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AVIATION SAFETY

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

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GAO-15-327T

GAO Highlights

Highlights of GAO-15-327T, a testimony before the Committee on Transportation and Infrastructure, House of Representatives

January 21, 2015

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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 and industry stakeholders have questioned 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 committees—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 progress in implementing the certification process and regulatory consistency recommendations and (2) challenges selected U.S. companies face in obtaining foreign approvals. It is based on GAO products issued from 2010 to 2014, updated in January 2015 based on FAA documents, and preliminary observations from GAO's ongoing work on foreign approvals. This ongoing work includes an analysis of FAA data on approval applications submitted January 2012 through November 2014 and interviews of a nongeneralizable sample of 15 U.S. companies seeking foreign approvals, selected on the basis of the number of applications submitted and aviation product types manufactured.

View GAO-15-327T. 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 challenges remain and could affect successful implementation of the committees' recommendations.

- FAA is implementing its plan for completing 14 initiatives for addressing the 6 *certification process* recommendations. According to a January 2015 FAA update, 10 initiatives have been completed or are on track to be completed, whereas the rest are at risk of not meeting or will not meet planned milestones.
- FAA has developed plans for addressing the six *regulatory consistency* recommendations. In late December 2014, FAA officials indicated that the final plan to implement the recommendations is under agency review and is expected to be published in January 2015. According to a draft version of the 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.

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 continue to indicate concerns regarding FAA's efforts. These concerns include a lack of communication with and involvement of stakeholders as FAA implements the two committees' recommendations.

As part of its ongoing work, representatives of 15 selected U.S. aviation companies 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 related to FCAAs is limited, FAA has been addressing many of them. For example, FAA has 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 is making its approvals-related data more robust to better evaluate its relationships with bilateral partners.FAA is also addressing its resource limitations by taking actions to improve the efficiency of its process.

Chairman Shuster, Ranking Member DeFazio, and Members of the Committee:

I appreciate the opportunity to testify today on the status of the Federal Aviation Administration's (FAA) efforts to improve its processes for approving new aviation products for domestic use, and the challenges faced by U.S. aviation companies seeking product approvals in foreign countries. As you know, among its responsibilities for aviation safety, FAA grants approvals (called type certificates) for new aircraft, engines, and propellers. Studies published since 1980,[1] our prior work,[2] 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 certification decisions. Over time, FAA has implemented efforts to address these issues, but as we reported in July 2014,[3] they persist as FAA faces greater industry demand and its overall workload has increased. The 2012 FAA Modernization and Reform Act required FAA to work with industry to resolve these issues.[4] In response, 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

[1]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).

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

[3]GAO, *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).

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

improvements in 2012.[5] In 2013, FAA published an implementation plan for addressing the six certification process recommendations and stated it would publish an implementation plan for addressing the six regulatory consistency recommendations at a later date. As we previously reported in July 2014, FAA's current efforts to improve these processes are aimed at (1) improving its decision-making process for issuing certificates, (2) keeping pace with emerging technology, and (3) enabling industry growth and innovation.[6] We previously concluded that it will be critical for FAA to follow through with reforms to its certification processes to meet industry's future needs.[7] We have also recommended that FAA develop a continuous evaluative process with performance goals and measures to determine the effectiveness of the agency's actions to improve its certification processes.[8]

FAA also assists U.S. aviation companies in getting their U.S.-certificated products approved for export to foreign countries. 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.[9] According to the Aerospace Industries Association, U.S. aviation products continue to be a global commodity for foreign markets because of their widely recognized quality

[5]Report from the Aircraft Certification Process Review and Reform Aviation Rulemaking Committee to the Federal Aviation Administration: *Recommendations on the Assessment Of The Certification And Approval Process*, May 22, 2012; and Report from the Consistency Of Regulatory Interpretation Aviation Rulemaking Committee to the Federal Aviation Administration: *Recommendations On Improving Consistency Of Regulatory Interpretation*, November 28, 2012.

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

[7]GAO-14-829T; GAO-14-728T; and GAO, *Aviation Safety: Status of Recommendations to Improve FAA's Certification and Approval Processes,* GAO-14-142T (Washington, D.C.: Oct. 30, 2013).

[8]GAO-11-14. Specifically, we recommended that FAA develop a continuous evaluative process and use it to create measurable performance goals for the actions, track performance toward those goals, and determine appropriate process changes. We also recommended that FAA develop and implement a process in Flight Standards to track how long certification and approval submissions are wait-listed, the reasons for wait-listing them, and the factors that eventually allowed initiation of the certification process. FAA partially addressed the first recommendation and fully addressed the other. Also see GAO-14-142T.

[9]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.

and safety.[10] 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. Internationally, according to the General Aviation Manufacturers Association,[11] the U.S. has historically been viewed as setting the global standard for the approval of aviation products. In fact, 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 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.

This testimony discusses (1) FAA's progress in implementing the aviation rulemaking committees' recommendations regarding its certification process and the consistency of its regulatory interpretations and (2) the challenges, if any, 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. My statement is based on several GAO products issued since 2010, selected updates on this work, as well as preliminary observations of our ongoing study of the challenges faced by companies seeking foreign approvals.[12] The reports and testimonies cited in this statement contain detailed explanations of the methods used to conduct our prior work. For this testimony, we updated the information in our previous work on FAA's certification process[13] in January 2015 through a review of more recent FAA and industry documents, including the committees' reports to FAA, FAA's reports to Congress in response to the committees' recommendations as well as additional government and industry documents and reports related to this topic.

[10]The Aerospace Industries Association represents major U.S. aerospace and defense manufacturers and suppliers.

[11]The General Aviation Manufacturers Association represents leading global manufacturers of general aviation airplanes and rotorcraft, engines, avionics, and components.

[12]The final results from our ongoing study are expected to be completed by Spring 2015.

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

For our ongoing work in determining the challenges faced by companies seeking foreign approvals, conducted from March 2014 to January 2015, we reviewed (1) FAA data on the approximately 1,500 applications for foreign approvals submitted January 2012 through November 2014, (2) bilateral aviation safety agreements (BASA)[14] and related documents, and (3) FAA and industry reports and studies. We also interviewed 15 of the approximately 288 U.S. companies that submitted applications for foreign approvals—these companies submitted about 34 percent of the roughly 1,500 applications to foreign countries from January 2012 through November 2014.[15] We selected these 15 U.S. companies to interview primarily on the basis of the number of approval applications submitted and to represent a diversity of aviation product types (e.g., engines, large airplanes, small airplanes, rotorcraft, propellers, and parts). Because the 15 companies represent a non-generalizable sample, their views cannot be attributed to all U.S. company applicants. We determined that the FAA data were sufficiently reliable for the purposes of providing information on the approximate number of approval applications, types of products for which approvals were typically sought, and for selecting U.S. companies to interview. This determination was based on consultation with FAA officials responsible for overseeing the data. We also conducted interviews with FAA headquarters and field staff and other industry stakeholders—including representatives of the International Civil Aviation Organization (ICAO) and U.S. aviation stakeholder groups. In order to better understand whether the challenges faced by U.S. aviation companies are unique or more commonly faced by aviation companies worldwide, we also interviewed representatives of three foreign aviation companies. Our selection was based on the company being a known importer of aviation products into the United States, as well as based on the type of product they produced. We provided a draft of the new information in this statement to the Department of Transportation (DOT) for technical review and addressed its views where appropriate.

[14]BASAs represent bilateral partnership agreements, negotiated between FAA and other countries' civil aviation authorities, that provide a framework for the reciprocal approval of aviation products imported and exported between the U.S. and other countries.

[15]According to FAA officials, the agency's data on numbers of applications received for foreign approvals may not be complete—for reasons which will be described in more detail later—and therefore this is an approximate number. The FAA data included 486 applications in 2012, 505 in 2013, and 543 in 2014. Also, while not included in our total count of roughly 1,500 applications, the data included approximately 350 applications that FAA received prior to January 2012 or did not indicate a date for when FAA received them.

The work upon which this testimony is based was conducted 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.

Background

FAA is the key federal agency responsible for certification of U.S. aviation products to be used in the United States and has a significant role in supporting approvals of U.S. products in other countries. Located in FAA's Office of Aviation Safety (Aviation Safety), the Aircraft Certification Service (Aircraft Certification) issues certificates, including type certificates and supplemental type certificates,[16] for new aviation products to be used in the national airspace system. 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).[17] Figure 1 illustrates the range of U.S.-manufactured aviation products—including aircraft, helicopters, propellers, and engines—for which Aircraft Certification issues type certificates and supplemental type certificates once all requirements are met.

[16]A type certificate is issued for original designs that comply with applicable regulatory standards. A supplemental type certificate is issued for modifications to the original design.

[17]Aircraft Certification has local offices that serve geographic areas across the United States for aircraft certification-related activities in: 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: The Federal Aviation Administration Issues Certificates for a Variety of U.S. Aviation Products

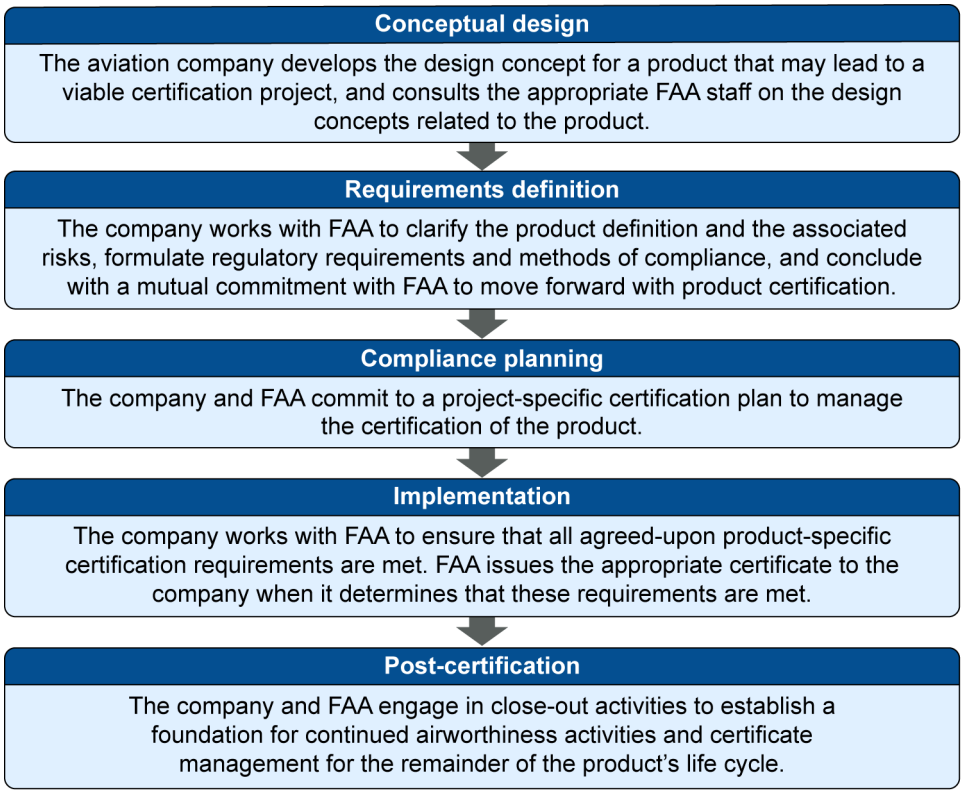
Sources: Piper Aircraft, Robinson Helicopter Company, Boeing, Hartzell Propellor, and GE Aviation. | GAO-15-327T

As we reported in 2010, Aircraft Certification previously delayed the start of some new projects when resources were not immediately available to begin the work.[18] However, in September 2014 it instituted a new process—project prioritization and resource management—that aims to

[18]See GAO-11-14. In addition, also located in Aviation Safety, the Flight Standards Service (Flight Standards) conducts certifications of new operators, such as air carriers, in the national airspace system. When projects are accepted in Flight Standards, they are processed on a first-in, first-out basis within each office once FAA determines that it has the resources to oversee an additional new certificate holder. Flight Standards, in particular, has historically had difficulty keeping up with its certification workload across its regions and offices. For more information, see DOT Office of Inspector General, *Weak Processes Have Led to A Backlog of Flight Standards Certification Applications*, Federal Aviation Administration, Report Number AV-2014-056 (Washington, D.C.: June 12, 2014).

eliminate such delays.[19] Figure 2 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.

Figure 2: Key Phases in the Process Used by the Federal Aviation Administration's (FAA) Aircraft Certification Service for Issuing Certificates for New Aviation Products



Source: FAA. | GAO-15-327T

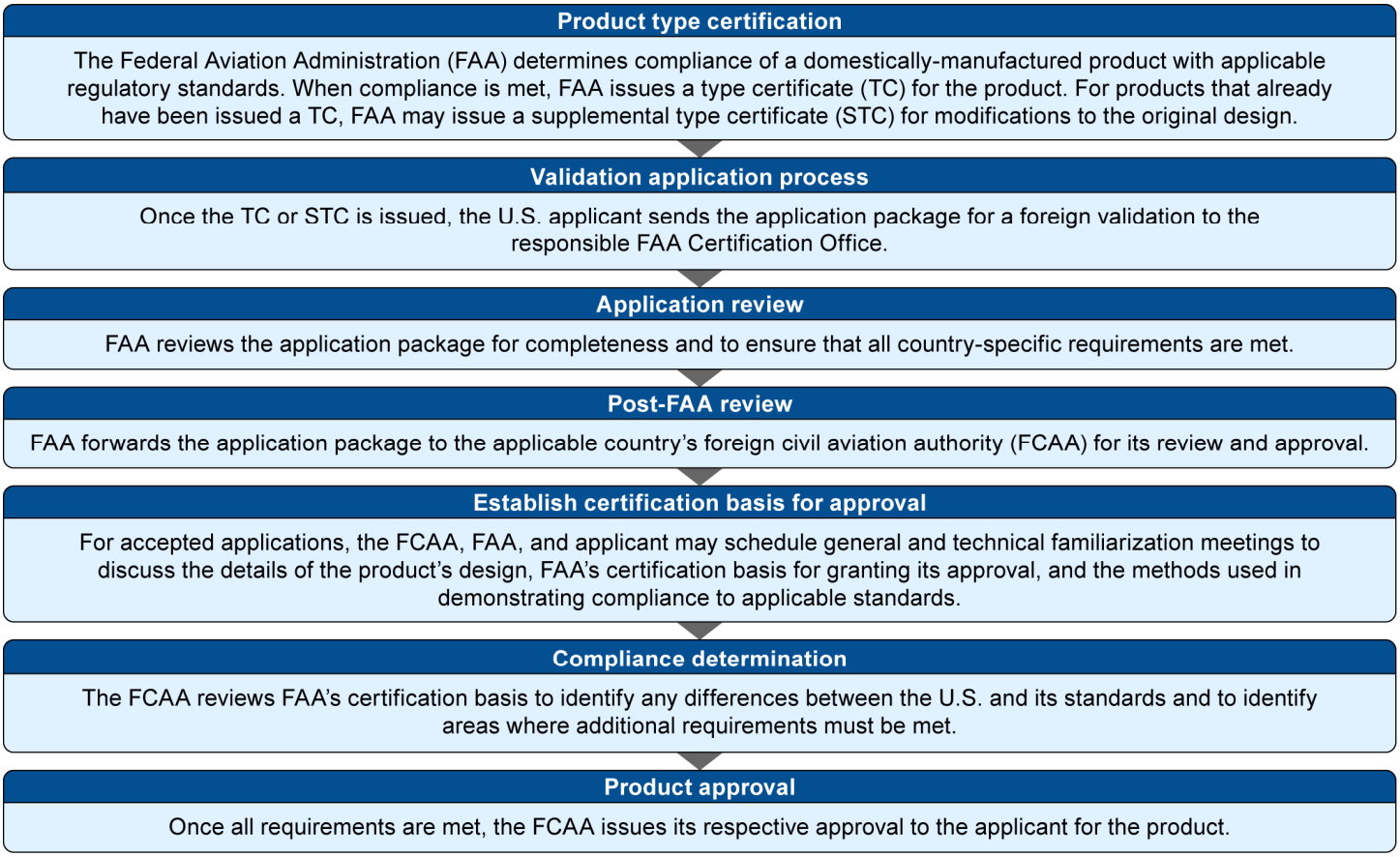
[19]Similar to the previous process, known as project sequencing, the new project prioritization process focuses FAA resources on safety but with an approach that allows work to begin without delay following acceptance of an application package. Under this new process, when a certification project is initiated, the responsible ACO determines the project's priority and related task response times. Project sequencing, which began in 2005, was an effort to focus limited resources on safety enhancements, but the workload was managed by delaying (wait listing) entire projects until resources were available. Applicants were sometimes subject to long delays and could not anticipate when FAA personnel would start work on a project.

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.

Under the Convention on International Civil Aviation (known as the Chicago Convention), each country is responsible for the safety oversight activities for its civil aviation system, including the continued operational safety of the people and products operating within the country's airspace. ICAO is the international body that, among other things, promulgates international standards and recommended practices to ensure that civil aviation throughout the world is safe and secure.[20] The Chicago Convention also requires each contracting member country to adopt airworthiness standards for the design and performance of aviation products. As counterparts to FAA, other countries' civil aviation authorities—which we will refer to as foreign civil aviation authorities (FCAA)—also approve domestically-manufactured aviation products for use in their respective countries. ICAO allows a member country to (1) accept a product approved by another member country (called *type acceptance*), (2) conduct an approval process to evaluate another country's basis for certification to ensure that a product meets that member country's airworthiness standards (called *validation*), or (3) conduct its own certification. Therefore, FCAAs also approve U.S. aviation products for use in their respective countries. While FAA is responsible for issuing the type certificates and supplemental type certificates for U.S.-manufactured aviation products, the agency also provides technical and practical support to U.S. companies seeking foreign approvals in other countries by defending the original type certificate issued for a product. Applications for foreign approvals are generally submitted to FAA for review, and, once satisfied that all FCAA submission requirements are met, FAA transmits the applications to the relevant FCAA. Figure 3 outlines the general steps for obtaining approvals of U.S. aviation products from FCAAs.

[20]ICAO was formed following the 1944 Convention on International Civil Aviation, and in 1947 it became a specialized agency of the United Nations. A primary objective of ICAO is to provide for the safe, orderly, and efficient development of international civil aviation. There are currently 190 signatory nations to the Chicago convention, including the United States. ICAO members, including the United States, are not legally bound to act in accordance with ICAO standards and recommended practices. Nations that are signatories to the Chicago convention, however, agree to cooperate with other member countries to meet standardized international aviation measures.

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



Source: GAO presentation of FAA information. | GAO-15-327T

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.

FAA has negotiated BASAs with many of its civil aviation authority counterparts.[21] These agreements provide a framework for the reciprocal approval of aviation products imported and exported between the U.S. and other countries. According to FAA, it has 21 BASAs which affect 47 countries, including one BASA with the European Union (EU) that covers its member nations. For a new BASA to be initiated, FCAAs initiate negotiations with the United States through a diplomatic note to the U.S. Department of State. BASAs are generally structured in two parts:

- First, an executive agreement is negotiated by the U.S. Department of State with its foreign counterpart that authorizes the two countries to enter into a BASA.
- Second, Implementation Procedures for Airworthiness (IPA) are negotiated between FAA and the respective FCAA. The IPA outlines the airworthiness technical cooperation between FAA and its bilateral partner, and may include procedures for the reciprocal acceptance of product approvals and changes, production and surveillance oversight, and continued airworthiness activities.[22]

While BASAs exist to assist in streamlining the approval process for imported aviation products between bilateral partners, each country retains control of its basic regulatory framework for ensuring the safety of those products—effectively a recognition of the sovereignty of each country. For example, in cases of differing interpretations of regulations or standards during the approval process between bilateral partners, some BASAs contain a clause that notes that the interpretation of the country whose regulations and/or standards are being interpreted will prevail.

[21]BASAs require that U.S. aviation companies submit applications for foreign approvals through FAA; however, there is no such requirement for applications to countries where a BASA does not exist. However, FAA encourages companies preparing applications to non-bilateral partners for approvals to submit the applications to FAA for transmittal to the relevant FCAA.

[22]More recently, instead of an IPA, FAA incorporated Technical Implementation Procedures (TIP) in the BASA with its European counterpart, the European Aviation Safety Agency (EASA). TIPs outline the detailed duties and responsibilities for how FAA and a FCAA interact in terms of level of involvement, as well as the technical steps during the approval process.

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

Aircraft Certification is implementing and has set milestones for completing 14 initiatives in response to May 2012 recommendations of the Certification Process Committee. This Committee was chartered to make recommendations to Aircraft Certification to streamline and reengineer its certification process, improve efficiency and effectiveness within Aircraft Certification, and redirect resources for support of certification. Several of the initiatives were originally begun as part of earlier certification process improvement efforts. The initiatives range from developing a comprehensive road map for major change initiatives, to reorganizing the small aircraft certification regulations.[23] Although we reported in 2013 that the Certification Process Committee's recommendations were relevant, clear, and actionable, it is too soon for us to determine whether FAA's 14 initiatives adequately address the recommendations.

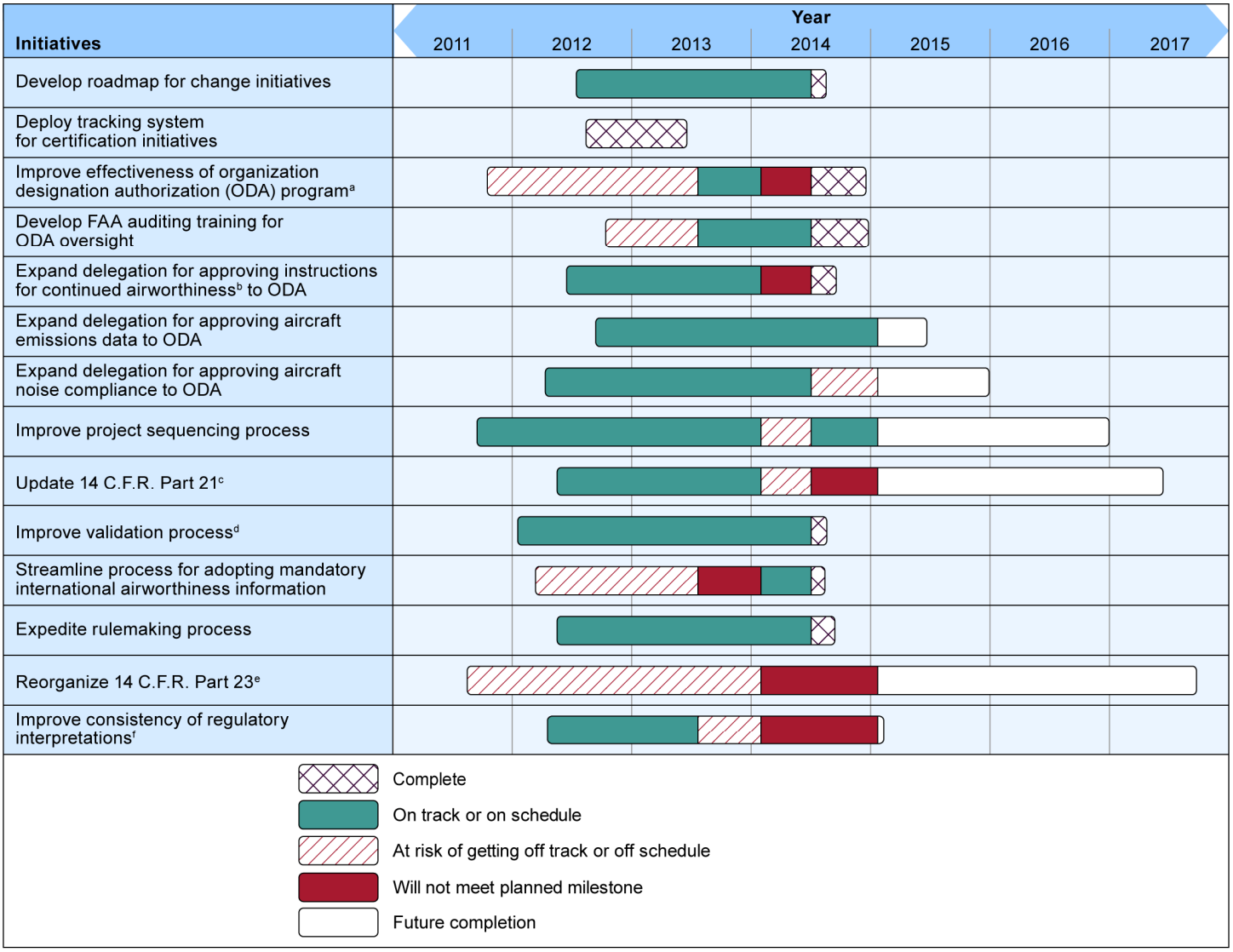
According to an update prepared by FAA in January 2015, eight initiatives have been completed, and two are on track to be completed within 3 years. However, according to this update, one initiative was at risk of not meeting planned milestones, and three initiatives will not meet planned milestones, including the update to 14 C.F.R. Part 21—the regulations under which aircraft products and parts are certificated. We reported in July 2014 that this initiative was in danger of not meeting planned milestones because the October 2013 government shutdown delayed

[23] 14 C.F.R. Part 23. In June 2013, a joint FAA-industry committee recommended to FAA changes to part 23. According to FAA officials, FAA will devise a plan to implement the recommendations and initiate a new rulemaking for part 23 in 2015.

some actions FAA had planned to move it into the rulemaking process.[24] In its January 2015 update, FAA indicated that the formal rulemaking project timeline has been delayed to late fiscal year 2015 to allow for additional work with industry on developing guidance material and new certificate holder requirements. Figure 4 illustrates the evolving status of the 14 initiatives based on the publically-available periodic updates reported by FAA.

[24]GAO-14-728T.

Figure 4: Federal Aviation Administration's Reported Status Updates of its Initiatives to Address the Certification Process Committee's Recommendations, as of January 2015



Source: GAO presentation of FAA information. | GAO-15-327T

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.

[d]The approval (i.e., validation) process is a form of certification to establish compliance for aviation products designed outside their countries in order to issue a type certificate for these products.

[e]Small airplanes are certificated under 14 C.F.R. Part 23.

[f]This initiative is on hold until issuance of the implementation plan for addressing recommendations to improve regulatory consistency.

We found in October 2013 that Aircraft Certification lacked performance measures for many of these initiatives.[25] As of July 2014, FAA had developed metrics for measuring the progress of the implementation of 13 of the 14 initiatives.[26] According to FAA officials, they plan to develop these metrics in three phases. For the first phase, which was documented in the July 2014 update of its implementation plan, FAA developed metrics to measure the progress of the implementation of the initiatives. For the second phase, FAA plans to develop metrics for measuring the outcomes of each initiative. For the third phase, working with the Aerospace Industries Association and General Aviation Manufacturers Association, FAA plans to develop metrics for measuring the global return on investment in implementing all of the initiatives, to the extent that such measurement is possible. FAA did not provide us a time frame for developing the second and third phase metrics. While we continue to believe that this plan for establishing performance measures is reasonable, and recognizing that FAA is in the early stages of implementation, it is critical for FAA to follow through with its plans for developing and utilizing metrics to evaluate improvements to the certification process. Without these metrics, FAA will be unable to fully determine whether its efforts have been successful in addressing the Certification Process Committee's recommendations as intended, identify areas that may need more attention, and modify efforts to sufficiently address any gaps. In our previous work, we have reported on instances where the implementation and metrics related to FAA efforts have not achieved the intended outcomes as expected, e.g., modernizing the air traffic control system under the Next Generation Air Transportation

[25]GAO-14-142T.

[26]The initiative without performance metrics focuses on improving the consistency of regulatory interpretation and is on hold until issuance of the implementation plan for addressing a separate set of the recommendations to improve regulatory consistency within FAA. However, as we discuss later, Flight Standards is taking the lead in addressing those recommendations and is developing a plan and associated performance metrics. Flight Standards' implementation plan is scheduled to be published in late January 2015.

System (NextGen)[27] and the integration of unmanned aerial systems into the national airspace system.[28]

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

Flight Standards has also developed initiatives in response to the six November 2012 recommendations of the Regulatory Consistency Committee, but the planned initiatives have not yet been released officially. This Committee was chartered to make recommendations to FAA to improve (1) the consistency in how regulations are applied in making certification decisions and (2) communications between FAA and industry stakeholders regarding such decisions. In late December 2014, FAA indicated that the draft plan to implement these recommendations was currently under review within FAA but the final plan is expected to be published by the end of January 2015, more than a year past the initial target publication date of December 2013. However, according to an October 2014 draft version of the plan that FAA provided to us, despite not having yet officially released the plan, FAA noted that it had closed 2 of the 6 recommendations and plans to complete the remaining four by July 1, 2016. FAA also noted that it had developed performance measures to measure the progress of the implementation of the remaining 4 recommendations. Table 1 provides a summary of the recommendations and FAA's plans for addressing them, based on the October 2014 draft plan that FAA provided to us.

[27]NextGen is a federal effort to transform the U.S. national airspace system from a ground-based system of air traffic control to a satellite-based system of air traffic management. See GAO, *FAA Reauthorization Act: Progress and Challenges Implementing Various Provisions of the 2012 Act*, GAO-14-285T (Washington, D.C.: Feb. 5, 2014).

[28]Unmanned aircraft systems are remotely piloted aircraft or drones. They do not carry a pilot aboard, but instead operate on pre-programmed routes or are manually controlled by commands from pilot-operated ground control stations. See GAO, *Unmanned Aerial Systems: Efforts Made toward Integration into the National Airspace Continue, but Many Actions Still Required*, GAO-15-254T (Washington, D.C.: Dec. 10, 2014).

Table 1: Summary of the Federal Aviation Administration's Planned Actions to Address the Regulatory Consistency Committee's Recommendations, as of October 2014

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-15-327T

We reported in 2013 that the Regulatory Consistency Committee took a reasonable approach in identifying the root causes of inconsistent interpretation of regulations, and its recommendations are relevant to the root causes, actionable, and clear.[29] However, it is too soon for us to determine whether FAA's planned actions adequately address the recommendations. In addition, FAA's draft plan stated that the resources required to implement the recommendations must be balanced with other important FAA activities, such as agency priorities and existing rulemaking initiatives, and that if future priorities change, it may be forced

[29]GAO-14-142T.

to modify elements of this implementation plan. As we reported in July 2014, it will be critically important for FAA to follow through with its initiatives aimed at improving the consistency of its regulatory interpretation as well as its plans for developing performance metrics to track the achievement of intended consistencies.[30] We have previously reported that large-scale change management initiatives—like those recommended by the regulatory consistency committee—require the concentrated efforts of both leadership and employees to realize intended synergies and accomplish new organizational goals.[31]

Further, industry representatives have 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. FAA has noted that the processes for developing and updating its plans for addressing the certification process and regulatory consistency 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. However, several industry representatives recently told us—and we reported in July 2014[32]—that FAA has 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 does 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 did meet 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.

[30]GAO-14-728T.

[31]GAO, *Results-Oriented Cultures: Implementation Steps to Assist Mergers and Organizational Transformations,* GAO-03-669 (Washington, D.C: July 2, 2003).

[32]GAO-14-728T.

Selected U.S. Companies Report Challenges in Obtaining Foreign Approvals, Which FAA Is Taking Steps to Address within Sovereignty Constraints

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

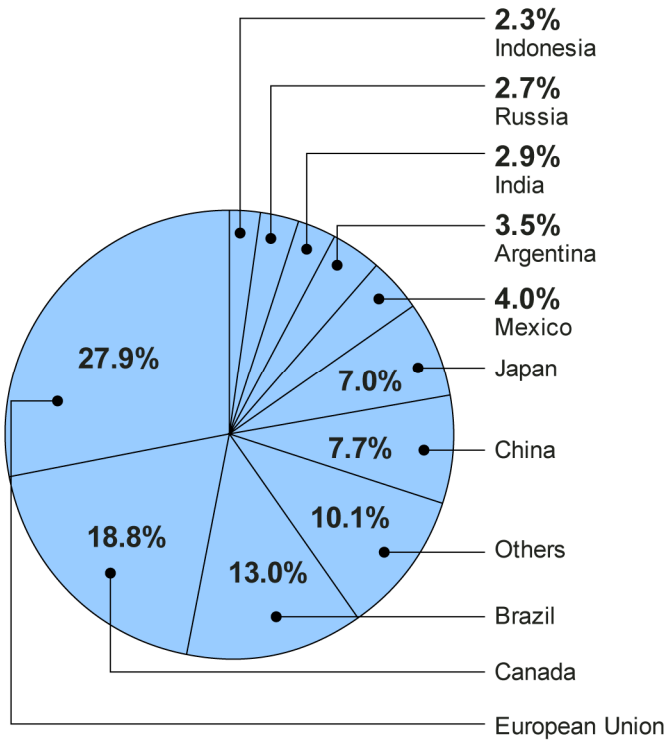
Representatives of the selected 15 U.S. aviation companies we interviewed, as part of our ongoing work on foreign approvals, reported that their companies faced challenges related to process, communications, and cost in obtaining approvals from FCAAs.[33] The processes involved included FCAAs' individual approval processes as well as the processes spelled out in the relevant BASAs. FAA is making some efforts to address these challenges, such as by holding regular meetings with some bilateral partners and setting up forums in anticipation of issues arising.

According to FAA data, from January 2012 through November 2014, U.S. companies submitted approximately 1,500 applications for foreign approvals to a total of 37 FCAAs.[34] Figure 5 shows the percentage of applications submitted to the top ten and other markets for foreign approvals from January 2012 through November 2014.

[33]Some aviation companies discussed multiple challenges; therefore, the total number of companies that are discussed for each reported challenge throughout this part of this statement will not add to 15.

[34]The total includes Hong Kong, which is counted separately from China.

Figure 5: The Top Ten and Other Foreign Markets to Which U.S. Aviation Companies Submitted Applications for Foreign Approvals, January 2012 through November 2014



Source: GAO analysis of FAA data. | GAO-15-327T

Notes: Percentages in the figure do not total 100 percent due to rounding.

Others include the following bilateral partners, in descending order of the number of applications submitted: South Korea, South Africa, Taiwan, New Zealand, Malaysia, Israel, and Singapore.

The percentages are based on an approximation of the total number of submitted applications by U.S. aviation companies. According to FAA, the number of applications may be undercounted because there is no formal requirement for U.S. aviation companies to submit applications to FAA for foreign approvals unless the country is a FAA bilateral partner. Thus, some applications may not have been entered into FAA's tracking system.

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. Representatives of three companies stated that, in

their opinion, the EU's process is sometimes lengthy and burdensome, resulting in delays. Representatives of four companies noted examples of approval projects that, in their opinions, were expected to be granted within weeks or hours by FCAAs, in general, but instead took months or years. As an example, there were several media reports on the EU's 4-year process for the approval of the Robinson R66 helicopter, which was reportedly awarded by EASA in May 2014.[35] However, because we were not provided the relevant factors and circumstances that could have affected the delays in the specific examples provided, we did not assess whether the approvals took longer than necessary. Eight companies also noted that China often makes requests for data and detailed product design information that in their view is not necessary for an approval, and sometimes holds up approvals until those requests are fulfilled.

FAA has taken actions aimed at alleviating current and heading off future challenges related to foreign approval processes. 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 (initially for the Boeing 737 MAX[36]) and to identify key FCAA approval needs and ensure adequate FAA support.[37] In 2011, FAA and EASA assembled a joint team to analyze potential approval process difficulties occurring between the two FCAAs.[38] Also, FAA is negotiating an IPA to implement the BASA with China that will provide clarity on the procedures for U.S. companies seeking foreign

[35]See, for example, "Robinson R66 Certified by EASA," *Aviation Week's Aerospace Daily and Defense Report*, May 8, 2014, p. 3.

[36]The 737 MAX is Boeing's newest family of single-aisle airplanes. It can accommodate up to 200 seats, and the first flight is scheduled in 2016 with deliveries to customers beginning in 2017.

[37]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.

[38]The FAA-EASA Validation Implementation Team is a partnership between FAA, led by Aircraft Certification's International Policy Office, and EASA which studies ways to improve and effectively implement type validation as bilateral partners.

approvals, and is expected to be completed in fiscal year 2015.[39] According to FAA officials, this IPA is also expected to reduce the level of involvement of the Civil Aviation Administration of China (CAAC) in conducting approvals and prevent its certification staff from doing extensive research for each approval project.

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. 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. FAA also noted that there are basic dispute resolution clauses in most of the IPAs, and FAA is working toward adding specific dispute resolution procedures as contained in the agreement with the EU. FAA aims to complete negotiations to add a dispute resolution clause to the BASA with China in fiscal year 2015. 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 twelve 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

[39]The BASA with China was signed in 2005 but will not go into effect until the corresponding IPA is signed.

representatives as consultants in China to help them better engage 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. They added this requires a lot of trust that the local agent will support the best interests of the company, and, at times, this arrangement becomes difficult because the company's experts would prefer to be in charge of the communications with FCAAs during the approval processes. 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 twelve 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 and the Federal Aviation Authority of Russia (FAAR). For example, they noted that EASA's fees are significantly high (up to 95 percent of the cost of a domestic EASA certification)[40]—especially relative to the amount levied by other FCAAs[41]—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

[40]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.

[41]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.

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.[42] 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.

Representatives of two companies also indicated that some FCAAs (e.g., China and Indonesia) routinely conduct site visits to the United States to, for example, review data and conduct test flights. According to the companies we interviewed, these visits are paid for by the U.S. companies seeking the approvals and the cost of these visits are unpredictable because the logistics and duration are determined by the FCAA. For example, representatives from one company told us that one FCAA typically conducts 2-week visits, but they only need one and a half days to provide information. Four companies' representatives told us that they sometimes (1) offer to send their staff to the FCAA or another location because they can often do so less expensively or (2) schedule these site visits to better coincide with a more favorable budget environment for the company.

U.S. Companies Also Reported FAA-Related Challenges Which FAA Is Taking Actions to Address

Reported Challenges Related to FAA

As mentioned previously, FAA provides assistance to U.S. companies by facilitating the application process for foreign approvals of aviation products. U.S. companies seeking to export their aviation products to countries with BASAs in place submit application packages for foreign

[42]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.

approvals to an appropriate ACO.[43] ACO staff facilitates this process by reviewing the application package for completeness and to ensure that all country-specific requirements are met; and then forwarding the package along with an FAA cover letter to the applicable FCAA for review and approval.[44] According to FAA officials, after the FCAA has reviewed the package, sometimes the authority will submit "certification review items"—which document issues related to the original certification of a product that requires an interpretation on how compliance was met or additional clarifications, or represents a major technical or administrative problem—to the responsible ACO for review and response. The assigned ACO staff reviews these items, determines whether a response is required from the applicant company, and coordinates the response to the FCAA. In some cases, ACO staff prepares issue papers which outline, among other things, the certification basis upon which the original type certification was issued. Also, according to FAA officials, FAA staff supports general and technical meetings between applicant companies and FCAAs for foreign approvals.

According to FAA officials, the agency strives to make its process in place to support foreign approvals of aviation products as efficient as possible. In an effort to measure progress toward this goal, FAA has centrally tracked since January 2012 data on foreign approvals, including: the total number of foreign approval applications received and processed, the dates that applications are received by FAA, the dates packages are sent by FAA to the FCAA, and the date when the FCAA ultimately approves or finalizes the application. This data can be broken down by export country, applicant company and product type. As will be discussed later, however, FAA's data on foreign approvals has some limitations. According to FAA staff in two ACOs, each field office is responsible for setting its own time goals related to processing foreign approvals. Officials in three field offices told us that their goal is for each foreign approval package to be

[43]As previously mentioned, U.S. companies seeking to export products to countries with whom FAA has negotiated BASAs should submit foreign approval applications for transmittal through FAA. For U.S. companies exporting products to countries without a BASA, FAA encourages companies to submit such applications through the FAA process, but there are no related requirements for the company to do so. Thus, some companies seeking approvals from foreign countries without a BASA may submit applications directly to respective FCAAs; FAA's data would not capture those applications.

[44]In 2013, FAA issued an Advisory Circular that provided guidance on obtaining design acceptance of U.S. products by FCAAs.

forwarded to the FCAA within 30 days of receipt by FAA. FAA also collects other information about foreign approvals in an effort to assess its bilateral relationships and the overall effectiveness of its process. For example, for some foreign approval projects, FAA field staff must complete a Bilateral Relationship Management (BRM) form to provide feedback on the interaction with a FCAA, which is submitted to FAA headquarters. As we will further discuss later, however, FAA officials acknowledged some issues with the BRM process which they plan to address.

Although FAA seeks to provide an efficient process, companies we interviewed reported challenges that they faced related to FAA's role in the foreign approval process. FAA-related challenges cited by the companies we interviewed fell into three main categories:

- *Process for facilitating foreign approvals.* Most of the U.S. companies in our selection (twelve out of fifteen) 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 out 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.[45] In doing so, FAA is also responsible for working with a FCAA in an authority-to-authority capacity, and communications should flow through FAA to the applicant company. However, representatives of five companies noted that due to a lack of FAA travel funds, FAA staff is 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 that it contributes to delays in obtaining their approvals. Industry stakeholders have continued to suggest that FAA should more thoroughly utilize its delegation authority in several areas to better utilize available FAA resources.[46] 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. FAA's initiatives related to expanding the use of delegation appear to be moving in the right direction, but FAA's efforts has been slower than industry would like and has expected.

- *Staff expertise.* Some of the U.S. companies in our selection (7 out of 15) reported issues related to FAA staff expertise. These cited issues 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 to 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 was ready to share information with a FCAA that the

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

[46]FAA delegates authority to organizations under the organization designation authorization program to carry out certain functions on behalf of the agency. See GAO-14-728T.

applicant company considered proprietary until the company objected and other solutions were found.

FAA Initiatives to Address Challenges

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 in turn 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 FAA's relationships with bilateral partners. As previously mentioned, in 2012, FAA started tracking data on foreign approval packages received and processed. In addition, according to FAA officials, FAA currently tracks the time needed from initial receipt of a foreign approval application by an ACO to the date the application is forwarded to the FCAA. However, currently, there is no formal written requirement for FAA field staff to enter foreign approval application information into the central tracking system, so not all applications are captured. FAA officials told us in December 2014 that the agency is developing formal requirements for field staff to enter data into this system, in order to ensure the integrity of data within its control, but they did not provide an expected time frame for completion. According to FAA staff in one field office, Aircraft Certification's International Policy Office—which manages the central data system—recently updated this system with additional data fields to capture more data on the number of foreign approval projects in process and data for tracking performance metrics.

As previously mentioned, FAA collects Bilateral Relationship Management (BRM) forms as a method for field staff to relay information on specific foreign approval projects—both positive and negative experiences—to headquarters. Based on discussions with us regarding policies related to BRM submissions, FAA officials told us that they plan to clarify BRM submission criteria and response policies for field and headquarters staff to enhance information gathered through this process.

According to FAA, collecting, sharing, and taking appropriate action on information in BRM forms is necessary for FAA to recognize and resolve issues. Initially, FAA officials indicated that field staff is required to submit BRM forms whenever an employee meets with an official from a FCAA or foreign company, but that other issues can trigger the submission of BRM forms, such as when the FCAA is not adhering to the BASA, or is not actively engaged in certification activities.[47] FAA officials also said that designated headquarters officials are required to respond to all BRM forms received within 48 hours.

However, FAA officials at four ACOs we interviewed told us that field staff does not consistently submit BRM forms, and that when staff does submit BRM forms, field staff generally does not receive feedback from FAA headquarters about the information received in the form. For example, one ACO official indicated that his office's staff is only likely to submit the BRM form when there is a significant issue regarding an ongoing foreign approval package, and not to report any positive outcomes or circumstances. Further, the official said that the Aircraft Certification's International Policy Office does not provide feedback on issues raised in these forms. Two officials from a different ACO indicated that the submission of BRM forms varies greatly by project manager, with some managers submitting these routinely whereas others do not submit them at all; these officials also indicated that their staff do not typically receive feedback from headquarters on submitted forms. After hearing about these concerns about the BRM process raised by field staff, FAA headquarters officials indicated that they plan to clarify to field staff when BRM forms should be submitted and also clarify to designated headquarters staff that each BRM form requires feedback to the submitting field staff, but they did not provide an expected time frame for completion. These planned efforts should help improve the robustness and completeness of data shared in BRM forms.

Some current FAA efforts to collect additional data on foreign approvals are aimed at improving FAA's ability to evaluate its relationships with its bilateral partners; such efforts could help to address domestic challenges raised by companies about FAA not having performance metrics to assess how well BASAs are working. For example, according to FAA

[47]According to FAA officials, BRMs should be submitted by field staff at any time when there is non-administrative contact between FAA and a FCAA.

officials, in November 2013, Aircraft Certification formally expanded its process for evaluating international partners to include risk-based evaluation methods.[48] Officials noted that this evaluation process includes gathering quantitative and qualitative information about the effectiveness of bilateral partnerships. Officials explained that FAA uses a structured process to evaluate and to establish a risk factor for each foreign bilateral partner, based on information in the BRM forms, the number of foreign approval projects the respective authority has within FAA's system, and the authority's most recent ICAO airworthiness score,[49] among other factors. FAA officials said that this evaluation system will continue to expand as FAA identifies new data sources.

In conclusion, 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. 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. To demonstrate that it is making progress on these important initiatives, it is also important that FAA continue to develop and refine its outcome-based performance measures to determine what is actually being achieved through the current and future initiatives, and also through improvements to its data tracking for monitoring the effectiveness of its bilateral agreements and partnerships. Such outcome-based metrics will make it easier for FAA to determine the overall outcomes of its actions and relationships, hold field and headquarters staff accountable for the

[48]Specifically, Aircraft Certification's "Bilateral Relationship Assurance and Standardization System" was designed to provide a forward-looking, data driven system for evaluating the health of U.S. bilateral aviation safety partnerships.

[49]Airworthiness is one of the eight core areas evaluated in ICAO's periodic audits of member countries' aviation safety oversight system. The effective implementation score is rated from 0 percent (not Implemented) to 100 percent (fully Implemented). The score represents the percentage of satisfactory airworthiness regulations in place for each member country.

results, and demonstrate to industry stakeholders, congressional stakeholders, and others that progress is being made.

Going forward, we will continue to monitor FAA's progress, highlight the key challenges that remain, and the steps 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.[50] We are hopeful that our findings related to previous and ongoing work in these areas will continue to assist this Committee and its Subcommittee on Aviation as they develop the framework for the next FAA reauthorization act.

Chairman Shuster, Ranking Member DeFazio, and Members of the Committee, this completes my prepared statement. I would be pleased to respond to questions at this time.

GAO Contact and Staff Acknowledgements

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[50] GAO-14-142T

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