United States Government Accountability Office

GAO

Report to the Ranking Democratic Member, Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives

October 2004

AVIATION SAFETY

FAA Needs to Strengthen the Management of Its Designee Programs

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GAO-05-40

October 2004

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Highlights

Highlights of GAO-05-40, a report to Ranking Democratic Member, Subcommittee on Aviation, House Committee on Transportation and Infrastructure

AVIATION SAFETY

FAA Needs to Strengthen the Management of Its Designee Programs

Why GAO Did This Study

The safety of the flying public and the reliability of the nation's aircraft depend, in part, on the Federal Aviation Administration's (FAA) regulation and certification of the aviation industry. FAA delegates the vast majority of its safety certification activities to about 13,600 private persons and organizations, known as "designees," which are currently grouped into 18 different programs. Among other tasks, designees perform physical examinations to ensure that pilots are medically fit to fly and examine the airworthiness of aircraft.

GAO reviewed (1) the strengths of FAA's designee programs, (2) the weaknesses of those programs and factors contributing to those weaknesses, and (3) potential improvements to the programs.

What GAO Recommends

GAO recommends that FAA: (1) establish a program to evaluate all designee programs, giving priority to those programs that have not been evaluated, (2) develop mechanisms to improve compliance with existing designee oversight policies, and (3) upgrade its databases to provide complete and consistent information on all designee programs and the extent to which oversight is occurring.

FAA officials generally agreed with our recommendations, but expressed concerns about our use of an expert panel to identify weaknesses in the programs.

www.gao.gov/cgi-bin/getrpt?GAO-05-40.

To view the full product, including the scope and methodology, click on the link above. For more information, contact JayEtta Z. Hecker, (202) 512-2834, heckerj@gao.gov.

What GAO Found

The key strength of FAA's designee programs is their ability to leverage agency resources. Allowing technically qualified individuals and organizations to perform 90 percent of certification activities enables FAA to better concentrate its limited staff resources on the most safety-critical functions, such as certifying new and complex aircraft designs. For the aviation industry, designee programs enable individuals and companies to obtain required FAA certifications—such as approvals of aircraft designs—in a timely manner, thus reducing delays and costs to industry that might result from scheduling direct reviews by FAA. For example, officials from Boeing told us that using designees has added significantly to the company's ability to improve daily operations by decreasing certification time.

Inconsistent FAA oversight and application of program policies are key weaknesses of the designee programs. FAA headquarters has evaluated only 6 of the 18 designee programs over the last 7 years. FAA conducted the evaluations on an ad hoc basis and lacks requirements or criteria for periodically evaluating these programs. FAA uses these evaluations to determine whether designee programs are complying with agency policies. In addition, FAA field offices do not always oversee designee activities according to agency policy. For example, a recent FAA study found that inspectors were not reviewing designated pilot examiners' work on an annual basis as policy requires. Potential reasons for inconsistent oversight include (1) incomplete databases that FAA uses to manage its oversight of designees, (2) workload demands for FAA staff that limit the time spent on designee oversight, and (3) the lack of adequate training for FAA staff who oversee designees. While we did not find a direct link between inconsistent oversight of these programs and specific safety problems, the lack of consistent oversight limits FAA's assurance that designees perform their work according to federal standards.

Opportunities exist for FAA to improve (1) program oversight to ensure consistent compliance with existing policies by FAA staff and (2) the completeness of databases used in designee oversight. For example, FAA could evaluate more of its field offices and designees—efforts modeled partly on the assessments conducted by some FAA regional offices—to ascertain the extent to which policies are being followed.

Aircraft Undergoing Certification at Organizational Designee Facility

Source: Gulfstream Aerospace.

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Abbreviations

AME	Aviation Medical Examiner
DAS	Designated Alteration Station
DER	Designated Engineering Representative
DOT	Department of Transportation
DPE	Designated Pilot Examiner
FAA	Federal Aviation Administration
GAO	Government Accountability Office
NVIS	National Vital Information Subsystem
ODA	organization designation authorization
PTRS	Program Tracking and Reporting Subsystem

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United States Government Accountability Office
Washington, D.C. 20548

October 8, 2004

The Honorable Peter A. DeFazio
Ranking Democratic Member
Subcommittee on Aviation
Committee on Transportation and Infrastructure
House of Representatives

Dear Mr. DeFazio:

The safety of the flying public and reliability of the nation's aircraft depends, in part, on the Federal Aviation Administration's (FAA) regulation and certification of the aviation industry. Although FAA staff perform many activities crucial to maintaining the safety of air transportation, since the 1920s, FAA has depended on congressionally authorized designee programs to help the agency ensure that the aviation industry meets certain safety standards. FAA's designee programs authorize about 13,400 private individuals and about 180 organizations nationwide, known as "designees," to act as representatives of the agency to conduct many safety certification activities, such as administering flight tests to pilots, inspecting repair work by maintenance facilities, conducting medical examinations of pilots, and approving designs for aircraft parts. These designees are currently grouped into 18 different programs and are overseen by three FAA offices—Flight Standards Service, Aerospace Medicine, and Aircraft Certification Service—all of which are under the Office of the Associate Administrator for Regulation and Certification. Given the vastness of the U.S. aviation industry, designees enable FAA to carry out thousands of certification functions each year. FAA staff[1] are responsible for overseeing the work of individual designees and ensuring that organizational designees (also referred to as "delegations")—companies such as repair stations that have been delegated the authority to perform inspections of aircraft that have undergone major repairs—have systems in place, including staff and procedures, to perform the delegated functions. Organizational designees are responsible for overseeing their employees who perform the delegated functions. Based, in part, on congressional direction, FAA plans to change its designee programs within the next several years so that the agency can rely more on organizational rather than individual designees.

[1]Those staff are safety inspectors in Flight Standards Service, engineers in Aircraft Certification Service, and flight surgeons in Aerospace Medicine.

In response to your request, this report addresses the following questions: (1) What are the strengths of FAA's designee programs? (2) What are the weaknesses of the programs and the factors that contribute to those weaknesses? and (3) What can be done to address the identified weaknesses or otherwise improve the programs?

To address these questions, we obtained and analyzed information from a variety of sources. We identified 62 aviation experts with knowledge and expertise in FAA's designee programs, who participated on a Web-based panel that provided the group's views on the strengths and weaknesses of the designee programs and ways to improve the programs. An initial list of experts was identified through referrals by FAA officials, the National Air Traffic Controllers Association, the Professional Airway System Specialists, and the Aerospace Repair Station Association and through citations in the literature on aviation. We then asked these initially identified experts for additional experts. We continued this process until we had about 10 to 20 experts in each of four categories: (1) designees, (2) FAA inspectors and engineers, (3) independent experts and university academics, and (4) private sector and aviation industry associations. We obtained the experts' views by employing an iterative and controlled feedback process for obtaining individual views and then allowing each participant to respond to the entire panels' comments.

In addition, we obtained and analyzed information from FAA databases that maintain records on designees for fiscal years 1998 through 2003. We assessed the reliability of the databases and found the data sufficiently reliable for the types of analyses that we conducted for this report—including nationwide analyses of the number of designees by program, the geographical location of designees, and the number of designees per FAA staff responsible for designee oversight. However, we found that specific data needed for oversight were not found in some databases, as we discuss later in this report. We also conducted semi-structured interviews with FAA officials, representatives of FAA inspectors and engineers who oversee designees, and designees in Seattle, Atlanta, Los Angeles, and Oklahoma City to obtain information on FAA's oversight of designees. We also interviewed officials from Transport Canada (the Canadian civil aviation authority) to obtain descriptive information on their designee programs. In addition, we reviewed past studies of FAA's use of designees by us, the Department of Transportation's (DOT) Office of Inspector General, and others. We conducted our work from April 2003 through October 2004 in accordance with generally accepted government auditing standards.

Additional information on our methodology and the experts who participated on our panel are found in appendixes I and II.

Results in Brief

Designees perform more than 90 percent of FAA's certification activities, thus greatly leveraging the agency's resources. By permitting nearly 13,400 technically qualified individuals and about 180 organizations to perform thousands of certification tasks each year, FAA officials believe that the designee programs allow the agency to concentrate on what it considers to be the most critical safety areas, a view shared by our panel of experts. For example, while designees conduct routine certification functions, such as approvals of aircraft technologies that the agency and designees have had previous experience with, FAA focuses on new and complex aircraft designs or design changes. In addition, the use of designees expands FAA's access to technical expertise within the aviation community. For the aviation industry, the designee programs enable individuals and organizations to obtain required FAA certifications—such as approvals of the design, production, and airworthiness of aircraft—in a timely manner, thus reducing delays and costs to the industry that might result from scheduling direct reviews by FAA staff. For example, officials from an aircraft manufacturer told us that the use of designees has added significantly to the company's ability to enhance and improve daily operations by decreasing certification delivery time and increasing the flexibility and utilization of company resources. In addition, designees are convenient to the aviation industry due to their wide dispersal throughout the United States.

FAA's inconsistent monitoring of its designee programs and oversight of its designees are key weaknesses of the programs. For example, while FAA has evaluated 6 of its 18 designee programs over the last 7 years and has plans to evaluate 2 more, it has no plans to evaluate the remaining programs because of limited resources, according to a program official. FAA conducted these evaluations on an ad hoc basis usually at the request of FAA headquarters directors or regional office managers. The agency does not have requirements or criteria for periodically evaluating these programs. FAA uses these evaluations to determine whether designee programs are being carried out in compliance with agency policies. However, FAA has not implemented some recommendations from these evaluations. For example, a 2000 evaluation of designated alteration stations recommended that FAA establish a process to periodically assess the effectiveness and applicability of existing oversight policies concerning designated alteration stations and consider feedback from FAA field offices

and designees as part of that process. The agency has not implemented this recommendation. In addition, we found that FAA field offices do not consistently implement agency policies on monitoring, selecting, and terminating designees. For example, inspectors in one region were not reviewing designated pilot examiners work on an annual basis and conducting oversight as required by agency policy. The primary goal of FAA's standards and policies, and its oversight of designees, is the safety of U.S. aviation. While we did not find systematic safety problems associated with FAA's oversight of designees, the agency's inconsistent oversight limits its assurance that the designees' work is performed uniformly in accordance with those standards and policies. Finally, we identified several factors that may have hindered FAA's ability to systematically monitor the designee programs and consistently apply designee oversight policies. First, FAA's oversight is hampered, in part, by the limited usefulness of some agency databases that are designed to capture information on designees. While all the databases have descriptive information on designees, such as their types of designations and status (i.e., active and/or terminated), the databases lack complete and consistent information on designees' performance and do not provide a comprehensive picture of whether FAA staff are carrying out their responsibilities to oversee designees. Second, the workload demands on FAA staff may limit the time they spend on designee oversight. Finally, FAA does not require refresher training for all staff who oversee designees, thereby increasing the risk that some staff do not retain the information, skills, and competencies required to perform their oversight responsibilities.

Opportunities exist for FAA to address these weaknesses by improving (1) oversight of the designee programs to ensure consistent compliance with existing policies by FAA inspectors, engineers, and flight surgeons and (2) the accuracy and comprehensiveness of computerized information on designees so that the databases can be more useful tools for designee oversight. Those opportunities were identified by experts on our panel and our review of practices within FAA and procedures adopted by other countries in administering their programs. For example, FAA could more consistently conduct internal evaluations of its field offices and designee programs—evaluations modeled in part on the assessments performed by some regional and program offices—to ascertain the extent to which its policies and procedures are being followed. FAA's internal review of designated pilot examiners in one regional office could provide a model for evaluations that could be performed by other FAA regions and for other designee programs. The review, which was based on (1) a comprehensive statistical analysis of designee activity in the region, (2) a survey of pilots

who were tested by those designees, and (3) audits of designee files and surveillance reports by FAA inspectors, provided a reasonable method to assess program outcomes, identify the root causes of the lack of compliance with agency policy, and develop corrective action plans to address the root causes. Accurate, comprehensive data on FAA oversight and designee activities are integral to monitoring and evaluating the programs. The database used by FAA's Office of Aerospace Medicine to monitor the activities and performance of aviation medical examiners provides information and uses that could serve as a model for the other offices—Flight Standards Service and Aircraft Certification Service—that lack comprehensive databases on designee activities. Although this database was designed to simplify the processing of airmen medical certification information, Aerospace Medicine uses it to extract information on the status of aviation medical examiners and monitor their activity levels. Careful consideration of such opportunities are important both because of the central importance that the designee programs hold for FAA as well as the agency's plans to expand the use of organizational designees, which will further transform FAA's role to that of monitoring the performance of organizations rather than overseeing the individuals who perform the certification activities. Transport Canada, which expanded its use of organizational designees in the late 1980s, identified the establishment of standardized oversight practices and frequent audits of Canadian designees as important components of its programs.

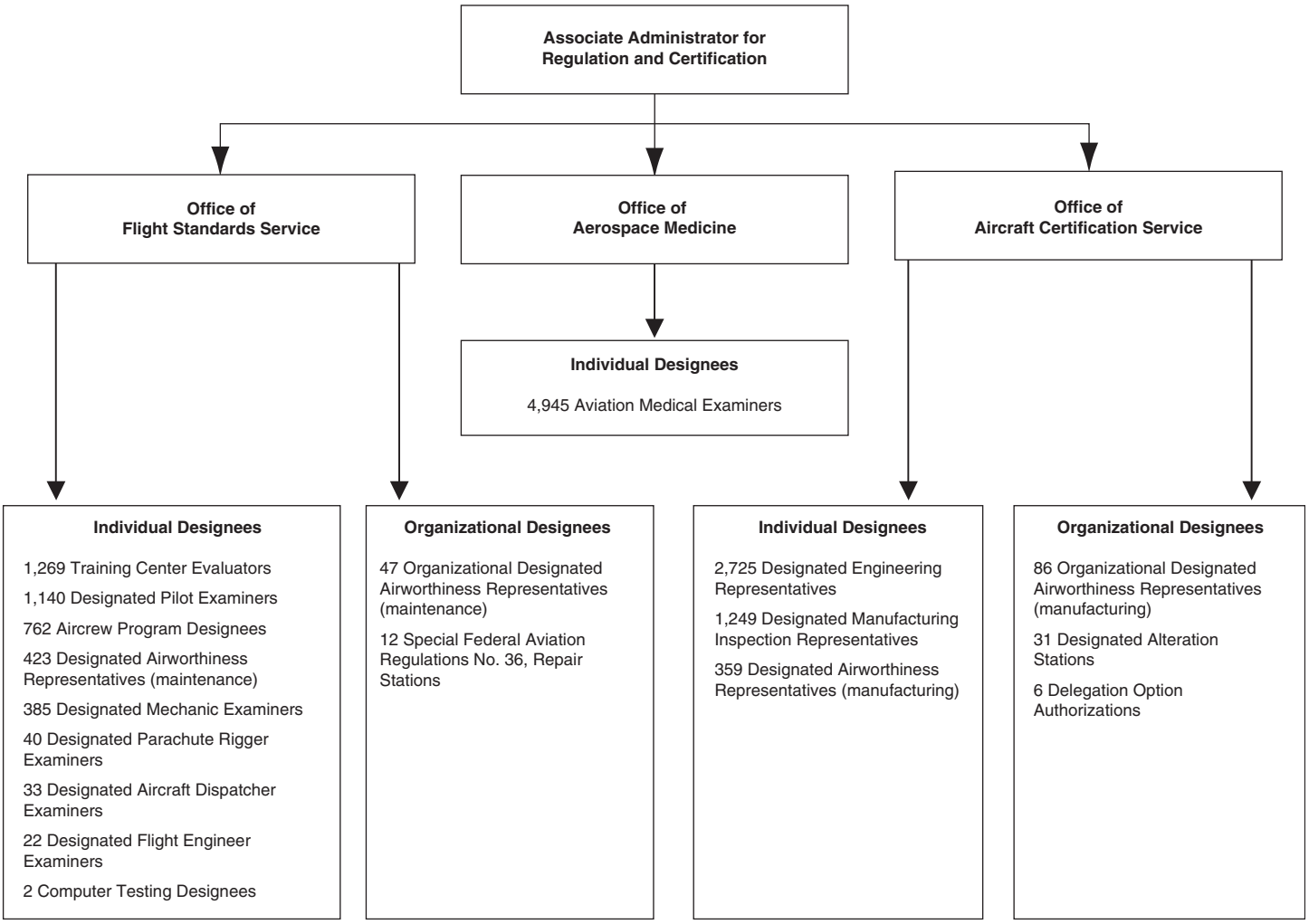
To improve management control of the designee programs, and thus increase assurance that designees meet FAA's performance standards, we recommend that the Secretary of Transportation direct the FAA Administrator to establish a program to evaluate all designee programs, giving priority to those programs that have not been evaluated, and develop mechanisms to more consistently monitor and improve compliance with existing designee oversight policies, including identifying and sharing best practices among FAA programs and field offices. We also recommend that FAA strengthen the effectiveness of its designee databases by improving the consistency and completeness of information on designees activities and performance and FAA oversight. FAA officials generally agreed with these recommendations. However, the agency expressed concerns about our methodology for obtaining expert opinions of the designee programs. Further information is provided in the "Agency Comments" section of this report.

Background

FAA has relied on designee programs since the 1920s to help the agency meet its responsibility for ensuring that the aviation industry meets FAA's safety standards.[2] The programs authorize private persons and organizations, known as individual and organizational designees, respectively, to act on behalf of the agency to perform many activities to ensure the safety of air transportation. Of the nearly 13,600 designees nationwide, approximately 13,400 are individual designees and about 180 are organizational designees, as of May 2004. These designees are grouped into 18 different programs and are overseen by three FAA offices—Flight Standards Service, Aerospace Medicine, and Aircraft Certification Service—all of which are under the Office of the Associate Administrator for Regulation and Certification. Figure 1 shows the 18 different designee programs, the number of designees, and the FAA offices that manage them.

[2]Title 49, U.S.C. 447702(d) provides FAA's legislative authority to use designees and Title 14, C.F.R., Part 183, sets out the types of designations FAA may issue and the process for selecting designees.

Figure 1: FAA Offices That Manage the Different Designee Programs and Numbers of Designees (as of May 2004)



Source: FAA.

Designees perform a large percentage of certification activities on behalf of FAA, such as determining whether aircraft designs, manufacturing, and maintenance meet specific safety standards and certifying the competency of persons that operate aircraft. FAA policy calls for the agency to delegate activities by evaluating the risk involved with such delegation; assessing whether the aviation industry has the experience to perform designated tasks; and delegating activities with defined standards, processes, and

oversight procedures. FAA policy also states that some tasks are not delegated. For example, FAA does not permit designees to make rules, conduct surveillance or enforcement activities against aircraft manufacturers and airlines, or issue and modify aircraft type and production certificates.

Individual and organizational designees' roles and responsibilities vary according to program. For example, individual designees, such as engineering designees, evaluate whether aircraft designs meet FAA safety standards, designated mechanic examiners administer practical tests to mechanic applicants, designated pilot examiners administer practical tests to pilot applicants, and aviation medical examiners certify that pilots are medically fit to operate aircraft. Most individual designees can charge service fees to applicants. Most organizational designees perform similar activities as individual designees, but the organization holds the designation rather than the employees who work for them.[3] The organization is responsible for managing, overseeing, and training its employees who perform the delegated functions. Organizational designees must develop procedures manuals that describe how the organizations will comply with FAA requirements and describe their internal evaluation processes, including internal auditing procedures. An example of an organizational designee is a designated alteration station, which is a company that can issue supplemental type certificates, which are required for aircraft that have been modified from their original design. Further information on the roles and responsibilities of the various types of designees are presented in appendix III.

FAA policy calls for selecting and appointing designees based on several factors, including designees' experience and qualifications, FAA field or program offices' ability to oversee designees, and the need for particular types of designees. Although the selection and appointment policies and procedures differ somewhat for different designee types, these policies generally call for specific and thorough technical reviews of the designee applicants' qualifications, including verifying the applicants' work experience, testing the applicants' knowledge and skills, and examining on-the-job performance. According to FAA policy, FAA officials or flight surgeons evaluate the applicants' experience and qualifications and

[3]Such employees, who actually perform the delegated activities, are referred to as "authorized representatives."

determine whether to appoint or deny the applicant's request for designation.

FAA's field and program offices are responsible for supervising, monitoring, and tracking designees' activities to ensure that designees are performing their authorized functions in accordance with the appropriate regulations, policies, and procedures. FAA policy states that its inspectors, engineers, and flight surgeons should ensure the integrity of the designee programs by evaluating designee performance, interacting with designees on a regular basis, and evaluating technical data prepared by designees. For instance, FAA inspectors are expected to oversee designated pilot examiners by verifying their attendance at required training seminars and meetings, ensuring that they have developed and implemented a plan of action for the practical tests they conduct on pilot applicants, observing annually at least one practical test administered to a pilot applicant, and verifying that the designee has sufficient work activity to justify continuance of the designation. By comparison, FAA inspectors and engineers are expected to oversee organizational designees by ensuring that the organizations' procedures manuals comply with FAA policies on approving the design, production, and airworthiness of aircraft and assessing the technical capabilities of the organization. In addition, FAA officials are expected to provide guidance and oversight of organizational designees by participating in many aspects of major approvals. For instance, FAA officials provide guidance and oversight for projects involving new aircraft design concepts and technology.

Most designees' appointments are effective for 1 year, with the exception of individual and organizational designated airworthiness representatives, who are appointed for up to 5 years and all other types of organizational designees, whose appointments do not expire. FAA can terminate designees for various reasons, including insufficient work activity, unacceptable performance, lapse of qualifications, and lack of FAA need or ability to manage them. Designees can generally appeal FAA's decision to terminate them, except when the decision to terminate has been based on FAA's lack of resources to manage them. Table 1 compares aspects of designee oversight, including how designees are selected and terminated, among the three FAA program offices with designee responsibilities.

Table 1: Comparison of Designee Programs Administered by Three FAA Offices

Program areas	Office of Aircraft Certification Service	Office of Flight Standards Service	Office of Aerospace Medicine
Designee selection	Local FAA panel reviews designee applicants' qualifications and makes appointment.	National selection board (National Examiner Board) reviews designee applicants' qualifications and creates a list of qualified candidates. Field office managers make appointment from the list of qualified candidates.	FAA regional flight surgeons review the qualifications of designee applicants and make appointments.
Designee oversight	FAA inspectors or engineers are required to annually witness the performance of designees. FAA is required to conduct a technical evaluation and an Aircraft Certification Systems Evaluation Program[a] evaluation of delegated organizations every 2 years. Organizational designees are required to perform and document self-evaluation activities.	FAA inspectors are required to conduct annual surveillance of most designees. Organizational designees are required to perform and document self-evaluation activities.	FAA regional flight surgeons are not required to conduct site visits of designees, but are required to assess designee performance in order to renew authorizations.
Database used to monitor designees	Designee Information Network	Program Tracking and Reporting Subsystem and National Vital Information Subsystem	Airmen Medical Certification Information Subsystem
Training for designees and FAA staff who oversee designees	Designees are required to attend initial indoctrination and refresher training every 2 years. FAA staff are required to attend initial training in areas of specialization and take the Delegation Management Course. Refresher training is not required for staff. Organizational designees are responsible for training authorized representatives who perform delegated functions.[b]	Designees are required to attend initial indoctrination and refresher training every 2 years. FAA staff are required to attend initial training in areas of specialization. A specific training course on designee oversight has not been developed. Refresher training is not required for staff. Organizational designees are responsible for training authorized representatives who perform delegated functions.[b]	Designees and FAA staff are required to attend initial indoctrination and refresher training every 3 years.
Termination of designees	Field office managers terminate designees.	Field office managers terminate designees.	Regional flight surgeons terminate designees.

Source: GAO analysis of FAA information.

[a]Aircraft Certification Systems Evaluation Program evaluations were designed to determine if FAA-delegated facilities are complying with the requirements of applicable federal regulations and the procedures established to meet those requirements.

[b]Training covers such areas as functions delegated to the authorization, the organization's processes and procedures, and FAA policy and guidance material.

FAA has proposed expanding the number of organizational designees and reducing the number of individual designees by creating an organization designation authorization (ODA) program. The ODA program would allow FAA to expand and standardize the approval functions of organizational designees and expand eligibility for organizational designees, including organizations not eligible under current FAA rules. Organizational designees under the current programs would be phased out during the first 3 years of implementing the new program, and the organizational designees would be expected to reapply for an ODA. FAA issued a Notice of Proposed Rulemaking for the ODA program in January 2004. While FAA has received many comments in opposition to the proposed program including several that raise concerns that the proposed program would provide less specific and less technical oversight by FAA and would, over time, reduce the safety of the flying public, FAA has also received comments that the proposed program would improve the effectiveness of the agency's oversight of designees.

In addition, FAA has been mandated to develop and implement a certified design organization program, which would affect some designees currently responsible for approving the design and production of aircraft, and aircraft parts and equipment.[4] Under this program, certain organizational designees that design and produce aircraft parts and equipment would no longer be designees, rather they would conduct their approval functions under a newly created FAA certificate. As a certificate holder, the certified design organizations would be subject to more formal processes when FAA grants or revokes the certificate. FAA would develop those processes as part of its requirement to develop a plan to implement a certified design organization program by 2007.

[4]Public Law 108-176, Vision 100 – Century of Aviation Reauthorization Act, requires FAA to develop a plan for implementing a certified design organization program by 2007.

Designee Programs Leverage FAA Resources and Provide Industry with Timely Certification Reviews

Designees perform more than 90 percent of FAA's certification activities, thus greatly leveraging the agency's resources and enabling staff to concentrate on other areas of aviation safety, according to our panel of experts, FAA and industry officials, and FAA staff who oversee designees. The approximately 13,600 designees augment FAA's workforce of about 4,100 inspection staff who are responsible for ensuring industry's adherence to FAA regulations. According to FAA officials, designees are crucial to the certification process by conducting routine activities, thereby allowing the agency to target its direct involvement to the most critical certification functions. For example, designated airworthiness representatives and designated manufacturing inspection representatives routinely support company efforts to perform design enhancements by conducting design conformity inspections in accordance with established procedures, while FAA's Aircraft Certification Service focuses on new and complex aircraft designs or design changes. This information is consistent with the strengths of the FAA's designee programs identified by our expert panel. Table 2 shows the top five strengths identified by our expert panel. There was considerable agreement among the experts on these strengths. All were identified as a "great" or "very great" strength of the designee programs by most of the panelists. No more than 2 of the 62 participating experts felt that these strengths had "no" importance toward accomplishing FAA's safety responsibilities. (See app. IV for additional strengths identified by our expert panel.)

Table 2: Experts' Ranking of Top Strengths of the Designee Programs

Ranking	Strength
1	Use of designees expands available FAA resources.
2	Use of designees allows for more timely approvals than by not using designees.
3	Use of designees expands available technical expertise and specialization.
4	Designees provide greater scheduling flexibility and access to the public.
5	Use of designees enables FAA staff to concentrate on other areas of aviation safety.

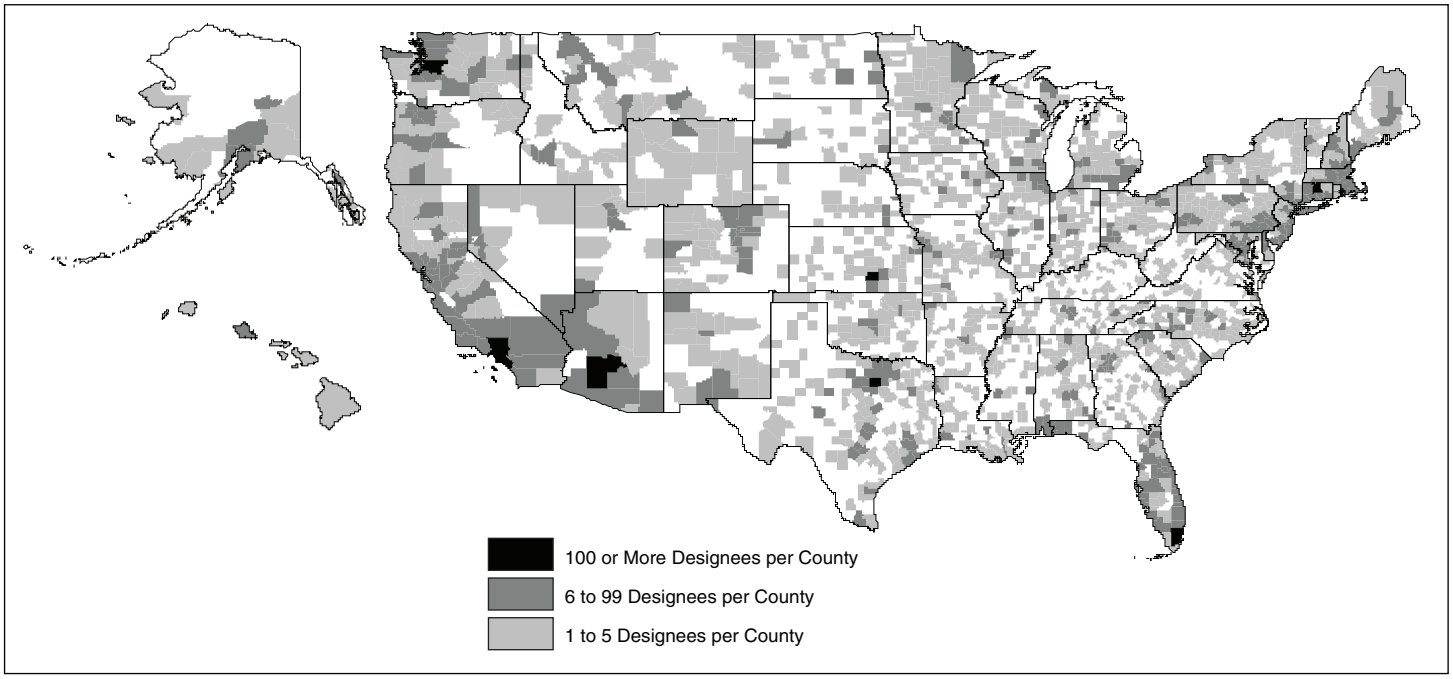
Source: GAO analysis of expert panel information.

Note: Rankings based on responses from 62 experts and the frequency of responses indicating a "great" or "very great" strength.

According to all of the private industry experts on our panel and many of the other panelists, the use of designees allows the aviation industry and

others to obtain more timely approvals and issuance of aircraft certifications than would be possible if FAA staff were solely responsible for those tasks. The designee programs provide more timely service to the aviation industry, while assuring the airworthiness of aeronautical products by utilizing aviation industry expertise to perform many certification activities under the oversight of FAA, according to agency officials. In addition, the designee programs provide the industry with greater scheduling flexibility and access to aviation safety-related services, such as access to aircraft and pilot certification services. For example, Boeing officials told us that the use of designees has added significantly to the company's ability to enhance and improve daily operations by providing consistent certification processes, decreasing certification delivery time, and increasing the flexibility and utilization of Boeing resources, which could reduce costs. Many experts on our panel also concurred that the designee programs are convenient to the aviation industry, as aviation organizations are able to control their production deadlines and not depend on FAA's schedule for certification and approval. Figure 2 shows the geographic distribution of designees and their wide dispersal throughout the United States.

Figure 2: Designees Support FAA Throughout the United States



Source: GAO analysis of FAA data.

Additionally, the use of designees expands FAA's access to technical expertise within the aviation community, as many designees are industry experts. Forty-six of the 62 experts on our panel thought this was a "great" or "very great" strength of the designee programs, including all of the experts from the aviation industry. For example, designated engineering representatives review thousands of calculations, tests, and data involved in aircraft designs, on behalf of the agency to ensure compliance with FAA regulations. Other designees, such as designated manufacturing inspection representatives and designated airworthiness representatives, are technical experts in the "production conformity"[5] or inspection of certain aircraft products or parts and issue certificates or approvals for engines, propellers, and other aircraft parts. Still other designees are aviation medical examiners—physicians who have been delegated the authority to

[5]Production conformity is an inspection necessary to determine that aviation products and related parts conform to an approved design and can be operated safely.

perform physical examinations to determine if applicants are qualified to receive airman medical certificates[6] and student pilot certificates.

FAA's Lack of Consistent Oversight of Designee Programs Is Affected by Incomplete Data, Workload Demands, and Lack of Training

Our work shows that inconsistent oversight is a key weakness of the designee programs. Oversight occurs at two levels: at FAA headquarters, which is responsible for monitoring the practices of its field offices, and at FAA field offices that are directly overseeing designees. First, while FAA has evaluated 6 of its 18 designee programs since 1997 and plans to evaluate 2 more programs, it has no plans to evaluate the remaining programs because of limited resources. Moreover, the agency has not implemented some key recommendations from these evaluations. Second, FAA field offices do not always oversee designee activities according to FAA policy, nor do the field offices apply consistent criteria for selecting and terminating designees. The primary goal of FAA's standards and policies, and its oversight of designees, is the safety of U.S. aviation. While we did not find systematic safety problems associated with FAA's oversight of designees, the agency's inconsistent oversight limits its assurance that the designees' work is performed uniformly in accordance with those standards and policies. FAA's ability to systematically evaluate the designee programs and consistently apply its designee oversight policies may be impeded by three conditions: (1) incomplete data on FAA's oversight of designee activities, (2) workload demands placed on FAA staff who oversee designees, and (3) the lack of adequate training for FAA staff who perform oversight duties.

FAA Provides Inconsistent Monitoring of Its Field Offices

To monitor the effectiveness of its designee programs and determine whether field offices are following FAA policy in their oversight of designees, FAA has evaluated only 6 of its 18 designee programs over the last 7 years. These evaluations encompass about 35 percent of FAA's designees. Moreover, these evaluations vary in quality and comprehensiveness. While FAA has plans to evaluate two additional designee programs over the next several years, it does not plan to evaluate the other 10 designee programs because of limited resources, according to

[6]A pilot must have both a pilot certificate and a medical certificate in order to fly an aircraft, with the exception of glider and balloon pilots, who are not required to have a medical certificate. The pilot certificate never expires. The medical certificate must be updated every 6 months to 3 years, depending on the type of pilot certificate (e.g., airline transport pilots must have their medical certificate updated more frequently than private pilots).

a program official. FAA conducts evaluations of its designee programs on an ad hoc basis, usually at the request of FAA headquarters directors or regional office managers and uses these evaluations to determine whether the programs are being implemented in accordance with agency policies. The agency does not have requirements or criteria for periodically evaluating these programs and identifying the root causes for field offices and staff not consistently following FAA policies. According to FAA officials, the agency is developing quality management standards that will be used to evaluate field offices, including their oversight of designee programs. Both Flight Standards and Aircraft Certification Services plan to obtain approval of their quality management standards in 2006, but have no timeframe for conducting additional evaluations. While Aerospace Medicine has not evaluated its designee program, it uses regular management meetings with all the regional flight surgeons to monitor field oversight activities.

For the 11 designee programs within Flight Standards Service, the office has evaluated the designated pilot examiner program in some field offices and has plans to evaluate oversight practices for aircrew program designees in 2005 and designated mechanic examiners by 2006. However, the office has no current plans to review the oversight practices for the additional eight types of designees because of limited resources, according to a program official. In 2000, FAA's Flight Standards Service created a Quality Assurance Team to undertake standardized evaluations of its field offices to determine how they are conducting business, identify deficient areas, and make improvements as needed.[7] As of July 2004, the Quality Assurance Team had evaluated the oversight of designated pilot examiners at 60 out of 104 Flight Standards field offices to determine whether each office is following FAA policies and standards. The team plans to assess the designated pilot examiner oversight practices of the remaining field offices in 2005. Among the completed evaluations, Flight Standards has identified program weaknesses, such as computerized data records that lack information on required surveillance of designees. The evaluation process calls for reporting any identified deficiencies to the appropriate offices and regions for corrective action. However, the evaluations by the Quality Assurance Team do not identify the root causes or reasons for field offices and staff not consistently following FAA policies and standards. According

[7]The Quality Assurance Team was established as a result of a 1999 recommendation by the International Civil Aviation Organization that Flight Standards Service conduct standardized evaluations of its field offices.

to program officials, root causes of the problems are not identified because that is not the purpose of the audits.

In addition, in 2000, Flight Standards' Southwest Region reviewed the designated pilot examiner program in its nine field offices. While the review did not find any pilots who had been inappropriately certificated, it did find that inspectors were not reviewing pilot examiners' work on an annual basis and conducting oversight as required by FAA policy.[8] The review by the Southwest Region was more comprehensive than the reviews undertaken by the Quality Assurance Team. Both the region and the Quality Assurance Team audited data on designees that were maintained in office files and in a computerized database for compliance with agency policy. However, unlike the Quality Assurance Team, the Southwest Region also gathered and analyzed information on designee activity and surveyed newly certificated pilots and conducted a 2-day conference with designated pilot examiners from the region. This more rigorous evaluation allowed the region to assess the outcomes of this designee program, identify root causes of the lack of compliance with agency policy, and develop corrective action plans, including increased training for inspectors, to address the root causes. Flight Standards has not applied this more comprehensive evaluation to its other eight regions or other designee programs to see if similar problems exist and to take any needed corrective action.

By comparison, from 1997 through 2000, FAA's Aircraft Certification Service assessed five[9] of its six designee programs and took action to identify and correct the root causes of some identified weaknesses.[10] For example, in 2000,[11] the office assessed one designee program—designated alteration stations—in the aftermath of the fatal crash of Swissair Flight 111 in 1998, which killed 229 passengers and crewmembers. The

[8]Federal Aviation Administration, *Southwest Region General Aviation Pilot Examiner Review Final Report* (Fort Worth, TX: Sept. 1, 2000).

[9]See Federal Aviation Administration, *Designated Alteration Station System Assessment Final Report* (Sept. 21, 2000); *Aircraft Certification Service Evaluation of the Airworthiness Designee Management Program* (Dec. 1998); and *Aircraft Certification Service DER Oversight Evaluation* (Sept. 11, 1997).

[10]The office has not assessed its smallest designee program—the delegation option authorization program, which has six designated organizations.

[11]Federal Aviation Administration, *Designated Alteration Station System Assessment Final Report* (Sept. 21, 2000).

Transportation Safety Board of Canada, which investigated the crash, suspected that an entertainment system, the installation of which had been approved by an FAA designee, may have been one factor contributing to a deadly electrical fire on board the aircraft.[12] The Board concluded that FAA's designee program did not ensure that the designated alteration station employed personnel with sufficient aircraft-specific knowledge to appropriately assess the integration of the entertainment system's power supply with aircraft power. In response to the Canadian report, in 1999, FAA investigated its oversight of the designated alteration station involved in the crash and concluded that FAA's oversight of the designee that installed the entertainment systems was in accordance with FAA policy.[13] However, the report went on to note that aspects of FAA's policy for overseeing designated alteration stations lacked clarity and needed revision. To address this problem, the report recommended a nationwide study of FAA's oversight of designated alteration stations. This subsequent study, conducted in 2000, found general oversight weaknesses, including the lack of a national standard policy on management and oversight of designated alteration stations and a general lack of FAA supervision of these designees. To address the root cause of the problems identified, the 2000 study recommended revisions to FAA's order concerning oversight of designated alteration stations, which were made and issued in August 2002. The 2000 review further recommended that the office establish a process to periodically assess the effectiveness and applicability of existing policies concerning designated alteration stations and consider feedback from FAA field offices and designees. The Aircraft Certification Service has not implemented this recommendation to directly assess the policies in place, but continues to rely on informal feedback from FAA field offices and industry.

In addition, FAA has not fully implemented its 2002 policy to conduct technical evaluations of 49 organizational designees, located primarily in

[12]Transportation Safety Board of Canada, *Aviation Investigation Report, In-Flight Fire Leading to Collision with Water, Swissair Transport Limited McDonnell Douglas MD-11 GH-IWF, Peggy's Cove, Nova Scotia 5 nm SW, 2 September 1998*, report number A98H0003 (no date).

[13]Federal Aviation Administration, *Special Certification Review Team Report on: Santa Barbara Aerospace STC ST00236LA-D Swissair Model MD-11 Airplane In-flight Entertainment System* (June 14, 1999).

the Aircraft Certification Service.[14] Technical evaluations allow the agency to determine whether the products and data produced by the organizations are technically acceptable and comply with FAA policies. According to FAA officials, the agency had conducted 10 technical evaluations as of June 2004. FAA is allowing organizational designees time to perform approvals under their new procedures before performing the technical evaluations, according to the agency. In the meantime, according to FAA officials, these organizational designees are being evaluated under the current Aircraft Certification Systems Evaluation Program, which require an evaluation every 2 years.

Field Offices Provide Inconsistent Oversight of Designees

Concerns about the consistency and adequacy of designee oversight that FAA field offices provide have been raised in previous reports,[15] including FAA's evaluations of various designee programs, which we discussed earlier in this report; by individuals we interviewed during site visits; and by our expert panel. Table 3 shows the top five oversight weaknesses identified by our experts. The top-ranked weakness—inconsistent oversight by FAA offices—was identified as a "great" or "very great" weakness by 36 of the 62 experts. No more than 6 of the 62 experts felt that these top five factors posed "no weakness" and between 5 and 13 other experts—believed these factors presented "little" weakness. (See app. IV for additional weaknesses identified by our expert panel.)

[14]These include 31 designated alteration stations, 12 Special Federal Aviation Regulations No. 36 (repair stations), and 6 delegation option authorizations.

[15]See bibliography at the end of this report.

Table 3: Experts' Ranking of Top 5 Oversight Weaknesses

Ranking	Weakness
1	FAA offices level of oversight and interpretation of rules are inconsistent.
2	Inactive, unqualified, or poor performing designees are not identified and removed expeditiously.
3	It is difficult to terminate poor performing designees.
4	Inadequate surveillance and oversight of designees.
5	FAA has not made oversight of designees a high enough priority.

Source: GAO analysis of expert panel information.

Note: Rankings based on responses from 62 experts and the frequency of responses indicating a "great" or "very great" weakness.

Designees and industry officials that we spoke with indicated that FAA's level of oversight and interpretation of rules are inconsistent among regions and among offices within a region. For example, several designees whom we spoke to provided the example of one Aircraft Certification field office that was stricter in its application of FAA standards than other offices—i.e., the stricter office would not approve submittals for supplemental type certificates that would be approved by other FAA offices. As a result, applicants tend to "shop around" to find those offices that will provide expedited approvals, according to these designees. Another designee and an aviation parts manufacturer told us that FAA field offices required different paperwork and interpreted FAA rules differently for the same work. For example, a manufacturer of fortified cockpit doors found that field offices in Los Angeles and Seattle interpreted regulations differently and required different paperwork to process the same type of approval. Designated mechanic examiners that we spoke with provided similar examples of inconsistencies among field offices. They cited instances in which one field office would reject applications that another field office would approve. Further, an industry representative that we spoke with provided examples of inconsistencies among FAA offices concerning whether approval in the form of a supplemental type certificate is needed—with some offices requiring a supplemental type certificate and other offices considering the same type of manufacturing or maintenance work minor and requiring no approval. A designated engineering representative noted that different FAA staff required different levels of detail in the standard FAA form that engineering designees submit to show their completed work. Another industry representative noted the lack of standardized requirements for data submittals from certain types of designees, such as designated engineering representatives. A standardized

checklist would help various FAA field offices to consistently interpret regulations, according to the industry representative. According to FAA officials, in certain cases, there are reasons for inconsistent application of rules. For example, in the case of cockpit doors, the projects typically varied across offices depending on data submitted by previous applicants and the capability of the applicant. In order to reduce unnecessary administrative burdens on applicants, FAA's policy specifies that once an applicant had demonstrated that a design change met FAA requirements, subsequent applicants for a similar alteration may not be required to conduct all the same tests required of the previous applicant, according to FAA officials. Agency officials further stated that checklists are created for each project and that standardized checklists cannot be used because each project is unique. This was disputed by FAA staff that we spoke with, some of whom had created standardized checklists to use for all the designees that they oversaw.

We also found that, in some cases, the ability of FAA field offices to oversee designees is affected by designees working outside of their normal locality and the amount of written details about that work that is provided to FAA. FAA policy allows designees to work outside of their assigned geographic area but, in certain circumstances, requires designees to notify the local FAA office.[16] This situation can occur, for example, when specialized engineering expertise is needed by an aviation parts manufacturer and the closest designee with that expertise is located in a remote FAA region; in which case, the company may request the services of a designee from outside the region. We spoke with one designated engineering representative based in Atlanta who regularly worked outside his geographic area. In 2001, 7 of 12 projects that he approved as a designee were outside the Atlanta area; in 2002, 20 of 33 projects were outside the area, and in 2003, 4 of 28 projects were outside the area. When he works out of his geographic area, he normally contacts the field office where he is conducting his work only after the work is completed and submits the required paperwork to his FAA office in Atlanta upon completion of a project. He and other designated engineering representatives told us that they are likely to include minimal details in the forms submitted to FAA because that information can be requested under the Freedom of

[16]When designated engineering representatives conduct work related to field approvals outside of their assigned geographic areas, they are not required to contact the field office where they are conducting that work. On the other hand, when their work is related to issuing type certificates or supplemental type certificates outside their assigned geographic area, they are required to contact the FAA field office where they are conducting that work.

Information Act. An FAA engineer also told us that designated engineering representatives may be reluctant to include details on how they certify aviation products. Since FAA inspectors have little opportunity to witness the work being performed by designees that work outside their area, inspectors rely heavily on paperwork reviews. When the paperwork provides insufficient details about the designees' activities, FAA staff spend additional time requesting the needed information from designees, according to an FAA engineer.

In addition, Flight Standards Service staff told us that more direction and clarity was needed concerning the amount of surveillance that inspectors should be conducting over designees. Policy guidance describes how inspectors are to conduct surveillance of designees, and the service develops a national workplan each year that determines the number of inspections of designees that inspectors and engineers will perform. Several FAA field office managers that we spoke with believed that the oversight called for in the national workplan does not allow them to target oversight to those designees that need more or less surveillance. In addition, according to several FAA inspectors that we spoke with, it is difficult during their site visits of designees to identify those who are improperly certifying applicants or conducting inappropriate activities, such as approving parts beyond their authorization. The inspectors told us that they usually find out about improper designee activities by noticing mistakes on the forms submitted by designees and receiving complaints from designees' clients. A designee that we spoke with further explained that, because FAA visits are arranged in advance, designees have time to make sure things are done correctly during the visit. Flight surgeons, by comparison, are not required to conduct site visits of designees. Due to limited number of staff and resources available to conduct site visits, flight surgeons primarily conduct those visits only after problems have been identified by others, such as complaints by clients.

We also found that field offices did not consistently follow established policy for selecting designees. While we did not find evidence that unqualified designees were selected, this situation may result in not selecting the best qualified candidates. Nineteen of the 62 experts on our panel believed that FAA does not consistently follow its own designee

selection criteria[17]—which are based on designee candidates experience and qualifications, FAA field offices' ability to oversee designees, and the need for particular types of designees[18]—but rather appoints designees based on personal associations. Moreover, 9 of the 17 FAA inspectors and engineers on our panel rated the practice of awarding delegation status based on personal associations with FAA management as a "great" or "very great" weakness of the designee programs. FAA policy requires multiple parties to review applicant's qualifications and reach consensus on appointment decisions, but we found that field offices sometimes add their own criteria. For example, Flight Standards Service has established a National Examiners Board to review all designee applications and prepare a list of qualified candidates from which field office managers must select designees. The board was established to provide an objective, standardized process and to move away from the previous ad hoc practices of appointing designees that were often based on selecting personal acquaintances. However, we found that this process does not always work as intended. For example, in a Flight Standards field office that we visited, an applicant for designed airworthiness representative is required to have a letter of recommendation from the manager of the field office. According to an inspector at that field office, this practice has resulted in screening out otherwise qualified individuals. According to FAA officials, personal associations is an important factor in selecting and appointing designees. They consider personal knowledge and experience with the applicant an important consideration in the selection process, without which it is difficult to know whether applicants have the necessary qualifications and abilities.

In addition, FAA's internal evaluations confirm our work that FAA offices provide inconsistent oversight and interpretation of rules concerning designees, which limits the assurance that the agency has that the designees are performing certification work properly. For example, as mentioned previously in this report, in 2000, an FAA evaluation of designee pilot examiner oversight in one region found that inspectors were not

[17]Nineteen experts indicated this factor was a "great" or "very great" weakness of the designee programs; 4 experts felt this factor was not a weakness; 17 experts felt that this posed "little" weakness.

[18]Each type of designee has unique qualification requirements, which are defined in FAA Order 8100.8 Chapter 4.

conducting oversight as required by agency policy.[19] That review further found that up to 30 percent of the designated pilot examiners in the region were not conducting complete practical tests of pilot certificate applicants and not consistently holding pilot applicants to the standards of the practical test.[20] In addition, an FAA-industry study found that project approvals by certain designated engineering representatives, which do not require FAA review, combined with the lack of designee and FAA technical expertise in certain specialized areas, have resulted in designs that were deficient or not in compliance with FAA regulations.[21]

We also found that FAA offices do not always identify and remove inactive or poor performing designees expeditiously, which may be due to reluctance on the part of managers, engineers, and inspectors to take disciplinary action. FAA policy calls for providing counseling, remedial training, or limiting or terminating designees' authority for insufficient work activity and poor performance. For example, since 1998, Aircraft Certification Service has terminated approximately 770 designees for such reasons as insufficient activity, lapse in qualifications, or lack of care.[22] However, a 2002 study conducted jointly by FAA and industry found that it was the perception of some FAA field staff who oversee designees that terminating designees is difficult because of fear of litigation. According to the report, this perception had resulted in little, if any, disciplinary action being taken against designees when it may be warranted.[23]

Our interviews with FAA field office managers and staff confirmed that they are reluctant to take disciplinary action against designees. For

[19]Federal Aviation Administration, *Southwest Region General Aviation Pilot Examiner Review Final Report* (Fort Worth, TX: Sept. 1, 2000).

[20]Practical test standards are areas of operating aircraft, such as flight procedures or flight maneuvers, in which pilot applicants must demonstrate their knowledge and skills before receiving pilot certificates. FAA developed these standards for FAA inspectors and designated pilot examiners to use when conducting practical tests to pilot applicants.

[21]Federal Aviation Administration, *Commercial Airplane Certification Process Study: An Evaluation of Selected Aircraft Certification, Operations, and Maintenance Processes* (Washington, D.C.: March 2002).

[22]During that time period, 2,850 additional designees were terminated for reasons not associated with disciplinary action, such as change of employment, retirement, or the request of the designee.

[23]See footnote 21.

example, managers in the Seattle and Oklahoma City field offices and inspectors and engineers in the Atlanta and Los Angeles field offices told us that rather than take disciplinary action against poor performing designees, they wait and terminate the designee during the renewal process, as long as designees have not committed any criminal acts. According to these officials, FAA field offices prefer to not renew poor performing designees rather than terminate them because FAA management wants to avoid legal appeals that designees can make if the agency decides to terminate them for poor performances. According to FAA field inspectors that we spoke with, it is difficult for them to terminate poor performing designees—such as those who continue to omit information in their documented work despite training and counseling—because the process is lengthy and time-consuming. According to one FAA engineer, when she tried to remove a designated engineering representative for making incorrect approvals, she was required by FAA policy to first notify the designee of FAA's intent to terminate the designation, and then to document the specific reasons for the recommended removal. The process took 2 to 3 years, according to the inspector. After designees are removed, they are allowed up to two appeals, which can further lengthen the removal process. FAA officials acknowledged that misunderstandings of the removal process among inspector staff will continue without the development of specific guidance and training on the designee termination process. Our analysis of data from the Aircraft Certification Service found that the office terminated 15 designees because of "lack of care or judgment" and terminated 121 by not renewing their designations over the last 5 years.

In addition, FAA field and program office managers have some discretion over terminating poor performing and inactive designees, but because FAA's criteria for terminating designees is not specifically defined, each field and program office determines when poor performance or lack of activity constitutes grounds for termination. According to a manager in FAA's Civil Aerospace Medical Institute, one region may terminate an aviation medical examiner who is consistently more than 30 days late in transmitting medical certification data, while another region may terminate an aviation medical examiner who is consistently more than 60 days late. An FAA engineer told us that designees in the Aircraft Certification Service are seldom terminated because of low activity level. Of the approximately 770 designees for Aircraft Certification Service that were terminated since 1998, according to information we analyzed in FAA's Designee Information Network database, about 230 (30 percent) were terminated for inactivity. In addition, a manager for a Flight Standards field office told us that the criteria the office uses for terminating poor performing designees include

whether the termination will result in a loss of income for individual designees. This criterion is not included in FAA policy nor considered by other field or program officials with whom we spoke.

Consistent application of oversight policies is important to ensure that designees follow FAA policies and that they remain free from pressures from employers or clients that may lead them to bypass those policies. For example, in 1999, FAA found that designated mechanics' examiners in the Orlando, Florida, area had not adhered to FAA's standards and had fraudulently indicated that hundreds of mechanic applicants had passed the certification examination. This resulted in FAA retesting many of the mechanics. In addition, some designated engineering representatives are salaried employees of the manufacturers whose products they are approving on behalf of FAA. In one case, a designee told us that another designated engineering representative was an executive officer of the company whose products he was approving, creating an apparent conflict of interest. The designee also told us that designees are under pressure by their employers to certify products. He stated that designated manufacturing inspection representatives are sometimes pressured by their employers to approve aviation products for export, under the threat of being fired. According to FAA officials, agency policy discourages the appointment of designated engineering representatives who are executives within a company where the primary job duties are schedule-driven and devoted to the output of the company's whole saleable products. Other designees, such as designated pilot examiners, are employed by flight schools and test pilot applicants for those schools. Since those designees depend upon the flight school for employment and referral of applicants, there could be an incentive for the designated pilot examiner to compromise the integrity of pilot tests. Such situations present the potential risk that designees may be pressured by employers to bypass FAA requirements in order to meet schedules or attract additional students. FAA officials acknowledge that an inherent conflict of interest exists in the designee programs, but did not view it as a weakness because designees can be held liable for deficiencies in their work. However, concerns were expressed to us by several FAA field managers and inspectors, that smaller organizations, such as repair shops, may be willing to risk liability and bypass agency requirements.

Poor Data, FAA Staff Workload, and Insufficient Training for FAA Staff May Contribute to Oversight Weaknesses

FAA's oversight of its field offices and designees is hampered by the lack of comprehensive information in some of the agency's databases that are used to capture information on designees,[24] the workload demands facing FAA staff who oversee designees, and insufficient training for FAA staff on designee oversight.

Designee Databases

The databases for the offices of Flight Standards Service and Aircraft Certification Service were not designed to capture information concerning oversight performed by the managing offices and do not provide a comprehensive picture of FAA engineers' and inspectors' oversight activities or the activity levels of designees. For example, FAA policies require FAA inspectors in the Aircraft Certification Service who oversee manufacturing designees to update the designee management database, Designee Information Network, every time they oversee or monitor a designee's performance. However, no data field is provided to capture information on these oversight visits. A field for comments is available for FAA staff to indicate when a designee performance evaluation was conducted, but our review of the data files for 1998 through 2003, found that this information was not consistently noted. Moreover, FAA policy does not require its engineers to document their oversight of engineering designees in the database. Thus, FAA cannot readily ascertain how often staff in the Aircraft Certification Service monitored and evaluated designees, other than the minimum levels required to renew the designees' authority.[25] According to officials in that office, information on how often staff review designee performance is recorded in designees' paper case files, which are maintained at the field or program offices. In addition, the Designee Information Network does not contain information on the number and type of approvals that the individual designees are conducting. As a result, FAA lacks a single, comprehensive data source that could be

[24]The four databases are the National Vital Information Subsystem and Program Tracking and Reporting Subsystem used by Flight Standards Service, the Designee Information Network used by Aircraft Certification Service, and the Airmen Medical Certification Information Subsystem used by Aerospace Medicine.

[25]Most designees' appointments are effective for 1 year, with the exception of individual and organizational designated airworthiness representatives, who are appointed for up to 5 years, and all other types of organizational designees, which are appointed indefinitely. According to FAA policy, the minimum level of oversight requires FAA engineers and inspectors to review designees' files for project activity in order to renew the designees' authority.

used to facilitate designee oversight by providing FAA a means to prioritize oversight activities and engineer workload. According to FAA officials, the fact that all oversight information is not captured in a single database does not directly affect the agency's ability to effectively oversee designees.

Two other databases—the Program Tracking and Reporting Subsystem (PTRS) and National Vital Information Subsystem (NVIS)—used by Flight Standards Service inspectors to monitor designees also do not completely track designees' activity level. According to FAA officials, PTRS was designed to track activities by FAA inspectors, such as noting when FAA inspectors conducted surveillances of designees, while NVIS was developed to track basic profile information on designees, such as their names, addresses, types of certification, designated authorizations, and status. PTRS can be used to track the activity levels of designees; however, it requires the FAA inspector to input the data each time they receive a certification package from a designee, but past reviews have found problems with incomplete information in the database. For example, in 2003, the Quality Assurance Team mentioned earlier found that required information on designee oversight was missing from the two databases or incorrect. The team noted records that would indicate the type of surveillance conducted (such as an observation of a complete or partial test) were missing from PTRS and records in NVIS that lacked renewal dates and contained inaccurate information on designee training and authorizations. By comparison, Aerospace Medicine has one database—Airmen Medical Certification Information Subsystem—to track information on aviation medical examiners, including information on the number of medical certificates issued by each medical examiner and demographic, training, and oversight information for each designee. Our review of that database found reasonably complete information; we did not check the accuracy of the information.

FAA Staff Workload

FAA's oversight of the designee programs may also be weak, in part, because of the workload demands facing agency staff who oversee designees. In addition, the amount of time that FAA staff spend on other aviation safety activities, such as monitoring air carrier operations, affects the amount of time spent on designee oversight. FAA policy recognizes that each designee oversight scenario is unique and allows variations in determining the extent of oversight needed to meet minimum annual requirements. FAA policy also states that the ability to provide adequate oversight depends on balancing the level of FAA staffing to the agency's workload and the number of designees. FAA policy, however, does not specify an acceptable workload for meeting this criterion. For example,

each managing office must periodically verify adequate FAA staffing numbers based on the type and amount of the work performed by staff who oversee designees. FAA policy provides no further guidance for determining adequate numbers for proper oversight. FAA officials stated that the level of specificity in the guidance is adequate for determining staff workload with designees and that it would be difficult to determine an exact staffing ratio because of factors such as the size of facilities, the experience of designees, and the complexity of projects. However, the lack of clear policy guidance and staffing standards results in wide variation in the ratio of designees to FAA staff among offices and programs and makes it difficult for the agency to measure and account for its staff resources. For example, our review of FAA data showed that, on average, the ratio of designees to FAA staff is about 6 to 1 in the Aircraft Certification Service, about 5 to 1 in Flight Standards, and about 440 to 1 in Aerospace Medicine. The ratios for individual FAA staff ranged from 1 designee to 1 FAA staff in several Aircraft Certification offices to about 870 designees to 1 FAA staff in Aerospace Medicine. Information we gathered from site visits at three of FAA's nine regions also showed a wide range of workload ratios. For example, information we gathered at Flight Standard's Northwest Mountain Region showed ratios among field offices ranging from 1 designee to 1 inspector to 100 designees to 1 inspector. Variations in the ratios of designees to FAA staff are due to the type of designee and the complexity of their work, according to FAA officials. However, several engineers in the Aircraft Certification Service with whom we spoke expressed concerns that a designee to staff ratio higher than 10 to 1 limits the time they have to adequately monitor the work performed by designees. One Aircraft Certification engineer told us that while he was currently responsible for overseeing 10 designated engineering representatives, in the past, he had been responsible for between 30 and 60 designees, which was too many to adequately oversee. Flight Standards Service officials acknowledged that staffing standards need to be established. The National Academy of Sciences is currently evaluating the staffing standards for the office of Regulation and Certification, which encompasses Flight Standards, Aircraft Certification, and Aerospace Medicine, and expects to complete the study in 2005.

Past reports by us and others pointed out that escalating workloads and/or high turnover rates for FAA staff continue to diminish FAA's ability to oversee designees. For example, over 10 years ago, we reported that, in response to a dramatically escalating workload, FAA had delegated aircraft

certification duties to designees without defining a clear role for its staff to ensure that they were effectively involved in the certification process.[26] Since then, FAA has issued comprehensive policies governing the selection, appointment, and oversight of individual and organizational designees. We also pointed out high turnover rates (107 percent over the previous 10 years) for FAA engineers who oversee designees. In addition, internal FAA documents from 2000 cited the disparity between the agency's Aircraft Certification Service' workload and its staffing levels, noting that staff resources have not kept pace with increasing workload. To update the information in our 1993 report, a 2002 study prepared for FAA confirmed that the two FAA field offices—Seattle and Los Angeles—responsible for the majority of commercial transport airplane oversight still had high turnover rates (115 percent over an 8-year period) and that over 50 percent of the engineers in those offices had less than 5 years of FAA experience.[27] The report further noted that the consistently high turnover rate and associated low experience levels were indicators of the limited time available for FAA engineers to acquire the necessary experience and to understand the increasingly complex systems and human factors associated with modern aircraft, which are among the skills needed to oversee the work of designees. FAA noted that the annual turnover rate of engineers at the Seattle and Los Angeles field offices had declined in recent years, indicating that from fiscal years 1999 through 2004, the average annual rates were 3 percent and 4 percent, respectively for the two offices.[28]

In addition, designees told us that FAA staff who oversee designated engineering representatives change frequently. A designee monitored by a Seattle field office told us that he estimated that every 3 years he reported to a different FAA staff person. Another designee told us that in the last 5 years, he had reported to six different FAA staff. As a result of frequent changes in FAA staff, the designees felt frustrated in the amount of time that it took to establish a good working relationship with each new FAA staff person. We found a similar situation in an Atlanta field office, where

[26]GAO, *Aircraft Certification: New FAA Approach Needed to Meet Challenges of Advanced Technologies*, GAO/RCED-93-155 (Washington, D.C.: Sept. 16, 1993).

[27]See footnote 21.

[28]The turnover rates reported in the two studies were cumulative over the time period, while FAA provided information on an annual basis. The turnover rates from FAA, therefore, are not comparable to the rates from the two studies.

an FAA engineer explained that high turnover of engineers in the office made it difficult to oversee the activities of designated engineering representatives. The difficulty arises, according to the FAA engineer, because designees typically submit forms at the end of each quarter to document their activities, which FAA engineers then review. When a designee's FAA advisor changes during a quarter, the only information that the new advisor has concerning the designee's work is the information contained in the form, because the new advisor does not have information concerning discussions between the prior FAA staff person and the designee. Furthermore, as we mentioned earlier in this report, both an FAA engineer and designated engineering representatives told us that designated engineering representatives are reluctant to include details on how they certified a product, fearing that the information could be requested and made public under the Freedom of Information Act.

FAA provided us with information on how the size of its workforce has changed over time in comparison with the number of designees they oversee for some designee programs. For example, based on FAA's staffing information, the number of designees overseen by engineers and inspectors in the Aircraft Certification Service decreased slightly from 6.7 to 1 in fiscal year 1999 to 6.5 to 1 in fiscal year 2003. However, FAA could not provide similar information for Flight Standards Service or Aerospace Medicine to determine how the agency's workforce has changed over time in comparison to designees. Some members of our expert panel commented that the number of FAA staff who oversee designees has not increased at the same rate the aviation industry has grown. Experts also stated that FAA staff do not have time to provide adequate oversight of designees for whom they are responsible for overseeing. Additionally, FAA inspectors and engineers that we spoke with commented that as FAA's dependence on designees continues to increase, their ability to conduct oversight—consisting of designee supervision, monitoring, and tracking, as required by FAA policy—will continue to decrease. According to some FAA engineers that we spoke with, dramatic increases in their workload has resulted in their ability to review only a minimal percentage of work conducted by designees.

The situation in Aerospace Medicine provides another example of workload issues potentially hampering oversight. Between July 2002 and June 2003, the nine regional flight surgeons in Aerospace Medicine each headed a team of about three or four FAA staff and monitored over 4,900 designated medical examiners, who conducted more than 420,000 medical examinations. Given high workload demands on the flight surgeons and

their staff, in many cases, they are not able to perform site inspections to ensure that designee offices and facilities meet FAA standards, according to Aerospace Medicine officials. These officials also noted that site visits would help FAA ensure that designees are in compliance with FAA's facility and equipment requirements, such as verifying that the designees have access to acceptable facilities to perform physical examinations, meet minimum vision and hearing test equipment standards, and have access to approved diagnostic instruments. According to regional flight surgeons, due to the limited number of staff and resources available to conduct site visits, they primarily conduct those visits only after problems arise due to unprofessional behavior or unethical practices on the part of the designated examiners. Such questionable designee practices are brought to the attention of regional flight surgeons by the Civil Aerospace Medical Institute, FAA field staff, and through complaints by the designees' clients. According to FAA officials, limited resources also hinder the flight surgeons' ability to identify unprofessional or unethical designated medical examiners.

Inspectors in Flight Standards also told us of workload demands affecting designee oversight. For instance, one FAA inspector provided an example of a designated pilot examiner who conducted approximately 400 practical tests in 1 year. FAA policy calls for inspectors to conduct one annual inspection of each designated pilot examiner and to carry out additional surveillance of pilot examiners who perform more than 50 practical tests per quarter. Because of high workload, the inspector was only able to conduct one annual inspection of the designee with high activity and was not able to conduct the required additional surveillance.

The ability of FAA staff to oversee designees is also affected by the amount of time that they spend on a wide variety of other aviation safety activities and the priorities that are given to the various activities. For example, FAA officials from Flight Standards Service commented that inspectors are also responsible for other activities such as taking enforcement actions, evaluating air carrier operations, monitoring general aviation activities, and conducting accident investigations. Several FAA engineers that we spoke with said that their first work priority was to conduct accident investigations and draft airworthiness directives; their second priority was to draft policy and regulations; and their third priority was designee oversight. FAA staff that we interviewed estimated that they spend about 5 to 15 percent of their time overseeing designees, depending largely on the number of designees for whom they are responsible. According to one estimate by an FAA engineer who is responsible for overseeing 25

designees in the Aircraft Certification Service, approximately 10 percent of his time—or about 4 hours per week—is devoted to designee oversight. Inspectors and engineers also pointed out that poor-performing designees can significantly increase their workload as they require greater surveillance and more frequent interactions.

Training for FAA Staff

FAA's oversight of the designee programs may also be weak, in part, because of insufficient training for staff who oversee designees. Twenty-one of the 62 experts on our panel cited a lack of training in designee oversight for FAA inspectors and engineers as a "great" or "very great" weakness of the designee programs. Six out of 15 FAA inspectors or engineers on our expert panel considered this situation to be a "great" or "very great" weakness. (Six experts felt the lack of training was not a weakness, and 6 other experts felt it posed little weakness.) Flight Standards Service officials acknowledged that additional oversight training would be helpful to address training weaknesses.

FAA's Aircraft Certification Service and Aerospace Medicine have established initial training requirements for newly hired staff, which include courses on designee oversight. For example, the Aircraft Certification Service requires staff to take the Delegation Management Job Functions Course, which focuses on overseeing designees and is designed to teach the skills necessary to select, supervise, and terminate designees. FAA's Aerospace Medicine requires regional flight surgeons to take initial training on policies and regulations pertaining to designees. Aerospace Medicine staff who assist flight surgeons do not receive initial training concerning designees, but periodically attend training at the Civil Aerospace Medical Institute in Oklahoma City or are informed of relevant policy changes through teleconferences, according to officials in the office. By comparison, Flight Standards Service does not provide initial training to its inspectors on designee oversight. Instead, this office requires new inspectors to attend initial training in their areas of specialization. Flight Standards is currently evaluating the Delegation Management Course used by Aircraft Certification to determine if the course meets inspectors' needs for overseeing designees, according to several officials in Flight Standards.

Once inspectors and engineers in Flight Standards and Aircraft Certification services have fulfilled their initial training requirements, they are encouraged, but not required, to participate in refresher training. In contrast, FAA requires designees to receive formal refresher training every 2 or 3 years. By not requiring its oversight staff to take refresher training, FAA cannot maintain reasonable assurance that its inspectors and

engineers stay current on changes to policies and procedures. In fact, one FAA manager told us that, in his office, FAA engineers who oversee designees needed additional training, especially in the area of managing designees. In addition, several experts on our panel stated that, given the disparity in training requirements, it would be possible that designees could gain a better knowledge of FAA's policies and procedures than the FAA staff who oversee them. FAA officials stated that inspectors and engineers receive training through workshops, video training sessions, and FAA academy training. However, they do not receive refresher training, which is required for designees. This is in contrast to regional flight surgeons, who are required to attend refresher training every 3 years, which is the same training required for designees.

Additionally, previous recommendations for improving inspector training have not been implemented. For example, as mentioned previously in this report, in 2000, FAA found that inspectors in field offices in the Southwest Region were not reviewing designated pilot examiners' work on an annual basis and conducting oversight as required. The report recommended that the Southwest Region conduct standardized initial and refresher training for FAA inspectors, supervisors, and managers on the agency's oversight policies and procedures pertaining to designated pilot examiners. In response to the recommendation, the region implemented a training course that included briefings at each field office to raise the awareness of FAA inspectors concerning the importance of designee oversight, to explain current policy, and to offer techniques for effective oversight. The region also used the briefings as the basis of curriculum for new training courses for FAA inspectors and has recommended that such courses be made available for all Flight Standards Service inspectors nationwide. According to agency officials, FAA plans to implement a national policy based on this recommendation in October 2004 and expects the policy to be implemented by 2005.

FAA Has Potential Opportunities to Improve Designee Programs

Experts on our panel, best practices within FAA, and practices adopted by other countries in administering their respective designee programs, including experiences in implementing organizational delegation systems, suggest that there are potential opportunities for FAA to improve (1) program oversight to ensure consistent compliance with existing policies by FAA inspectors, engineers, and flight surgeons and (2) the accuracy and comprehensiveness of computerized information on designees so that the databases can be more useful tools for designee oversight. Given the central importance that the designee programs hold for FAA and future

agency plans to expand the use of organizational designees with the creation of the ODA program, FAA has incentives to carefully consider such opportunities.

Several Opportunities Identified to Improve Oversight of Designee Programs

Our work indicated that additional opportunities exist to improve FAA's oversight of its designee programs to ensure consistent compliance with existing policies by FAA inspectors, engineers, and flight surgeons. For example, our expert panel offered a number of suggestions to improve the designee programs that address some of the weaknesses we identified, including improvements in selecting and terminating designees and ensuring that FAA staff who oversee designees are knowledgeable about FAA policy. In addition, many experts agreed that it was important for FAA to hold designees accountable for their findings.[29] For example, one expert pointed out that the designated engineering representative and organizational designee programs should be overhauled so that the designees are responsible and accountable for certifications and that FAA needed to put in place a process to monitor that additional responsibility. An FAA official told us that accountability is a central part of their designee programs, since failure to perform delegated functions in accordance with agency standards and expectations will result in removal of the delegation. In addition, all of the experts on our panel indicated that it was important for FAA to conduct audits of existing designee programs to determine if field offices are providing adequate oversight.[30] As we mentioned previously in this report, FAA has audited only 6 of its 18 designee programs. Table 4 lists the top ranked actions in terms of importance and feasibility identified by the experts; these actions were identified as "high" or "highest" in importance and feasibility for implementation by most of our experts. Appendix IV provides a complete list of suggestions made by our expert panel.

[29]Only one expert indicated that greater accountability of designees was not necessary.

[30]In response to this question, two experts had no opinion and three experts declined to answer.

Table 4: Experts' Ranking of Top Ways to Improve FAA's Designee Programs

Ranking	Suggested improvement
1	Hold designees accountable for their findings.
2	Ensure that FAA employees who oversee designees are knowledgeable about the regulations, policies, and processes applicable to the designees' particular specialization.
3	Select designees according to their qualifications and experience rather than on personal associations with FAA managers.
4	Clearly define and consistently follow the criteria for selecting designees.
5	Increase penalties (including the ability to terminate their status as designees) for individual and organizational designees found to violate standards or who do not exercise proper judgment.

Source: GAO analysis of expert panel information.

Note: Rankings based on responses from 62 experts and the frequency of responses indicating a "high" or "highest" importance to implement.

Consistent evaluation and monitoring of designee activities is crucial to hold designees accountable for their findings, and some FAA offices have best practices that may be broadly applicable across the designee programs. For example, as we discussed earlier in this report, FAA's internal review of pilot examiners in the Southwest Region was implemented to determine whether the designees in the region were conducting valid practical tests of general aviation pilot applicants and to determine the quality of FAA oversight provided by field offices in the region. Findings from the internal review were based on a comprehensive statistical analysis of pilot examiners' activities in the region, a survey of newly certified private pilots in the region, audits of pilot examiner files, surveillance reports from FAA inspectors, and interviews with field office managers and staff. The review provided a reasonable method to assess program outcomes, identify the root causes of the lack of compliance with agency policy, and develop corrective action plans to address the root causes. FAA's Organization Effectiveness Branch Manager commented that the methodology for the internal review was reliable, and suggested that the review was informative for developing regional policy. The Branch Manager also commented that in order to address FAA national policy, a national survey would be necessary. Flight Standards Service has not expanded its use of this methodology to other regions or to other designee programs.

Canada's practice of systematically evaluating and/or monitoring its designee programs provides additional examples of opportunities for

improving FAA's oversight of its organizational designee programs and its plans to implement ODA. Transport Canada oversees both individual and organizational designees (which are called "delegates"), and focuses on aircraft design and design modifications.[31] Transport Canada oversees delegates using regional offices and headquarters staff, similar to FAA. FAA, however, oversees a much larger number of designees. For example, Canada has approximately 760 aviation medical examiners and 80,000 pilots, while the United States has about 5,000 aviation medical examiners and about 630,000 pilots. Transport Canada has implemented a policy to provide a consistent and standard approach for conducting safety oversight of its organizational delegates, which includes conducting audits of delegated organizations on a cycle ranging from 6 to 36 months—an initial audit within 6 months of certification and comprehensive follow-up audits on a recurring basis. They have also established a centralized standardization office to ensure that field offices are consistently interpreting rules and procedures. The centralized office evaluates and approves technical submissions from applicants and delegated organizations to determine compliance with regulations. The office is also responsible for the development, coordination, and implementation of a national audit plan in auditing delegated organizations. By comparison, FAA policy calls for conducting annual inspections, and procedural audits and technical evaluations every 2 years. Annual inspections focus on a review of the system that the delegated organization has in place to perform the delegated functions and a review of the activities conducted by individuals. As mentioned previously, FAA conducted 10 technical evaluations (out of 49) as of June 2004. According to FAA, it has established centralized offices responsible for standardization of policies. However, our work has shown that FAA field offices do not implement policies in a standard manner, as discussed earlier in this report.

Transport Canada's experiences in developing an organizational delegation system in the late-1980s also provide relevant lessons for FAA as it begins developing the ODA program. According to the Chief of Delegation and Quality Divisions in Transport Canada, an inconsistent level of oversight was a major challenge that Transport Canada faced as it implemented its organizational delegation system. To address this challenge, the agency established a centralized standardization office to ensure that field offices

[31]Established in the 1980s, Canada's two types of organizational delegates, Design Approval Organizations and Airworthiness Engineering Organizations, are authorized to evaluate and approve technical data to determine compliance with safety requirements.

are consistently interpreting rules and procedures. Based on this experience, the Transport Canada official told us that FAA needs to plan for the inconsistencies that will arise during the implementation of the ODA program. The larger size of the U.S. designee programs increases the likelihood that the level of oversight will be inconsistent, according to the Transport Canada official. Moreover, the official also commented that, in hindsight, they should have developed and conducted an audit of organizational delegates early in the implementation process. The Canadian official told us that Transport Canada did not conduct audits early on because staff were preoccupied with reviewing and approving organizations' procedures manuals. Transport Canada's quality assurance review later determined that they were not doing audits of organizational delegates on time, nor conducting audit follow-ups, which contributed to inconsistent oversight.

Database Monitoring Performance of Aviation Medical Examiners Could Be Model for Other Designee Databases

Accurate, comprehensive information on designee activities is an important prerequisite for designee oversight and is integral to monitoring and evaluating the programs. The Airmen Medical Certification Information Subsystem—a database used by FAA's Office of Aerospace Medicine to monitor the performance of aviation medical examiners—provides a model for the other designee programs. Although this database was designed to simplify the processing of airmen medical certification information, Aerospace Medicine also uses it as a tool to oversee aviation medical examiner designees and monitor their activity levels. For instance, regional FAA flight surgeons use information from the database to determine if they need to more closely monitor aviation medical examiners with high activity levels or to determine how long it takes to transmit medical information to FAA. Each flight surgeon is periodically provided performance data for their designees that include the number of medical certificates issued by each designee, the number of errors found in those certificates, and the number of accidents and incidents involving pilots that received medical certificates from designated medical examiners, according to an Aerospace Medicine official. Additionally, according to FAA officials, regional flight surgeons also use data from the database and link it with the Airmen Registry to determine the region where FAA needs additional examiners. Applying this model to Flight Standards Service and Aircraft Certification Service would provide those offices and inspectors and engineers with more detailed performance information on designees and provide a foundation for more consistent oversight of the numerous designee programs.

FAA officials agreed that improvements were needed to these databases, but expressed a concern that it would cost $50 million to make upgrades, which may have implications for other safety programs that would then receive less funding. Such concerns might be addressed by looking for ways to share the costs of the designee programs with the aviation industry, similar to other federal agencies that charge user fees to process applications for approvals or licenses. For instance, the Federal Drug Administration charges pharmaceutical companies application fees to recover the cost of the agency's review of new drugs.[32] As another example, U.S. Customs and Border Protection charges fees to brokers—private individuals and companies that are licensed and regulated by the agency to aid importers and exporters in moving merchandise through Customs. Brokers pay Customs a $100 permit application fee and a $125 annual user fee. FAA does not charge designees an initial application fee or a renewal fee, which could help recover the cost of processing these applications, because it has been prohibited in law from promulgating new user fees since 1997.[33] Moreover, designees charge companies and the general public fees to have a product certified or to perform a pilot practical test. Some designees earn up to $60,000 or more a year and have made designated activities their sole source of income. FAA inspectors, engineers, and flight surgeons, on the other hand, provide the same service free as a function of their government employment. In prior reports, we have stated our belief that, to the extent possible, commercial users of the aviation system should pay their share of the costs that they impose on the system.[34] Charging fees to designees to offset the cost to FAA to administer the designee programs is an analogous situation.

Conclusions

Designees perform a valuable function for FAA and the aviation industry, enabling FAA to leverage its staff resources and industry to obtain FAA-issued certificates in a timely manner. By using designees, however, FAA places great trust in the integrity and honesty of designees to adhere to the same requirements, instructions, and procedures as FAA staff do;

[32]The user fee program was established by the Prescription Drug User Fee Act of 1992.

[33]P.L. 105-66 (October 27, 1997).

[34]GAO, *Transportation Financing: Challenges in Meeting Long-Term Funding Needs for FAA, Amtrak, and the Nation's Highways*, GAO/T-RCED-97-151 (Washington, D.C.: May 7, 1997); GAO, *Airport and Airway Trust Fund: Issues Raised by Proposal to Replace the Airline Ticket Tax*, GAO/RCED-97-23 (Washington, D.C.: Dec. 9, 1996).

therefore, periodic validation and consistent oversight by FAA staff is necessary to ensure that such trust is well placed. To date, FAA has not ensured that the oversight process for its many designee programs is implemented consistently by different field offices. While we did not find systematic safety problems associated with FAA's oversight of designees, the agency's inconsistent oversight limits its assurance that the designees' work is performed in accordance with the agency's standards and policies. We found examples of weaknesses in FAA's designee programs—such as inspectors with too great a workload to conduct required surveillance of designees—that underscore the need for FAA to ensure that its staff are consistently following agency policy concerning designee oversight and to validate those policies and their application by periodic evaluations. However, FAA has evaluated only 6 of its 18 designee programs to date. Our study indicated that reasons for FAA's inconsistent oversight may include limitations on designee data that FAA maintains, along with heavy workload, and potentially inadequate training for FAA staff overseeing designees. FAA lacks a comprehensive information system to effectively monitor and oversee the thousands of activities performed by designees. Without such information, FAA management cannot readily determine whether its field staff is overseeing designees according to policy nor whether designees are performing according to FAA's standards. Heavy workload for FAA staff responsible for overseeing designees might preclude thorough assessment—or any assessment—of some designees' performance. Finally, by not requiring refresher training for FAA staff, the agency increases the risk that staff do not retain the information, skills, and competencies required to perform their oversight responsibilities. Potential opportunities exist for FAA to address these weaknesses and provide more consistent oversight of the designee programs by expanding the use of existing agency practices, such as the Office of Aerospace Medicine's practice of maintaining information on aviation medical examiners performance and activity levels and using that information in conjunction with designee oversight. Charging application and renewal fees to designees to help offset the cost of administering these programs would be in line with practices by other agencies and prior GAO reports on cost-sharing with the aviation industry. However, FAA is prohibited, by law, from imposing new user fees unless they are specifically authorized by law.

It is especially important for FAA to consider ways to improve the oversight of its designee programs as the agency moves forward with the organization designation authorization program, which would expand the number and types of organizational designees and further transform FAA's role to that of monitoring the performance of others. Moreover, concerns

have been raised that under the proposed program FAA would provide less specific and less technical oversight of the new organizational designees than under the current program. Expanding the use of good oversight practices already used within FAA for some designee programs and examining lessons that may be learned from Canada's oversight of organizational designees and efforts suggested by our expert panel, would increase FAA's assurance that its designees are meeting FAA safety standards and that any future changes to the designee programs maintain those standards.

Recommendations for Executive Action

To improve management control of the designee programs, and thus increase assurance that designees meet FAA's performance standards, GAO recommends that the Secretary of Transportation direct the FAA Administrator to take the following three actions:

1. Establish a program to evaluate all designee programs, placing a priority on those 12 programs that have not been evaluated. At a minimum, the evaluations should examine field office compliance with existing policies, identify root causes of noncompliance with those policies, and establish and monitor corrective action plans.

2. Develop mechanisms to improve the compliance of FAA program and field offices with existing policies concerning designee oversight. The mechanisms should include additional training for staff who directly oversee designees. As part of this effort, FAA should identify best oversight practices that can be shared by all FAA program and field offices and lessons learned from the program evaluations and incorporate, as appropriate, suggestions from our expert panel.

3. Enhance the effectiveness of FAA designee oversight tools, such as databases, by improving the consistency and completeness of information on designees' activities and performance and FAA oversight. To the extent necessary, FAA should examine charging fees to designees to help pay for the costs of such efforts. If FAA identifies a need for such fees, the agency should request the Congress to authorize them.

Agency Comments

We provided a draft of this report to DOT for review and comment. FAA's Deputy Associate Administrator for Regulation and Certification and other

DOT officials provided oral comments. DOT generally agreed with our recommendations and acknowledged that automating the data concerning oversight of designees and enhancing training for FAA employees who oversee designees are useful steps to enhance the programs. The department also provided clarifying comments and technical corrections, which we incorporated as appropriate. In addition, the department noted that designee programs have been a cornerstone of aviation safety for 50 years. The constantly improving level of safety in the U.S. aviation system is due, in no small measure, to the professional performance of the thousands of designees who evaluate aircraft designs, assess pilot capability, or conduct the myriad of other reviews designees perform, according to DOT. DOT also pointed out that statistics and data show that every day of the year, the pilots and aircraft that pass through these designee systems fly safely from departure to destination.

However, DOT officials expressed concern about the use of the Delphi method in our review of 18 different programs with nearly 14,000 designees. First, they emphasized that, at best, the Delphi method provides a means to consolidate and prioritize expert opinion, but even under the best of circumstances, the results are opinion, not necessarily factual data. The use of Delphi was further complicated in this particular case, according to DOT, by the span of knowledge that would be necessary to be considered an "expert" on designees when the scope of expertise runs from aviation medicine, to aircraft engineering and production methods, to parachute rigging. They stated that no individual could be considered an expert in all the programs, and the solicitation of opinions from the panel of experts would reflect the specific experience of each individual—but could not be considered a general statement of the strengths or weaknesses of all the programs. By consolidating the responses from individuals with expertise from these diverse fields, the officials questioned whether the results could be useful for guiding decisions to improve any of the individual designee programs. Further, the DOT officials cautioned that the Delphi results should be carefully qualified in the final report, along with explicit statements about the limitations on the use of the information.

We disagree with DOT's characterization of our use of the Delphi method; furthermore, we believe we used this methodology (which is described in detail in app. I) appropriately. In particular, we used a "modified" version of the Delphi method in order to compensate for some the limitations inherent in the Delphi method as well as to adapt the method to the specific needs of this engagement. For example, we created a Web-based panel that allowed us to include many more experts than had we convened a live

panel. In addition, the Web-based panel allowed us to keep the experts' identities anonymous, minimizing the biasing effects often associated with live group discussions. We also carefully selected the experts starting with a list provided by FAA, and took into consideration that not all of the panelists would possess expertise in many of the designee programs. To help adjust for that fact, during the first round of questions, we asked experts to indicate if their responses referred only to specific designee programs and, in a few cases, experts indicated such. During the second round, the experts were given the choice of responding to each question that they did not know or had no opinion. In short, while DOT criticizes the responses from the experts as "opinions," we believe the responses are more appropriately characterized as carefully considered judgments of systematically selected experts. Lastly, as described below, the report only focuses on issues that were identified by the panel and other sources.

Second, in reviewing a draft of this report, DOT officials expressed concern about the way the Delphi results had been presented. They emphasized, for example, that while the draft mentioned the number of respondents who considered a factor a "great" or "very great" weakness, the draft should also state the number who considered a factor "no" weakness or of "little" weakness. Presenting what DOT considers both ends of the response spectrum in the body of the report would allow a full understanding of the results, according to the department. We agreed that the number of experts responding "no" and "little" should also be presented whenever the responses to individual questions were mentioned in the report, and we revised the report accordingly.

Finally, DOT officials emphasized the need to consider, what they called, the "totality" of the questions and responses in order to evaluate any inconsistencies among responses. For example, they said that while our report uses the responses from a single question to indicate concern regarding the selection process for designees, the responses from other questions could be interpreted to conclude that there was little concern about the competency of the designees that were selected or the quality of their work. Taken together, these officials felt that these responses in total present a different perspective on the outcome of the designee selection process than the first question alone. DOT officials stated that our highlighting the responses to one question and not balancing it with the results of others, presents an incomplete picture of the panel's overall findings and could mislead those who read the report but do not look at the details in appendix IV. We disagree with DOT's characterization of our analysis. First, we considered all responses from the expert panel and

provided them in their entirety in the appendix. Furthermore, for the body of the report, we only focus on issues that were identified by multiple sources. For example, the report highlights the issue of selecting designees based on personal association because it was identified by other sources during our field work and our review of prior evaluations of the designee programs. Other issues raised by some of the panel experts concerning the selection process were not identified by other work we conducted and, therefore, not highlighted in the report.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 21 days from the report date. At that time, we will send copies of this report to interested congressional committees, the Secretary of Transportation, and the Administrator, FAA. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

Please call me at (202) 512-2834 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix V.

Sincerely yours,

JayEtta Z. Hecker
Director, Physical Infrastructure Issues

Objectives, Scope, and Methodology

This report addresses the following research questions: (1) What are the strengths of FAA's designee programs? (2) What are the weaknesses of the programs and the factors that contribute to those weaknesses? and (3) What can be done to address the identified weaknesses or otherwise improve the programs?

To address these questions, we used a variety of methods and sources of information. We obtained and analyzed data for fiscal years 1998 through 2003 from four Federal Aviation Administration (FAA) databases[1] that maintain records on designees. We assessed the reliability of the databases by (1) performing electronic testing of required data elements; (2) reviewing existing information about the data and the system that produced them; and (3) interviewing agency officials knowledgeable about the data to learn how the information system was structured, controlled, and used. We determined that the data were sufficiently reliable for our purposes of describing the number of designees by program, identifying the geographical location of designees, and calculating the number of designees per FAA staff responsible for designee oversight. However, we found that specific data needed for oversight were not found in some databases, as we discuss in this report.

In addition, we reviewed FAA program guidance concerning designee management to obtain an understanding of designee roles and responsibilities. We did not verify how FAA delegates authorized functions and what certification activities were delegated. We also reviewed FAA's Notice of Proposed Rulemaking on the organization designation authorization program and public comments on the proposed rule, conducted computer literature searches to obtain information on other countries' designee programs, and interviewed officials from the Canadian civil aviation authority. In addition, we reviewed past studies, by us and others, of FAA's designee programs. (See the bibliography at the end of this report.) We identified recommendations that had been made to improve the programs and determined whether those recommendations had been acted upon by the agency. Information obtained from the reports and the databases was not equally comprehensive and available for all types of designees.

[1]The four databases are the (1) National Vital Information Subsystem, (2) Program Tracking and Reporting Subsystem, (3) Designee Information Network, and (4) Airmen Medical Certification Information Subsystem.

We obtained information and data on FAA's designee programs on visits to four locations--Los Angeles, Seattle, Atlanta, and Oklahoma City. We selected the locations based on (1) number of designees in the region; (2) activity-level of designees; (3) ratio of inspectors, engineers, or flight surgeons to designees; and (4) location of both Aircraft Certification directorate offices and Flight Standards Service regional offices. Additionally, these offices were selected because of the following: (1) the Seattle office has the largest number of aircraft certification designees, (2) the Atlanta office has the largest number of flight standards designees along with the most certification activity, and (3) the Oklahoma City office manages some designee data and is the location of FAA's training institute. We interviewed individual FAA inspectors and engineers who oversee designees at the offices we visited as well as officials from the National Air Traffic Controllers Association and Professional Airway System Specialists—unions that represent FAA inspectors and engineers. We also interviewed designees in Los Angeles, Seattle, and Atlanta. The cities and organizations where we conducted our work are shown in table 5.

Table 5: Organizations Interviewed by GAO During Site Visits

Location	Type of entity	Organization
Seattle, WA, area	Federal government	FAA's Office of Aircraft Certification • Transport Airplane Directorate • Manufacturing Inspection Office • Manufacturing Inspection District Office • Manufacturing Inspection Satellite Office • Boeing Certificate Management Office
		FAA's Office of Aerospace Medicine
		FAA's Office of Flight Standards Service, Northwest Mountain Region • Seattle Flight Standards District Office
	Organizational designated airworthiness representative	The Boeing Company
	Designated airworthiness representative	Pacific Propellers
	Designated alteration station	Goodrich Aviation Technical Services, Inc.
	Special Federal Aviation Regulations No. 36, repair station	Alaska Airlines

(Continued From Previous Page)

Location	Type of entity	Organization
Atlanta, GA, area	Federal government	FAA's Office of Aircraft Certification • Small Airplane Directorate
		FAA's Office of Aerospace Medicine
		FAA's Office of Flight Standards Service, Southern Region • Flight Standards Regional Office
	Designated engineering representative	• Garrett Aviation • Propulsion Consultants Inc. • Delta Airlines
Los Angeles, CA, area	Federal government	FAA's Office of Aircraft Certification • Manufacturing Inspection District Office
		FAA's Office of Aerospace Medicine
		FAA's Office of Flight Standards Service, Western Pacific Region • Los Angeles Flight Standards District Office • Riverside Flight Standards District Office
	Designated pilot examiner	Aviation Services
	Designated airworthiness representative/Designated engineering representative	CDO Associates
Oklahoma City, OK, area	Federal government	FAA's Aviation Data Systems
		FAA's Designee Standardization Branch
		FAA's Delegation and Continued Airworthiness Programs Branch
		FAA's Medical Systems Branch
		FAA's Aerospace Medical Education Division
		FAA's Civil Aerospace Medical Institute
		FAA's Aerospace Human Factors Research Division
		FAA's Office of Flight Standards Service, Southwest Region • Oklahoma City Flight Standards District Office

Source: GAO.

In addition, we convened a Web-based panel of experts selected for their knowledge and expertise in the area of FAA's designee programs. An initial list of experts was identified through referrals by FAA officials, the National Air Traffic Controllers Association, the Professional Airway System Specialists, and the Aerospace Repair Station Association and through citations in the literature on aviation. We then asked these initially identified experts for additional experts. We continued this process until we had about 10 to 20 experts in each of four categories: (1) designees, (2) FAA inspectors and engineers, (3) independent experts and university academics, and (4) private sector and aviation industry associations. (See app. II for the list of participating experts.)

To structure and gather expert opinion from the panel, we employed a modified version of the Delphi method.[2] To obtain opinions from the large, diverse group of experts, we incorporated an iterative and controlled feedback process—an important feature of the Delphi method. We did not encourage experts to arrive at a consensus nor make forecasts. During this process, we obtained opinions from the experts using questionnaires administered over the Internet. The experts' identities were kept anonymous during this step of the process. The anonymity of this approach helped minimize potential biasing effects often associated with live group discussions. Biasing effects of live expert discussion sessions may include the dominance of individuals and group pressure for conformity.[3] The dominance bias would tend to limit the input of less dominant individuals, and the group pressure bias would tend to suppress true opinion, particularly on more controversial issues. These concerns were particularly important given the need for a broad range of expertise from individuals with varying backgrounds and perspectives. Also, by creating a Web-based panel we were able to include many more experts than we could have if we had convened a live panel.

In the first phase of the expert panel, which ran from October 2 to 31, 2003, we asked the panelists to respond to three open-ended questions: (1) What, if any, are the three most significant strengths of the FAA designee programs? (2) What, if any, are the three most significant weaknesses of the FAA designee programs? And (3) What, if any, are your suggestions for addressing the weaknesses of or otherwise improving the FAA designee programs? We further asked them to indicate those responses that referred only to specific types of designees. The three questions, based on our study objectives, were pre-tested to ensure that the questionnaire was clear and unambiguous, did not place undue burden on individuals completing it, and was independent and unbiased. We made relevant changes before we deployed the first questionnaire to all participants on the Internet.

[2]For examples of recent use of this methodology see, GAO, *Drinking Water: Experts' Views on How Future Federal Funding Can Best Be Spent to Improve Security*, GAO-04-29 (Washington, D.C.: Oct. 31, 2003); *International Trade: Experts' Advice for Small Businesses Seeking Foreign Patents*, GAO-03-910 (Washington, D.C.: June 26, 2003); *Economic Models of Cattle Prices: How USDA Can Act to Improve Models to Explain Cattle Prices*, GAO-02-246 (Washington, D.C.: Mar. 15, 2002); *Environmental Protection: Federal Incentives Could Help Promote Land Use That Protects Air and Water Quality*, GAO-02-12 (Washington, D.C.: Oct. 31, 2001).

[3]James P. Wright, "Delphi-Systematic Opinion Gathering," *The GAO Review* (Spring 1972): 20-27.

We performed a content analysis of the responses to the open-ended questions in order to compile a list of all the strengths, weaknesses, and improvements mentioned by the experts. We contacted the experts, when necessary, if responses were unclear. About 25 percent of the coded responses were reviewed by an independent coder to ensure that the initial coding decisions were consistent and valid. To maintain standards of methodological integrity, any disagreements in coding between the coder and reviewer were discussed until consensus was reached.

The content coded results from the phase I questionnaire consisted of a list of distinct and specific strengths, weaknesses, and suggested improvements, which were used to construct the phase II questionnaire. The phase II questionnaire also served as a feedback mechanism to the panelists about what other experts thought were important strengths and weaknesses. The phase II questionnaire was also pre-tested, revised, and then administered on the Internet from January 5 to March 30, 2004.

In phase II, the panelists rated the strengths, weaknesses, and suggested improvements on various relevant dimensions using a five-category scale (e.g., "no weakness" to "very great weakness," or "definitely infeasible" to "definitely feasible"). In analyzing the responses to the phase II questionnaire, we calculated the frequency of responses to identify the strongest levels of opinions on each item regarding the strength, weakness, or attractiveness (based on importance and feasibility) of suggested improvements. We ranked the results based on the number of responses at the top two categories (e.g., the number of "great weakness" and "very great weakness" responses) that were rated as the more frequently identified responses.

Initially, 78 experts agreed to participate in the panel. Fifty-eight panelists actually completed the phase I questionnaire, resulting in a response rate of 74 percent. There was some attrition during the subsequent phase. Of the 76 experts who agreed to participate in phase II, 62 actually completed the questionnaire (including some who did not participate in phase I). This resulted in a 82 percent response rate for phase II (see table 6).

Table 6: The Number of Panelists Participating in Each Phase and Response Rate

Phase	Experts who agreed to participate	Experts responding to questionnaire	Response rate in percentile
I	78	58	74%
II	76	62	82%

Source: GAO.

We conducted our work between April 2003 and October 2004 in accordance with the generally accepted government auditing standards.

Experts Participating on GAO's Panel

Independent expert or university affiliation	Roger Bacchieri, Chair, Air Traffic Management Division, Daniel Webster College
	Patricia Backer, Chair, Department of Aviation and Technology, San Jose State University
	William Caldwell, Chair, Department of Aviation, Central Missouri State University
	Thomas J. Connolly, Associate Dean, College of Aviation, Embry-Riddle Aeronautical University
	Bart J. Crotty, Aviation Safety/Security Consultant, former FAA Airworthiness Inspector, former FAA Designated Airworthiness Representative
	Alfred Dickinson, Director, Aviation Safety Program, University of Southern California
	Carey L. Freeman, Chair, Aviation Department, Hampton University
	Jim Frisbee, Aviation Consultant, former Director of Quality Assurance, Northwest Airlines
	Larry Gross, Associate Professor of Aviation Technology, Purdue University
	Gary Kitely, Executive Director, Council on Aviation Accreditation
	Nick Lacey, Aviation Consultant, Mortem Beyer and Agnew, former Director of FAA's Flight Standards Service
	Doug Latia, Associate Professor, Aviation Technology Department, Purdue University
	Fred Leonelli, former manager of FAA's Aircraft Maintenance Division
	Kent Lovelace, Chair, Department of Aerospace, University of North Dakota
	Jacqueline B. Sanders, Assistant to the Provost, Mercer County Community College
	Glynn Dale Sistrunk, Chair, Department of Professional Aviation, Louisiana Tech University

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Aviation industry	Mark Arcelle, Senior Manager of Fleet Engineering, FedEx Express
	Melissa Bailey, Vice President of Air Traffic Regulation and Certification, Aircraft Owners and Pilots Association
	Tony Broderick, Aviation Safety Consultant, former FAA Associate Administrator
	Eric Byer, Manager of Government Industry Affairs, National Air Transportation Association
	Aubrey Carter, General Manager of Enabling Technology, Delta Airlines
	Elias Cotti, Director of Technical Operations, National Business Aviation Association
	Brian Finnegan, President, Professional Aviation Maintenance Association
	John Frisbee, Manager of Quality Assurance, Champion Airline
	Rick Hoy, Manager, Regulatory Compliance, Delta Airline
	Sarah Macleod, Executive Director, Aeronautical Repair Station Association
	Doug MacNair, Vice President, Government Relations, Experimental Aircraft Association
	Nick Mateo, Senior Director, Technical Services, Continental Airlines
	Thomas McSweeny, Director of International Safety and Regulatory Affairs, Boeing, former FAA Associate Administrator of Regulation and Certification, former FAA Director of Aircraft Certification Service
	Rick Oehme, Vice President, Quality and Engineering, America West Airlines
	Richard Peri, Vice President, Government and Industry Affairs, Aircraft Electronic Association
	Robert Robeson, Jr., Vice President of Civil Aviation, Aerospace Industries Association
	Stan Sorscher, Labor Representative, Society of Professional Engineering Employees in Aerospace
	Ronald Swanda, Vice President of Operations, General Aviation Manufacturers Association
	Mark Szkirpan, Senior Specialist of Regulatory Affairs, American Airlines
Designees	David Bryman, D.O., Senior Aviation Medical Examiner
	Thomas W. Carroll, Designated Airworthiness Representative, former FAA Supervisory Aviation Safety Inspector
	Harold Coralnick, M.D., Senior Aviation Medical Examiner
	Dominick P. DaCosta, Designated Airworthiness Representative, Designated Engineering Representative, Chief Executive Officer of DERS Group Inc.
	Joseph Kilpatrick, Designated Engineering Representative
	Osvaldo Lopez, Designated Engineering Representative
	Joe Norris, Designated Airworthiness Representative
	David Orfant, CDO Associates, Designated Airworthiness Representative (Manufacturing and Maintenance), Designated Engineering Representative
	Thomas C. Willis, Designated Airworthiness Representative (Maintenance)

Source: GAO.

Note: In addition, to the experts listed above, 7 inspectors from FAA's Flight Standards Service, 10 engineers from FAA's Aircraft Certification Service, and 1 other designee participated on the panel.

Roles and Responsibilities of Designees

Designee type	Responsibilities
Individual designees	
Aviation Medical Examiners	Authorized to accept applications and perform physical examinations necessary to determine qualification for the issuance of airman medical certificates and combined medical/student pilot certificates. Designees can issue, defer, or deny the certificates, as appropriate.
Designated Engineering Representatives	Authorized to examine and approve certain engineering technical data for their employer. Designees can either be employed by a company or act as free agents.
Designated Manufacturing Inspection Representatives	Authorized to perform conformity inspections[a] and issue airworthiness certificates and approvals for products and parts produced by FAA-approved production approval holders.[b] Production approval holders or its authorized suppliers employ this type of designee.
Training Center Evaluators	Authorized to accept applications and conduct practical tests leading to the issuance of pilot and flight instructor certificates.
Designated Pilot Examiners	Authorized to accept applications for flight tests, conduct those tests, and issue temporary pilot certificates to qualified applicants.
Aircrew Program Designees	Authorized to perform airman certification in one type of aircraft for an operator's pilots who have been trained under the operator's FAA-approved training program.
Designated Airworthiness Representatives (maintenance)	Authorized to perform certain inspections, including issuing recurrent airworthiness certificates and approvals for maintenance conducted by repair stations and air carriers.
Designated Airworthiness Representatives (manufacturing)	Authorized to perform conformity inspections, issue airworthiness certificates and approval for products and parts produced by FAA-approved production approval holders. Designees are independent individuals, but may be employed by the production approval holder.
Designated Mechanic Examiners	Authorized to accept applications for and conduct oral and practical tests for issuing mechanic certificates.
Designated Parachute Rigger Examiners	Authorized to accept applications for, and conduct, oral and practical tests for issuing parachute rigger certificates.
Designated Aircraft Dispatcher Examiners	Authorized to accept applications for, and conduct, written and practical tests necessary for issuing aircraft dispatcher certificates and, at the discretion of a local Flight Standards inspector, issue temporary aircraft dispatcher certificates to qualified applicants.
Designated Flight Engineer Examiners	Authorized to perform airman certification for an operator's flight engineer candidates who have been trained under the operator's FAA-approved training program.
Computer Testing Designee	Authorized to administer computerized airman knowledge tests through computer test sites located throughout the United States and authorized foreign locations.
Organizational designees	
Organizational Designated Airworthiness Representatives (maintenance)	Organizations that (1) hold repair station certificates with appropriate ratings or air carrier operating certificates with FAA-approved Continuous Airworthiness Maintenance programs and (2) are authorized to issue recurrent airworthiness certificates and export airworthiness approvals for certain products.
Organizational Designated Airworthiness Representatives (manufacturing)	Organizations that hold FAA production approvals and are authorized to issue airworthiness certificates and approvals and make conformity determinations.

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Designee type	Responsibilities
Designated Alteration Stations	Companies that hold a current domestic repair station certificate and are manufacturers of a product for which they have alteration authority. The designees are authorized to issue supplemental type certificates, perform prototype conformity inspections,[c] and issue experimental airworthiness certificates for the purpose of flight-testing and the standard airworthiness certificate after the supplemental type certificate has been issued.
Special Federal Aviation Regulations No. 36, Repair Stations	Companies that are authorized to generate engineering technical data that are acceptable to the FAA. These data can be used only by the specific designee for major repairs.
Delegation Option Authorizations	Companies that are authorized to obtain type certificates, approve type design changes, conduct conformity inspections, and issue airworthiness certificates and approvals.

Source: GAO analysis of FAA documents.

[a]Conformity inspection is an assessment necessary to determine that aviation products and related parts conform to an approved design and can be operated safely.

[b]Production approval holders are aircraft manufacturers that hold a type or production certificate and can produce modification or replacement parts.

[c]Prototype conformity inspection is an examination to verify an applicant's compliance with federal regulations and determine that prototype products and related parts conform to proposed design drawings and specifications.

Survey Instrument and Results

This appendix presents the results from the expert panel on the identified strengths, weaknesses, and what can be done to address the program weaknesses or otherwise improve the designee programs. Included here are the questions and the ranking of responses developed based on the frequency of responses to questions that were completed by members of the panel selected for this study (referred to as "phase I" and "phase II"). We administered the questionnaires for phases I and II over the Internet.

As discussed in appendix I, in phase I of the expert panel, we asked the panelists to respond to open-ended questions about the identified strengths, weaknesses, and the potential of other alternatives to improve FAA's designee programs. We performed a content analysis on the responses to the open-ended questions in order to develop close-ended questions for phase II of the expert panel. The purpose of the second phase was to provide the panelists with the opportunity to consider the other panelists' responses to the first phase and to respond in a structured, quantifiable way. Phase II consisted of 64 closed-ended questions on the categorized responses to phase I. Sixty-two of the 76 experts completed the phase II survey (about 82 percent response rate). Table 7 summarizes the results from phase II, ranked based on the number of responses at the top two points on the categories (e.g., the number of "great" and "very great" responses) that were rated as the more frequently identified responses.

Table 7: Experts' Responses to GAO's Survey

Strengths of FAA's designee programs

1. How important, if at all, is each of the following strengths of FAA's designee programs toward accomplishing FAA's safety responsibilities?

	Strengths	No	Some	Moderate	Great	Very great	Don't know / No opinion	No response
a.	Use of designees expands available FAA resources.	0	3	9	16	33	1	0
b.	Use of designees allows for more timely approvals than by not using designees.	0	3	10	15	33	1	0
c.	Use of designees expands available technical expertise.	2	2	11	19	27	1	0
d.	Use of designees enables FAA staff to concentrate on other areas of aviation safety.	2	5	13	19	20	2	1

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Strengths of FAA's designee programs								
e.	Designees provide greater scheduling flexibility and access to the public.	1	7	12	12	27	2	1
f.	Use of designees allows for greater geographic coverage.	3	7	12	15	23	1	1
g.	Designees also perform liaison role improving relations between FAA and aviation community.	5	12	16	19	7	3	0
h.	Designees help educate FAA engineers and inspectors.	10	7	15	17	8	4	1
i.	Designees provide consistent certification because they receive recurrent training.	7	14	16	13	7	4	1
j.	Designees provide a pool of resources from which to draw when filling positions at FAA.	11	15	16	10	4	5	1

Weaknesses of FAA's designee programs

2. How much of a weakness is each of the following factors related to the workload of FAA inspectors and aircraft certification engineers who oversee designees?

	Factors	No	Little	Moderate	Great	Very great	Don't know/ No opinion	No response
a.	Numbers of FAA inspectors and engineers not increasing commensurate with industry growth.	1	5	17	12	20	7	0
b.	Backlog of work submitted by designees awaiting approval/concurrence by FAA.	2	6	18	16	11	8	1
c.	FAA inspectors and engineers do not have enough time to provide adequate oversight of designees for whom they are responsible.	5	4	16	17	10	8	2
d.	Insufficient number of FAA inspectors/engineers compared with designees to provide adequate oversight.	3	8	23	13	8	7	0
e.	Applies only to Designated Pilot Examiners (DPE): High turnover rate of FAA inspectors responsible for overseeing DPEs.	2	2	7	5	2	25	19

3. How much of a weakness is each of the following factors related to the designee selection process?

	Factors	No	Little	Moderate	Great	Very great	Don't know / No opinion	No response
a.	Local FAA offices appoint designees based on personal associations rather than qualifications and experiences.	7	15	12	10	11	7	0
b.	Shortage of designees in some geographic areas and in certain specializations.	4	6	23	15	5	9	0
c.	FAA limits the number of designees.	8	7	18	13	7	8	1

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Weaknesses of FAA's designee programs								
d.	FAA does not follow its own selection criteria.	4	17	13	11	8	8	1
e.	The selection process lacks sufficient rigor to ensure that designees are competent and will perform high quality work.	3	22	14	9	9	4	1
f.	Variation in the qualifications of designees.	3	19	19	13	4	3	1
g.	The application process for becoming a designee takes a long time.	8	18	15	10	3	8	0
h.	The selection process is not well defined.	8	24	13	8	4	4	1

4. How much of a weakness is each of the following factors related to designee activities?

	Factors	No	Little	Moderate	Great	Very great	Don't know / No opinion	No response
a.	Applicants for certification shop for "easy" designees.	0	11	14	11	18	6	2
b.	Employer pressure of financial incentives may lead to conflicts of interest.	10	13	15	8	12	4	0
c.	Some applicants for certification are unfamiliar with FAA requirements and designee's authority limits.	7	12	21	12	6	1	3
d.	Designees' fees are inconsistent and unregulated.	8	15	12	9	8	7	3
e.	Designees perform beyond their delegated authority.	7	21	10	10	6	6	2
f.	Designees provide inconsistent service.	6	14	25	9	6	2	0
g.	Designees perform more activities in less time than standards would seem to require.	8	19	11	10	4	9	1
h.	Designees are not current on regulations and orders	11	19	18	9	4	1	0
i.	Designees are constrained geographically.	9	20	15	10	3	3	2
j.	Companies with organizational designations appoint inexperienced engineers to make approvals and do not train them in the certification process.	8	12	8	5	7	19	3
k.	Erroneous certification by designees	7	18	15	5	7	7	3
l.	Designees do not understand their full authority.	8	19	18	5	6	4	2
m.	The current scope of organizational delegation is narrow.	9	18	10	8	3	12	2
n.	Designees perform outside of their jurisdiction without the knowledge and authorization of local FAA offices.	9	17	12	5	4	15	0

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Weaknesses of FAA's designee programs								
o.	Limitations on the approval authority of designees.	10	23	16	5	2	4	2
p.	Applies only to Designated Mechanic Examiners: Inflexible procedures for testing candidates for A&P certificates.	4	3	6	2	2	25	20

5. How much of a weakness is each of the following factors related to FAA oversight?

	Factors	No	Little	Moderate	Great	Very great	Don't know / No opinion	No response
a.	FAA offices' level of oversight and interpretation of rules are inconsistent.	2	5	17	16	20	0	2
b.	Inactive, unqualified, or poor performing designees are not identified or removed expeditiously.	1	8	22	15	12	3	1
c.	It is difficult to terminate poor performing designees.	2	9	16	6	17	12	0
d.	Inadequate surveillance and oversight of designees.	6	13	15	8	14	4	2
e.	FAA has not made oversight of designees a high enough priority.	4	9	18	12	8	8	3
f.	Multitude of bulletins, advisory circulars, and other documents from FAA have resulted in conflicting information and procedures.	1	11	23	10	10	2	5
g.	FAA management does not agree with engineers' or inspectors' judgment about disciplining or removing poor performing designees.	4	11	7	9	10	18	3
h.	Oversight process is burdensome for FAA staff.	6	11	17	8	10	9	1
i.	Designees are not held accountable for their findings.	10	19	8	7	11	5	2
j.	FAA does not terminate poorly performing organizational designees because that would put an entire company out of business.	4	13	10	9	8	17	1
k.	FAA does not have adequate authority to impose penalties on certain types of designees.	9	14	11	8	8	10	2
l.	Lack of FAA process to evaluate the designee programs.	5	11	19	10	5	7	5
m.	Lack of independent review of data. Designees perform the analysis of the data that they then approve. The data are not reviewed by a different person.	6	15	10	9	5	12	5

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Weaknesses of FAA's designee programs								
n.	FAA engineers duplicate efforts of designees.	4	20	8	4	6	17	3
o.	FAA engineers are reluctant to delegate routine activities to designees.	6	11	10	6	4	21	4
p.	FAA management pressures FAA engineers to give designees' findings less scrutiny than standards require.	4	14	3	1	9	25	6
q.	FAA inspectors and engineers lack the level of professional experience necessary to oversee designees.	9	19	12	7	2	9	4
r.	The designee programs lack formal methods of appeal when designees' privileges are revoked.	14	13	12	5	2	12	4
s.	Designees as well as the FAA inspectors/engineers who oversee them have little or no familiarity with the products upon which findings are being made.	6	23	12	2	4	10	5
t.	FAA field office staffs do not have complete knowledge of designees within their jurisdictions.	5	13	23	3	3	10	5
u.	Applies only to Aviation Medical Examiners (AME): Error letters are inaccurate indicators of an AME's performance.	1	0	3	1	1	31	25

6. How much of a weakness is each of the following factors related to training for designees, FAA inspectors, and FAA engineers?

	Factors	No	Little	Moderate	Great	Very great	Don't know / No opinion	No response
a.	FAA engineers and inspectors do not receive adequate training in designee oversight.	6	6	12	14	7	12	5
b.	Lack of adequate and accessible designee training.	5	15	19	10	4	5	4
c.	Designees are technically well versed in the area in which they are authorized but poorly educated in the relevant regulations.	8	22	13	7	5	3	4
d.	Seminar instructors for designee training are not current or knowledgeable in the subject matter.	14	12	14	6	4	8	4
e.	Training disparity between FAA engineers and designees results in designees being more current on new orders, advisories, and policies.	12	13	10	4	5	13	5

Overall Weaknesses of FAA's Designee Programs

7. How much weakness, overall, is there in each of the following main areas of FAA's designee programs?

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Weaknesses of FAA's designee programs

	Weakness	No	Little	Moderate	Great	Very great	Don't know / No opinion	No response
a.	FAA oversight	2	10	18	14	12	5	1
b.	Workload of FAA inspectors and aircraft certification engineers who oversee designees.	4	5	16	15	11	10	1
c.	Training for FAA inspectors and FAA engineers who oversee designees.	3	5	18	12	10	11	3
d.	Designee selection process.	4	18	15	10	7	6	2
e.	Training for designees	7	13	17	11	6	4	4
f.	Designee activities.	6	20	12	12	4	6	2

Addressing Weaknesses with or Otherwise Improving FAA Inspector/engineer Workload

8. Increase the number of engineers/inspectors so that FAA staff have more time available for oversight of designees.

	Questions	No	Low	Some	High	High-est	Don't know / No opinion	No response
a.	How important is it to implement this improvement?	4	10	14	17	12	4	1
b.	How feasible is it to implement this improvement?	2	8	21	12	11	7	1
9.	**Increase the priority given to the oversight of designees within FAA.**							
a.	How important is it to implement this improvement?	2	8	17	24	4	5	2
b.	How feasible is it to implement this improvement?	0	6	13	21	14	6	2
10.	**Establish specific ratio for FAA engineers/inspectors to designees.**							
a.	How important is it to implement this improvement?	5	15	11	15	6	8	2
b.	How feasible is it to implement this improvement?	0	6	16	13	16	8	3

Addressing Weaknesses with or Otherwise Improving the Designee Selection Process

11. Select designees according to their qualifications and experience rather than on personal associations with FAA managers.

a.	How important is it to implement this improvement?	0	6	7	19	28	1	1
b.	How feasible is it to implement this improvement?	1	2	6	10	40	2	1

12. Clearly define and consistently follow the criteria for selecting designees.

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Improving FAA's designee programs								
a.	How important is it to implement this improvement?	0	5	7	23	24	1	2
b.	How feasible is it to implement this improvement?	1	1	7	24	24	3	2
13.	**Establish a review process for determining demand for designees by type, specialty, activity level, and geographic location.**							
a.	How important is it to implement this improvement?	5	9	20	16	8	2	2
b.	How feasible is it to implement this improvement?	3	1	11	28	11	4	4
14.	**Streamline procedures for the appointment of designees.**							
a.	How important is it to implement this improvement?	4	15	18	14	7	3	1
b.	How feasible is it to implement this improvement?	1	1	15	25	16	3	1
15.	**Centralize the designee selection process.**							
a.	How important is it to implement this improvement?	16	6	14	14	9	2	1
b.	How feasible is it to implement this improvement?	7	9	13	14	13	5	1
Addressing Weaknesses with or Otherwise Improving Designee Activities								
16.	**Improve FAA communication with designees, including communications on regulations and orders and complicated certification situations.**							
a.	How important is it to implement this improvement?	0	8	8	24	18	3	1
b.	How feasible is it to implement this improvement?	0	0	5	28	23	4	2
17.	**Clarify designations, including authority and limits.**							
a.	How important is it to implement this improvement?	1	8	8	25	14	4	2
b.	How feasible is it to implement this improvement?	0	1	5	24	25	5	2
18.	**Make company or organizational designees part of a different group within the company than the group seeking the certification.**							
a.	How important is it to implement this improvement?	6	6	13	14	14	8	1
b.	How feasible is it to implement this improvement?	3	8	11	17	13	9	1
19.	**Determine if there are additional safety-critical areas that should be beyond the scope of designees' authority.**							
a.	How important is it to implement this improvement?	5	8	12	16	12	8	1

(Continued From Previous Page)								
Improving FAA's designee programs								
b.	How feasible is it to implement this improvement?		2	4	11	21	15	8	1
20.	**Provide individual designees with identification cards listing their delegated authorizations that could be requested by and displayed to customers.**							
a.	How important is it to implement this improvement?		6	7	17	11	16	3	2
b.	How feasible is it to implement this improvement?		1	0	9	16	30	5	1
21.	**Increase FAA participation in complex approvals conducted by a Designated Alteration Station (DAS).**							
a.	How important is it to implement this improvement?		1	5	9	14	13	17	3
b.	How feasible is it to implement this improvement?		0	0	5	22	14	18	3
22.	**Implement FAA's Organization Designation Authorization proposal and provide training for FAA employees on how to oversee a delegated organization.**							
a.	How important is it to implement this improvement?		8	5	9	14	12	11	3
b.	How feasible is it to implement this improvement?		1	3	8	21	13	13	3
23.	**Require designees performing work outside of their geographic boundaries to notify their home FAA office and the FAA office where the work is being performed.**							
a.	How important is it to implement this improvement?		8	11	13	16	8	4	2
b.	How feasible is it to implement this improvement?		2	2	4	18	27	5	4
24.	**Implement legislative proposal to establish "certified design organizations" (also called "design organization certificates").**							
a.	How important is it to implement this improvement?	14	5	9		8	7	16	3
b.	How feasible is it to implement this improvement?	2	6	15		10	9	17	3
25.	**Develop a fee structure of what designees may charge.**							
a.	How important is it to implement this improvement?		23	16	5	8	7	1	2
b.	How feasible is it to implement this improvement?		9	12	10	9	13	5	4
26.	**Provide designees with broader authority.**							
a.	How important is it to implement this improvement?		13	16	13	11	3	4	2
b.	How feasible is it to implement this improvement?		3	2	17	24	9	4	3
27.	**Make public the fees charged by designees.**							

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Improving FAA's designee programs								
a.	How important is it to implement this improvement?	20	12	14	5	7	2	2
b.	How feasible is it to implement this improvement?	9	4	17	11	15	4	2
28.	**Establish a standard for limiting the number of certifications that a designee can perform in a given period of time.**							
a.	How important is it to implement this improvement?	23	14	10	9	2	3	1
b.	How feasible is it to implement this improvement?	8	11	15	13	8	6	1
29.	**Assign designees to applicants instead of allowing applicants to choose designees.**							
a.	How important is it to implement this improvement?	24	13	11	4	4	4	2
b.	How feasible is it to implement this improvement?	12	10	12	9	9	8	2
Addressing Weaknesses with or Otherwise Improving FAA Oversight								
30.	**Hold designees accountable for their findings.**							
a.	How important is it to implement this improvement?	1	0	4	22	31	0	4
b.	How feasible is it to implement this improvement?	0	3	6	16	30	2	5
31.	**Ensure that FAA employees who oversee designees are knowledgeable about the regulations, policies, and processes applicable to the designee's particular specialization.**							
a.	How important is it to implement this improvement?	0	0	6	17	32	1	6
b.	How feasible is it to implement this improvement?	0	0	6	19	30	2	5
32.	**Increase penalties (including the ability to terminate their status as designees) for individual and organizational designees found to violate standards or who do not exercise proper judgment.**							
a.	How important is it to implement this improvement?	4	3	8	15	28	2	2
b.	How feasible is it to implement this improvement?	0	2	4	27	24	3	2
33.	**Establish strict criteria and process for identifying and removing designees that are underperforming, unqualified, or inactive.**							
a.	How important is it to implement this improvement?	0	7	11	20	22	2	0
b.	How feasible is it to implement this improvement?	0	1	11	22	25	2	1
34.	**Improve coordination among the regional offices and headquarters to standardize designee oversight.**							
a.	How important is it to implement this improvement?	1	3	15	20	18	2	3
b.	How feasible is it to implement this improvement?	1	4	9	24	18	3	3

(Continued From Previous Page)

Improving FAA's designee programs								
35.	**Obtain feedback from users, designees, and other stakeholders regarding the certification process and quality of oversight.**							
a.	How important is it to implement this improvement?	2	5	14	18	19	1	3
b.	How feasible is it to implement this improvement?	0	4	6	28	17	3	4
36.	**Conduct audits to determine if designees have been given adequate oversight.**							
a.	How important is it to implement this improvement?	0	7	15	26	9	2	3
b.	How feasible is it to implement this improvement?	0	3	9	27	16	4	3
37.	**Improve FAA's public relations with those in the aviation community who use designees by providing timely, knowledgeable responses to public inquiries.**							
a.	How important is it to implement this improvement?	3	2	16	22	12	3	4
b.	How feasible is it to implement this improvement?	0	1	8	29	15	5	4
38.	**Establish a "whistleblower" program that would grant protection to FAA employees who identify problems with the designee programs.**							
a.	How important is it to implement this improvement?	10	4	9	17	15	3	4
b.	How feasible is it to implement this improvement?	4	9	8	16	18	3	4
39.	**Develop competency testing and performance standards for designees.**							
a.	How important is it to implement this improvement?	3	9	14	18	13	1	4
b.	How feasible is it to implement this improvement?	3	6	11	21	13	3	5
40.	**Increase the support by FAA management of engineers' and inspectors' judgment about disciplining poor performing designees.**							
a.	How important is it to implement this improvement?	2	8	9	18	12	7	6
b.	How feasible is it to implement this improvement?	2	4	15	17	11	6	7
41.	**Develop a formal process of appeal for designees facing discipline or termination.**							
a.	How important is it to implement this improvement?	1	8	14	19	9	4	7
b.	How feasible is it to implement this improvement?	1	1	10	20	18	6	6
42.	**Increase requirements for oversight and surveillance to be conducted by FAA inspectors and engineers.**							
a.	How important is it to implement this improvement?	8	6	11	17	11	4	5

(Continued From Previous Page)								
Improving FAA's designee programs								
b.	How feasible is it to implement this improvement?	4	4	18	14	12	6	4
43.	**Choose FAA aircraft certification offices with oversight responsibility based on their knowledge of the product involved rather than the geographic location of the designee.**							
a.	How important is it to implement this improvement?	5	6	11	18	8	7	7
b.	How feasible is it to implement this improvement?	2	4	15	13	11	10	7
44.	**Renew designees based on performance standards, rather than allowing renewal to be automatic.**							
a.	How important is it to implement this improvement?	4	11	13	12	14	3	5
b.	How feasible is it to implement this improvement?	2	3	11	20	18	4	4
45.	**Make FAA engineers responsible for understanding and approving the results of designee actions rather than checking only the paperwork associated with those actions.**							
a.	How important is it to implement this improvement?	8	9	9	12	12	6	6
b.	How feasible is it to implement this improvement?	6	9	10	15	9	7	6
46.	**Reduce the administrative (paperwork) burden of designee oversight.**							
a.	How important is it to implement this improvement?	3	8	18	19	5	4	5
b.	How feasible is it to implement this improvement?	3	5	18	18	8	6	4
47.	**Establish a panel of senior FAA inspectors/engineers to review allegations of impropriety by designees. Provide the panel with the authority to improve penalties.**							
	How important is it to implement this improvement?	6	12	14	11	12	5	2
	How feasible is it to implement this improvement?	5	7	16	14	12	6	2
48.	**Develop an automated system to allow designees to complete and submit documents electronically only when they are done correctly.**							
	How important is it to implement this improvement?	5	11	14	16	7	4	5
	How feasible is it to implement this improvement?	1	5	14	19	12	6	5
49.	**Develop specific statements or checklists that identify the steps in the certification process and the extent of the designee's authority.**							
	How important is it to implement this improvement?	4	5	24	16	4	4	5
	How feasible is it to implement this improvement?	1	1	17	21	11	7	4
50.	**Eliminate geographic boundaries imposed on aircraft certification designees.**							

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Improving FAA's designee programs								
	How important is it to implement this improvement?	10	7	9	9	10	12	5
	How feasible is it to implement this improvement?	2	3	10	14	12	15	6
51.	**Have FAA inspectors and engineers who oversee designees report to a central FAA focal point who is independent of their supervisors.**							
	How important is it to implement this improvement?	11	5	17	13	3	8	5
	How feasible is it to implement this improvement?	5	8	19	11	6	7	6
52.	**Prohibit designees from approving any documents that they have produced.**							
	How important is it to implement this improvement?	12	13	9	6	9	8	5
	How feasible is it to implement this improvement?	8	7	11	10	13	8	5
53.	**Applies only to Designated Engineering Representatives (DER): Make the selection and oversight process for company DERs the same as for consultant DERs.**							
	How important is it to implement this improvement?	5	4	12	8	7	16	10
	How feasible is it to implement this improvement?	0	2	8	14	11	17	10
54.	**Limit the ability of designees to contest their removal.**							
	How important is it to implement this improvement?	20	15	9	7	4	6	1
	How feasible is it to implement this improvement?	7	7	18	12	9	7	2
Addressing Weaknesses with or Otherwise Improving Training								
55.	**Improve availability of training for FAA inspectors and engineers to advance technical competence related to oversight of designees.**							
	How important is it to implement this improvement?	2	4	8	20	22	3	3
	How feasible is it to implement this improvement?	1	1	7	30	16	3	4
56.	**Ensure standard training of designees within specific specialties to improve consistency of their work.**							
	How important is it to implement this improvement?	1	3	14	20	20	0	4
	How feasible is it to implement this improvement?	1	3	9	24	20	1	4
57.	**Require consistent training for all designees with the same skill designation to improve the consistency among designees.**							
	How important is it to implement this improvement?	1	6	13	27	13	0	2

(Continued From Previous Page)								
Improving FAA's designee programs								
	How feasible is it to implement this improvement?	0	5	6	31	16	1	3
58.	**Increase number of subject matter workshops for designees, with instruction provided by industry experts, FAA specialists, engineers, and designees.**							
	How important is it to implement this improvement?	1	5	11	23	17	1	4
	How feasible is it to implement this improvement?	0	1	13	22	20	2	4
59.	**Require FAA inspectors and engineers to receive recurrent training related to the oversight of designees.**							
	How important is it to implement this improvement?	2	3	14	22	14	3	4
	How feasible is it to implement this improvement?	1	2	10	27	14	4	4
60.	**Require additional training for designees in regulations that apply to their work.**							
	How important is it to implement this improvement?	1	10	14	22	9	2	4
	How feasible is it to implement this improvement?	0	0	10	32	15	2	3
61.	**Improve and expand designee training, including routine skills testing.**							
	How important is it to implement this improvement?	2	11	11	16	15	2	5
	How feasible is it to implement this improvement?	2	4	13	24	12	3	4
62.	**Have experienced designees mentor designee candidates.**							
	How important is it to implement this improvement?	3	6	19	23	6	1	4
	How feasible is it to implement this improvement?	2	3	18	18	15	1	5
63.	**Make the training and standardization seminar for designees an annual requirement.**							
	How important is it to implement this improvement?	9	5	15	13	15	1	4
	How feasible is it to implement this improvement?	4	3	11	23	16	1	4
64.	**Applies only to Designated Alteration Station (DAS): Require additional training for FAA inspectors and engineers in areas such as designee selection and oversight, regulations that pertain to the activities of designees, and the recognition of a management structure that provides appropriate direction and support for DAS operations.**							
	How important is it to implement this improvement?	1	2	6	10	13	18	12
	How feasible is it to implement this improvement?	0	2	6	11	14	18	11

Source: GAO analysis of expert panel information.

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In addition to the above individuals, Howard Cott, Colin Fallon, Isidro Gomez, Curtis Groves, Brandon Haller, David Hooper, Jennifer Kim, Rosa Leung, Elizabeth A. Marchak, and Larry Thomas made key contributions to this report.

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