.C.: Jan. 21, 2015); *Aviation Manufacturing: Status of FAA's Efforts to Improve Certification and Regulatory Consistency*, GAO-14-829T (Washington, D.C.: July 31, 2014); *Aviation Safety: FAA's Efforts to Implement Recommendations to Improve Certification and Regulatory Consistency Face Some Challenges*, GAO-14-728T (Washington, D.C.: July 23, 2014); *Aviation Safety: Status of Recommendations to Improve FAA's Certification and Approval Processes,* GAO-14-142T (Washington, D.C.: Oct. 30, 2013); *Aviation Safety: Certification and Approval Processes Are Generally Viewed as Working Well, but Better Evaluative Information Needed to Improve Efficiency*, GAO-11-14 (Washington, D.C.: Oct. 7, 2010).
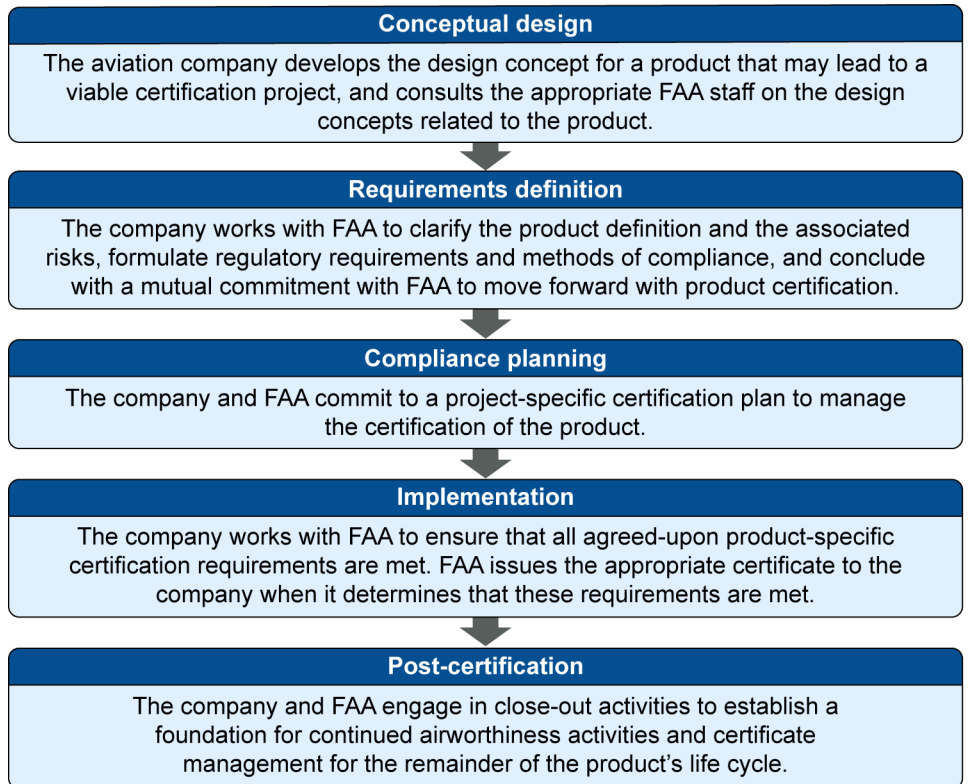
FAA Has Made Progress in Addressing the Certification Process and Regulatory Consistency Committees' Recommendations

FAA Reports that Most of the Initiatives to Improve Its Aircraft Certification Processes Have Been Implemented, but It Is Too Early to Assess Whether Expected Outcomes Will Be Achieved

As you know, among its responsibilities for aviation safety, FAA's Aircraft Certification Service (Aircraft Certification) grants approvals (called type certificates) for new aircraft, engines, and propellers. Certification projects, which involve the activities to determine compliance of a new product with applicable regulatory standards and to approve products for certificates, are typically managed by one of Aircraft Certification's local offices (generally known as aircraft certification offices, or ACOs).[3] Figure 1 lists the key phases in FAA's process for issuing certificates for aviation products. As depicted in the figure, both the applicant company and Aircraft Certification staff are involved in each phase.

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[3]Aircraft Certification has local offices that serve geographic areas across the United States for aircraft certification-related activities: Anchorage, AK, Atlanta, GA; Boston, MA; Chicago, IL; Denver, CO; Fort Worth, TX; Los Angeles, CA; New York, NY; Seattle, WA; and Wichita, KS.

Figure 1: Key Phases in the Process Used by the Federal Aviation Administration's (FAA) Aircraft Certification Service for Issuing Certificates for New Aviation Products

Conceptual design

The aviation company develops the design concept for a product that may lead to a viable certification project, and consults the appropriate FAA staff on the design concepts related to the product.

Requirements definition

The company works with FAA to clarify the product definition and the associated risks, formulate regulatory requirements and methods of compliance, and conclude with a mutual commitment with FAA to move forward with product certification.

Compliance planning

The company and FAA commit to a project-specific certification plan to manage the certification of the product.

Implementation

The company works with FAA to ensure that all agreed-upon product-specific certification requirements are met. FAA issues the appropriate certificate to the company when it determines that these requirements are met.

Post-certification

The company and FAA engage in close-out activities to establish a foundation for continued airworthiness activities and certificate management for the remainder of the product's life cycle.

Source: FAA. | GAO-15-550T

Note: FAA staff involved may include managers, engineers, inspectors, flight test pilots, chief scientific and technical advisors, as well as an aircraft evaluation group from FAA's Flight Standards Service. The aircraft evaluation group is responsible for evaluating aviation products for conformance to operations and maintenance requirements.

Studies published since 1980,[4] our prior work,[5] industry stakeholders, and experts have long raised questions about the efficiency of FAA's certification processes and varying interpretations and applications of its regulations in making compliance decisions during certification. Over time, FAA has implemented efforts to address these issues, but as we reported in July 2014,[6] they persist as FAA faces greater industry demand and its overall workload has increased. In 2013, FAA published a detailed implementation plan for addressing the six certification process recommendations, and, in January 2015, published a detailed implementation plan for addressing the six regulatory consistency recommendations.

As of April 2015, FAA has made progress in addressing the Certification Process Committee's recommendations, but as we reported in January 2015, challenges remain that could affect successful implementation of the recommendations. FAA is implementing its plan for addressing the 6 certification process recommendations, which involves completing 14 initiatives. According to an April 2015 update that FAA provided to us, 13 initiatives were completed or were on track to be completed, and one will not meet planned milestones.[7] Figure 2 illustrates the evolving status of the 14 initiatives based on the update reported by FAA.
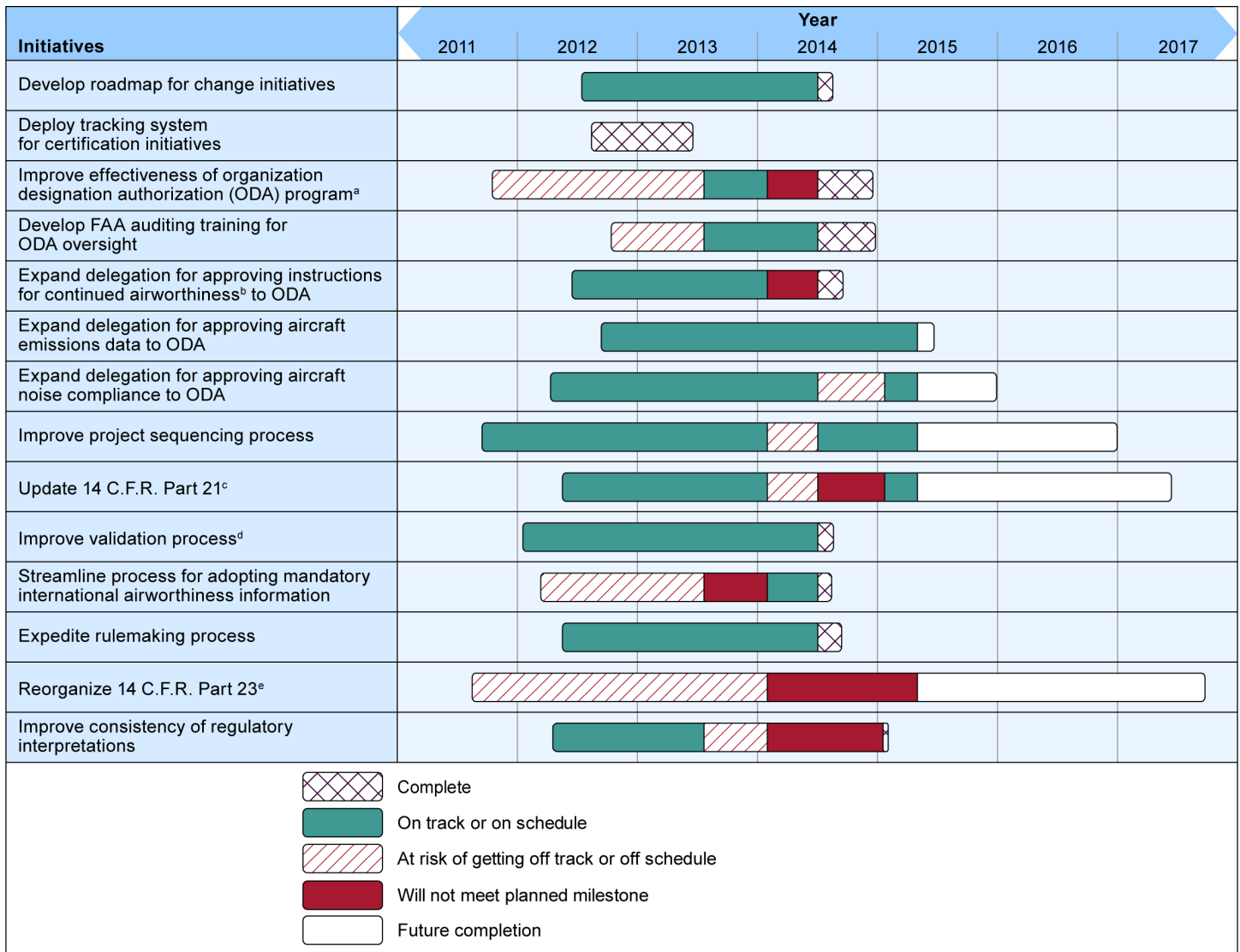
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[4]See National Academy of Sciences, *Improving Aircraft Safety: FAA Certification of Commercial Passenger Aircraft*, National Research Council, Committee on FAA Airworthiness Certification Procedures (Washington, D.C.: June 1980); Booz Allen & Hamilton, *Challenge 1000: Recommendations for Future Aviation Safety Regulations* (McLean, VA: Apr. 19, 1996); RTCA Task Force 4, *Final Report of the RTCA Task Force 4 "Certification"* (Washington, D.C.: Feb. 26, 1999; and Independent Review Team Appointed by Secretary of Transportation Mary E. Peters, *Managing Risks in Civil Aviation: A Review of FAA's Approach to Safety* (Washington, D.C.: Sept. 2, 2008).

[5] GAO-11-14 and GAO, *Aircraft Certification: New FAA Approach Needed to Meet Challenges of Advanced Technology*, GAO/RCED-93-155 (Washington, D.C.: Sept. 1993).

[6]GAO-14-829T and GAO-14-728T.

[7]The one initiative that will not meet planned milestones is reorganizing the regulations for certificating small airplanes, 14 C.F.R. Part 23. FAA plans to issue the final rule by September 2017.

Figure 2: Federal Aviation Administration's Reported Status Updates of its Initiatives to Address the Certification Process Committee's Recommendations, as of April 2015

Initiatives	Year						
	2011	2012	2013	2014	2015	2016	2017
Develop roadmap for change initiatives							
Deploy tracking system for certification initiatives							
Improve effectiveness of organization designation authorization (ODA) program[a]							
Develop FAA auditing training for ODA oversight							
Expand delegation for approving instructions for continued airworthiness[b] to ODA							
Expand delegation for approving aircraft emissions data to ODA							
Expand delegation for approving aircraft noise compliance to ODA							
Improve project sequencing process							
Update 14 C.F.R. Part 21[c]							
Improve validation process[d]							
Streamline process for adopting mandatory international airworthiness information							
Expedite rulemaking process							
Reorganize 14 C.F.R. Part 23[e]							
Improve consistency of regulatory interpretations							

Legend:
- Complete
- On track or on schedule
- At risk of getting off track or off schedule
- Will not meet planned milestone
- Future completion

Source: GAO presentation of FAA information. | GAO-15-550T

Note: Future completion shown in the figure indicates when an initiative is planned to be completed.

[a]FAA delegates authority to organizations under the organization designation authorization program to carry out certain functions on behalf of the agency. 14 C.F.R. Part 183, Subpart D.

[b]Instructions for continued airworthiness include such things as maintenance manuals and inspection programs for maintaining operational safety of aviation products.

[c]Aircraft products and parts are certificated under 14 C.F.R. Part 21.

As figure 2 above indicates, 5 of the 14 certification process initiatives are related to improving FAA's organization designation authorization (ODA) program.[8] As of April 2015, FAA had completed three of the five ODA-related certification process initiatives, while the remaining two are expected to be completed by the end of 2015. In January 2015, we noted that industry stakeholders had emphasized the need for FAA to expand its use of the ODA program to better leverage its available resources in other needed areas (e.g., staff and other resources for processing foreign approval applications—which will be discussed later in this statement). For example, one aircraft manufacturer told us it is a practical necessity for FAA to expand its ODA program to (1) better utilize private sector expertise to keep pace with the growing aviation industry, (2) allow more aerospace products to reach the market sooner, and (3) increase the efficiency of the agency's scarce resources. According to the General Aviation Manufacturers Association (GAMA),[9] the key strength of ODA is FAA's ability to delegate, at its discretion, certain certification activities and test data reviews to qualified individuals or specific manufacturers' employees. In doing so, FAA can leverage its resources by delegating more of the lower priority work during the certification process, thereby enabling FAA to better concentrate its limited staff resources on the most pressing aspects of certification projects. Another manufacturer noted that without expanded use of the program by FAA, the additional cost associated with maintaining an ODA has begun to outweigh the benefits of having the authorization.

As we found in July 2014, industry union representatives we spoke to also reported concerns about the lack of FAA resources to effectively expand the program.[10] While one labor union agreed with the concept of ODA, representatives had concerns related to expanding the program in

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[8] FAA's ODA process is used to authorize organizations (designees) to act on behalf of FAA in conducting some safety certification work.

[9] GAMA represents leading global manufacturers of general aviation airplanes and rotorcraft, engines, avionics, and components.

[10] GAO-14-829T and GAO-14-728T.

other areas because they contended that oversight of the program required significant FAA resources. Furthermore, the representatives told us that due to staffing shortages and increased workload, FAA did not have enough inspectors and engineers to provide the proper surveillance of the designees who had already been granted this authority. However, as we reported in January 2015, it is too soon for us to determine whether FAA's initiatives adequately address the recommendations as intended, and in this case, specifically for expanding the use of the ODA program.

FAA Has Developed Plans to Address Recommendations to Improve the Consistency of Its Regulatory Interpretations, but Progress Has Been Slow

According to the January 2015 regulatory consistency implementation plan, FAA closed two recommendations—one as not implemented and one as implemented in 2013—and plans to complete the remaining 4 by July 2016. Table 1 provides a summary of the recommendations and FAA's plans for addressing them.

Table 1: Summary of the Federal Aviation Administration's Planned Actions to Address the Regulatory Consistency Committee's Recommendations, as of January 2015

Recommendation	Planned FAA action(s)	Estimated completion
(1) Master Source Guidance System In its top priority recommendation, the Committee recommended that FAA: (a) review all guidance documents to identify and cancel outdated material and electronically link the remaining materials to its applicable rule, and (b) consolidate electronic guidance libraries into a master source guidance system, organized by rule, to allow FAA and industry users' access to relevant rules and all guidance materials.	• Flight Standards and Aircraft Certification officials plan to map or link identified guidance documents to the appropriate section of the Code of Federal Regulations where possible, with the eventual goal of creating a document management framework that encompasses all Aviation Safety regulatory guidance documents. Based on the results of the document mapping process, Flight Standards and Aircraft Certification plan to determine the requirements for an electronic platform that would accommodate the search parameters emphasized by external stakeholders.	• March 31, 2016
(2) Instructional Tools for FAA Personnel for Applying Policy and Guidance Noting multiple instances where FAA guidance appeared to have created inconsistent interpretation and application and confusion, the Committee recommended that FAA develop a standardized decision-making methodology for the development of all policy and guidance material to ensure such documents are consistent with adopted regulations.	• FAA plans to implement this recommendation by evaluating current government best practices and transitioning to a comprehensive document management framework for drafting, revising, and reviewing regulatory guidance documents.	• October 31, 2015
(3) FAA and Industry Training Priorities and Curriculums The Committee recommended that FAA, in consultation with industry stakeholders, review and revise its regulatory training for applicable agency personnel and make the curriculum available to industry.	• FAA plans to conduct a gap analysis of existing training to identify any deficiencies. As part of this analysis, FAA plans to review current available training to ensure that it meets the needs of aviation safety inspectors and aviation safety engineers in applying regulations in the field and for safety inspectors and engineers with their responsibilities for rulemaking and policy development/revision. FAA plans to develop a plan of action to address any deficiencies found during the gap analysis. This plan of action is expected to include appropriate performance measures.	• July 31, 2015

Recommendation	Planned FAA action(s)	Estimated completion
(4) Regulatory Consistency Communications Board (RCCB) and (5) Regulatory Operations Communication Center The Committee made two similar recommendations for FAA to consider: (1) establishing a Regulatory Consistency Communications Board comprising various FAA representatives that would provide clarification on questions from FAA and industry stakeholders related to the application of regulations and (2) determining the feasibility of establishing a full-time Regulatory Operations Communication Center as a centralized support center to provide real-time guidance to FAA personnel and industry certificate/approval holders and applicants.	• To address recommendation 4, FAA plans to establish an RCCB to begin documenting, and tracking policy application and intent questions in a consistent manner. The RCCB is planned to be responsible for developing a policy question tracking process that will be introduced internally at the outset, with the goal of expanding the process to external industry stakeholders. • FAA does not plan to address recommendation 5. According to FAA officials, the agency has addressed the intent of this recommendation with its plan to establish an RCCB.	• Recommendation 4: June 30, 2016. • Recommendation 5: Closed and not implemented.
(6) Clarity in Final Rules The Committee recommended that FAA improve the clarity of its final rules by ensuring that each final rule contains a comprehensive explanation of the rule's purpose and how it will increase safety.	• According to officials, FAA considers this recommendation closed through the implementation of a rulemaking prioritization process and tool in 2013. Officials noted that FAA rulemaking includes other process elements that help ensure clarity in final rules. These elements include the development of rules by subject matter experts as well as multiple rounds of review within FAA and by the Department of Transportation and the Office of Management and Budget.	• Closed and implemented in 2013 through a separate initiative, according to FAA.

Source: GAO presentation of FAA information. | GAO-15-550T

As we found in January 2015, while FAA has made some progress, it is too soon for us to determine whether FAA's planned actions adequately address the recommendations.[11] However, in that report, we also found that challenges remain that could affect the successful implementation of FAA's planned actions. Industry representatives continued to indicate a lack of communication with and involvement of stakeholders as a primary challenge for FAA in implementing the committees' recommendations, particularly the regulatory consistency recommendations. However, FAA noted that the processes for developing and updating its plans for addressing the certification process and regulatory consistency

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[11]GAO-15-327T.

recommendations have been transparent and collaborative, and that FAA meets regularly with industry representatives to continuously update them on the status of the initiatives and for seeking their input. We also reported in January 2015 that several industry representatives told us that FAA had not effectively collaborated with or sought input from industry stakeholders in the agency's efforts to address the two sets of recommendations, especially the regulatory consistency recommendations. For instance, some stakeholders reported that FAA did not provide an opportunity for them to review and comment on the certification process implementation plan updates, and did not provide an opportunity for them to review and offer input on the regulatory consistency implementation plan. However, FAA reported meeting with various industry stakeholders in October 2014 to brief them on the general direction and high-level concepts of FAA's planned actions to address each regulatory consistency recommendation.

Since we reported in January 2015, FAA officials met with stakeholders of the Regulatory Consistency Committee in March 2015 to brief them and further clarify the plan to implement the regulatory consistency recommendations. According to FAA, they are planning to conduct quarterly briefings with the Committee stakeholders, starting in June 2015, to provide updates on the progress for addressing the four remaining recommendations. FAA officials also noted that while the implementation plan lists a completion date of March 2016 for the recommendation for developing the Master Source Guidance System—which FAA calls the Dynamic Regulatory System—this completion date is specifically for FAA's efforts to determine the feasibility of including Office of Chief Counsel letters in the system.[12] In terms of completing the development of the system, the officials told us they are currently ahead of the schedule outlined in the implementation plan and are working on finalizing the design concept for the new system. Once this process is completed, they would be able to provide a more accurate completion date for deployment of the system. According to one Committee stakeholder, it is important that FAA remain committed to creating the

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[12]FAA plans to develop a master source guidance system with the capability to consolidate information from Aircraft Certification's and Flight Standards' electronic guidance libraries as well as legal interpretations from the Office of Chief Counsel into a master guidance system to allow FAA and industry users access. Specifically, the Regulatory Consistency Committee recommended that this system be searchable so that FAA and industry users can easily access relevant rules and find the relevant guidance for the rule.

Master Source Guidance System, which was the Committee's primary recommendation.

Selected U.S. Companies Reported Challenges in Obtaining Foreign Approvals, Which FAA Has Taken Steps to Address within Sovereignty Constraints

In January 2015, we reported that, according to GAMA, the U.S. has historically been viewed as setting the global standard for the approval of aviation products internationally. Once U.S. aviation companies obtain a type certificate from FAA to use an aviation product in the United States, the companies often apply for approvals for the same products for use in other countries.[13] In 2012, the U.S. aerospace industry contributed $118.5 billion in export sales to the U.S. economy, with this sector remaining strong in the European markets and growing in the emerging markets of Asia and the Middle East. Some countries accept the FAA approval outright as evidence that the product is safe for use in their country. Some other countries, however, do not accept the FAA certification and conduct their own approval processes for U.S. products, which can be lengthy, according to some U.S. industry stakeholders. These stakeholders have raised concerns that such practices provide no additional safety benefit and result in U.S. companies facing uncertainty and costly delays in delivering their products to foreign markets. FAA has taken steps to address these concerns, but FAA's authority to address some of the challenges is limited because each country retains control of its basic regulatory framework for approving aviation products and ensuring the safety of those products for use in their countries—effectively a recognition of the sovereignty of each country.
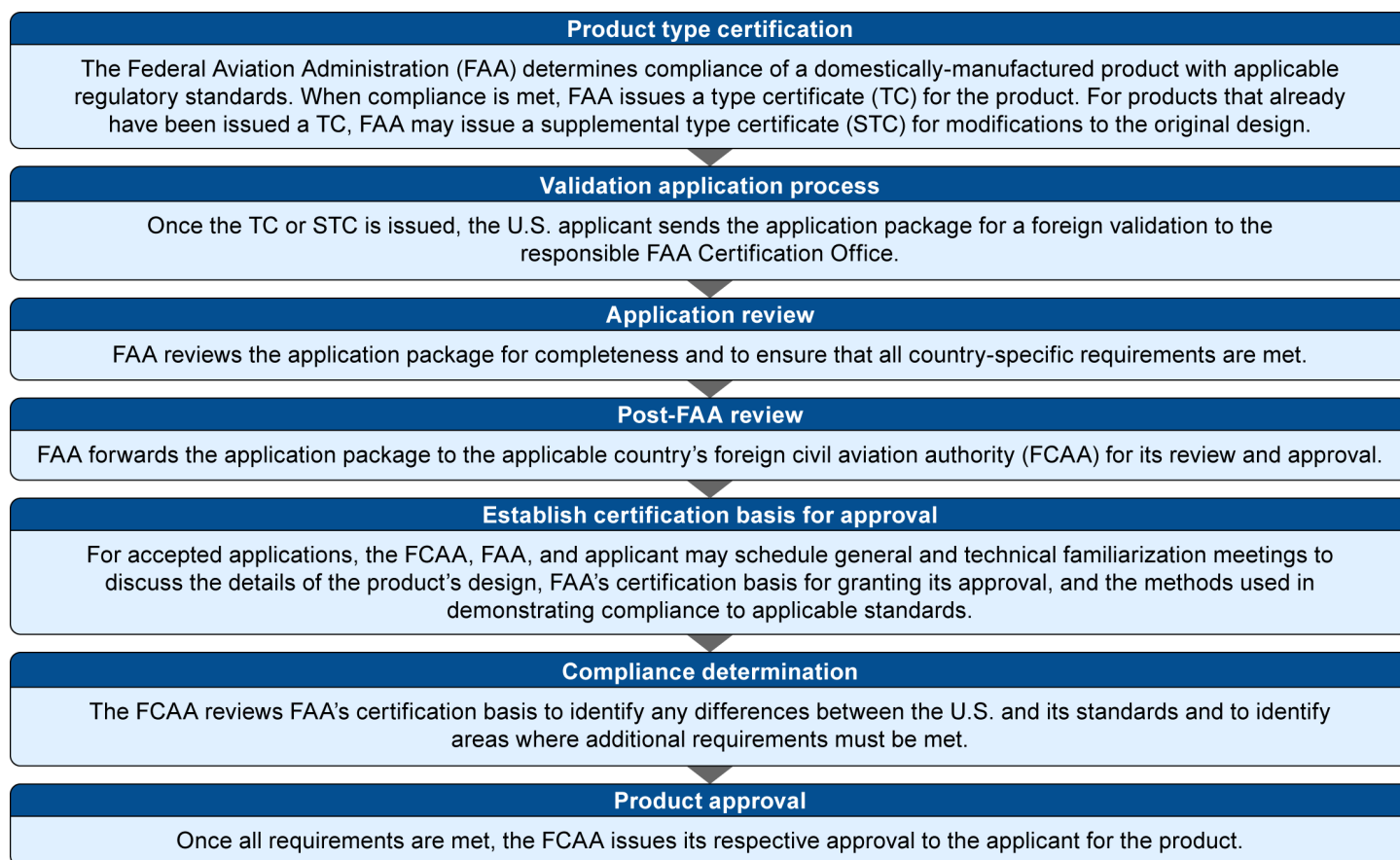
As counterparts to FAA, other countries' civil aviation authorities—which we will refer to as foreign civil aviation authorities (FCAA)—approve domestically-manufactured aviation products for use in their respective countries. FCAAs also approve U.S. aviation products for use in their respective countries. These approvals are typically conducted within the parameters of bilateral aviation safety agreements (BASA), which are negotiated between FAA and other FCAAs.[14] BASAs represent bilateral partnership agreements that provide a framework for the reciprocal approval of aviation products imported and exported between the U.S.

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[13]FAA also approves foreign aviation products that are manufactured in other countries for use in the United States as a result of sales to U.S. customers.

[14]According to FAA, it has 21 BASAs that affect 47 countries, including one BASA with the European Aviation Safety Agency that covers the European Union (EU) member nations.

and other countries.[15] Figure 3 outlines the general steps for obtaining approvals of U.S. aviation products from FCAAs.

Figure 3: General Steps for Obtaining Approvals of U.S. Aviation Product from Foreign Civil Aviation Authorities

Product type certification
The Federal Aviation Administration (FAA) determines compliance of a domestically-manufactured product with applicable regulatory standards. When compliance is met, FAA issues a type certificate (TC) for the product. For products that already have been issued a TC, FAA may issue a supplemental type certificate (STC) for modifications to the original design.

Validation application process
Once the TC or STC is issued, the U.S. applicant sends the application package for a foreign validation to the responsible FAA Certification Office.

Application review
FAA reviews the application package for completeness and to ensure that all country-specific requirements are met.

Post-FAA review
FAA forwards the application package to the applicable country's foreign civil aviation authority (FCAA) for its review and approval.

Establish certification basis for approval
For accepted applications, the FCAA, FAA, and applicant may schedule general and technical familiarization meetings to discuss the details of the product's design, FAA's certification basis for granting its approval, and the methods used in demonstrating compliance to applicable standards.

Compliance determination
The FCAA reviews FAA's certification basis to identify any differences between the U.S. and its standards and to identify areas where additional requirements must be met.

Product approval
Once all requirements are met, the FCAA issues its respective approval to the applicant for the product.

Source: GAO presentation of FAA information. | GAO-15-550T

Note: This figure outlines the general steps for a sequential approval process in which the company first seeks a type certificate or supplemental type certificate from FAA. However, applicants may opt for a concurrent approval process in which its aviation product undergoes an FCAA's approval at the same time it undergoes the FAA certification process. In fact, according to FAA, a number of foreign approvals are issued the same day as the FAA certification.

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[15]It is important to note that a BASA with another country may not include a technical agreement that would allow for the reciprocal approval, or acceptance, of an aviation product between the two countries. Thus, a BASA without a technical agreement would mean that an FCAA would likely have to conduct its own certification of a new U.S. product to approve it for use in that country. For more information, see GAO-15-327T.

U.S. Companies Reported that they Experienced FCAA-Related Process, Communications, and Cost Challenges and FAA is Attempting to Address These Challenges

Representatives of the 15 selected U.S. aviation companies we interviewed for our January 2015 statement reported that their companies faced challenges related to process, communications, and cost in obtaining approvals from FCAAs. The processes involved included FCAAs' individual approval processes as well as the processes spelled out in the relevant BASAs. In our January 2015 statement, we identified some efforts FAA is making to address these challenges, such as holding regular meetings with some bilateral partners—i.e., countries for which FAA has a BASA in place—and setting up forums in anticipation of issues arising.

- *Reported FCAA process challenges.* Of the 15 companies we interviewed, representatives from 12 companies reported mixed or varied experiences with FCAAs' approval processes, and 3 reported positive experiences. Thirteen companies reported challenges related to delays, 10 reported challenges with approval process length, and 6 reported challenges related to FCAA staffs' lack of knowledge or uncertainty about the approval processes, including FCAA requests for data and information that, in the companies' views, were not needed for approvals. FAA has taken actions aimed at alleviating current and heading off future challenges related to foreign approval processes. For example, in September 2014, FAA—along with Brazil, Canada, and the EU—established a Certification Management Team to provide a forum for addressing approvals and other bilateral relationship issues. FAA also recently established a pilot program that allows a U.S. company to work concurrently with multiple FCAAs for obtaining approvals and to identify key FCAA approval needs and ensure adequate FAA support.[16]

- *Reported issues related to some BASAs.* Although representatives from 11 of the 15 U.S. companies and the 3 foreign companies we interviewed reported being satisfied with the overall effectiveness of having BASAs in place or with various aspects of the current BASAs, representatives of 10 U.S. companies reported challenges related to some BASAs lacking specificity and flexibility, 2 raised concerns that there is a lack of a formal dispute resolution process, and 1 noted a lack of a distinction between approvals of simple and complex aircraft.

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[16]According to FAA, this is a pilot program in which all of the FCAAs to which Boeing submitted approval applications will meet jointly with Boeing rather than each having separate meetings with Boeing. Therefore, Boeing would be able to identify common needs from all of the FCAAs for their approvals.

Companies suggested several ways to address these issues, including updating BASAs more often and making them clearer. FAA has taken action to improve some BASAs to better streamline the approval process that those countries apply to imported U.S. aviation products. For instance, according to FAA officials, they meet regularly with bilateral partners to address approval process issues and are working with these partners on developing a common set of approval principles and to add specific dispute resolution procedures in the agreements with some countries. FAA officials also indicated that they are working with longstanding bilateral partners—such as Brazil, Canada, and the EU—to identify areas where mutual acceptance of approvals is possible.

- *Reported Challenges in Communicating with FCAAs.* Representatives from 12 U.S. companies reported challenges in communicating with FCAAs. Representatives from six U.S. companies reported, for example, that interactions with developing countries can be confusing and difficult because of language and cultural issues. Representatives from two companies noted that they hire local representatives as consultants in China to help them better engage the Civil Aviation Administration of China (CAAC) staff with their approval projects and to navigate the CAAC's process. One company's representative also reported having better progress in communications with FCAAs in some Asian countries, such as India Japan, and Vietnam, when a local "third-party agent" (consultant) is involved because it provides a better relationship with the FCAAs' staff. Representatives from three companies also reported that, in general, some FCAAs often do not respond to approval requests or have no back-ups for staff who are unavailable. They noted that potential mitigations could include a greater FAA effort to develop and nurture relationships with FCAAs. According to FAA officials, they are working with the U.S.-China Aviation Cooperation Program to further engage with industry and Chinese officials.

- *Reported Challenges Related to Foreign Approval Costs.* Representatives from 12 of the 15 U.S. companies and 2 of the 3 foreign companies indicated challenges with regard to approval fees charged by FCAAs. They specifically cited EASA—the EU's counterpart to FAA—and the Federal Aviation Authority of Russia. For example, they noted that EASA's fees are very high (up to 95 percent

of the cost of a domestic EASA certification)[17]—especially relative to the amount levied by other FCAAs[18]—are levied annually, and are unpredictable because of the unknown amount of time it takes for the approval to be granted. The fees are based on the type of product being reviewed for approval and can range from a few thousand dollars to more than a million dollars annually. Representatives from two companies also noted that EASA lacks transparency for how the work it conducts to grant approvals aligns with the fees it levies for recovering its costs.[19] FAA officials indicated to us that a foreign approval should take significantly less time and work to conduct than the work required for an original certification effort—roughly about 20 percent—and that they have initiated discussions with EASA officials about making a significant reduction in the fees charged to U.S. companies. However, recently, FAA indicated that it is more important to work with EASA to ensure its fees are commensurate with the actual costs of the services being provided and those incurred by EASA.[20]

[17]EASA's March 2014 proposal to amend the Agreement between the U.S. and the EU on cooperation in the regulation of civil aviation safety notes that in principle, the EASA process for approval of certificates issued by a country with which the EU has an appropriate agreement should result in a different workload from the process required for certification activities by that certifying country. However, in the approval of U.S. products, EASA currently charges U.S. companies up to 95 percent of the cost of conducting a domestic certification of a similar European-manufactured aviation product.

[18]For example, according to media reports citing information obtained from Robinson Helicopter Company, EASA charged Robinson about $1 million to approve the R66 helicopter while other FCAAs' charges ranged from $2,709 (Argentina) to $178,000 (Russia). According to one report, Robinson also noted that Canada—where it stated that the team size and depth of review of the FAA certification was very similar to that of EASA—levied a total fee of about $80,000 to certify the R66.

[19]Pursuant to the regulation establishing EASA—Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008—EASA is financed primarily through fees paid for certificates issued by the agency and charges for publications, training, and other services.

[20]According to FAA, this change in approach is based on Article 14 of the EU-U.S. BASA that states, in part, that each party shall try to ensure that fees imposed by their "technical agents" on applicants and regulated entities for certification and approval related services under the agreement are just, reasonable, and commensurate with the services.

| U.S. Companies Also Reported FAA-Related Challenges, Which FAA Is Taking Actions to Address | As mentioned previously, FAA provides assistance to U.S. companies by facilitating the application process for foreign approvals of aviation products. Although FAA seeks to provide an efficient process, companies we interviewed for our January 2015 statement reported challenges that they faced related to FAA's role in this process. FAA-related challenges cited by the companies we interviewed fell into three main categories: process, resources, and staff expertise. |

- *Process for facilitating foreign approvals.* Most of the U.S. companies in our selection (12 of 15) reported challenges related to FAA's process for handling foreign approvals. These included concerns about foreign approvals not being a high enough priority for FAA staff, a lack of performance measures for evaluating BASAs, and an insufficient use of FAA's potential feedback mechanisms. For example, representatives of three companies told us that sometimes FAA is delayed in submitting application packets to FCAAs because other work takes priority; one of these companies indicated that sometimes FAA takes several months to submit packets to FCAAs. In another example, representatives of four companies cited concerns that BASAs do not include any performance measures, such as any expectations for the amount of time that it will take for a company's foreign approval to be finalized. With regard to FAA using feedback mechanisms to improve its process for supporting foreign approvals, representatives of one company told us that applicant companies are not currently asked for post-approval feedback by FAA, even though it would be helpful in identifying common issues occurring with foreign approvals.

- *Available resources.* Most of the U.S. companies in our selection (10 of 15) reported challenges related to the availability of FAA staff and other resources. These include limited FAA travel funds and limited FAA staff availability to process foreign approval applications. According to FAA officials, FAA is responsible for defending the original type certification and, more broadly, for handling any disputes that arise with FCAAs during the foreign approval process.[21] In doing so, FAA is also responsible for working with an FCAA in an authority-to-authority capacity, and communications should flow through FAA to the applicant company. However, representatives of five companies

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[21]According to FAA guidance, the implementing procedures for BASAs are signed by the authorities (FAA and the respective FCAA), and therefore the applicant should work through FAA if disputes occur with the FCAA during the foreign approval process.

noted that due to a lack of FAA travel funds, FAA staff are generally not able to attend key meetings between U.S. companies and FCAAs conducted at the beginning of the foreign approval process. These representatives noted that this can complicate the process for companies, which then have to take on a larger role in defending the original type certificate issued for a product. Representatives of two companies also noted that when there is limited FAA staff availability at the time a foreign approval application is received, it contributes to delays in obtaining their approvals. In fact, the Certification Process Committee made recommendations to encourage FAA to include the expansion of delegation in its efforts for improving the efficiency of its certification process. As previously discussed, FAA does have initiatives under way related to expanding the use of delegation, but concerns continue to exist about the lack of FAA resources to effectively do so.

- *Staff expertise*. Some of the U.S. companies in our selection (7 of 15) reported issues related to FAA staff expertise. These issues cited included limited experience on the part of FAA staff in dispute resolution as well as limited expertise related to intellectual property and export control laws. For example, representatives of three companies told us that FAA staff sometimes lack technical knowledge due to having little or no experience with some aviation products, while a representative of another company argued that increased training for FAA staff in dispute resolution could be very helpful, especially for disputes involving different cultural norms. In another example, representatives of two companies described situations in which FAA staff were ready to share information with an FCAA that the applicant company considered proprietary, until the company objected and other solutions were found.

In January 2015, we found that FAA has initiatives under way aimed at improving its process for supporting foreign approvals that may help address some of the challenges raised by the U.S. companies in our review. Specifically, FAA's current efforts to increase the efficiency of its foreign approval process could help address reported challenges related to FAA's process and its limited staff and financial resources. For example, FAA is planning to address its resource limitations by focusing on improving the efficiency of its process with such actions as increasing international activities to support U.S. interests in global aviation, and by implementing its 2018 strategic plan, which includes the possibility of allocating more resources to strengthening international relationships. FAA has also initiated efforts to improve the robustness of its data on foreign approvals, to further improve the efficiency of its process for

supporting these approvals. With more complete data, FAA aims to track performance metrics, such as average timeframes for foreign approvals, and to better evaluate its relationships with bilateral partners.

As we concluded in January 2015, to its credit, FAA has made some progress in addressing the Certification Process and Regulatory Consistency Committees' recommendations, as well as in taking steps to address challenges faced by U.S. aviation companies in obtaining foreign approvals of their products.[22] It will be critically important for FAA to follow through with its current and planned initiatives to increase the efficiency and consistency of its certification processes, and its efforts to address identified challenges faced by U.S. companies in obtaining foreign approvals. Given the importance of U.S. aviation exports to the overall U.S. economy, forecasts for continued growth of aviation exports, and the expected increase in FAA's workload over the next decade, it is essential that FAA undertake these initiatives to ensure it can meet industry's future needs. It is also important that FAA continue to demonstrate that it is making progress on these important initiatives, as well as enhance its data tracking for monitoring the effectiveness of its bilateral agreements and partnerships.

Going forward, we will monitor FAA's progress, highlight the key challenges that remain, and identify potential steps that FAA and industry can take to find a way forward on the issues covered in this statement as well as other issues facing the industry. As we noted in our October 2013 statement, however, some improvements to the certification processes will likely take years to implement and, therefore, will require a sustained commitment as well as congressional oversight.[23] We are hopeful that our findings in these areas will assist this Subcommittee as it develops the framework for the next FAA reauthorization act.

Chairwoman Ayotte, Ranking Member Cantwell, and Members of the Subcommittee, this concludes my prepared remarks. I would be happy to answer any questions you or other members of the Subcommittee may have.

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[22]GAO-15-327T.

[23]GAO-14-142T.

GAO Contact and Staff Acknowledgements

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