Before the Committee on Transportation and Infrastructure
Subcommittee on Aviation
United States House of Representatives

The Federal Aviation Administration's Oversight of On-Demand Aircraft Operators

Statement of
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Mr. Chairman, Ranking Member Petri, and Members of the Subcommittee:

We appreciate the opportunity to testify today on the Federal Aviation Administration's (FAA) regulatory framework and oversight challenges for on-demand aircraft operators. On-demand operators are a vital part of the air transportation system and our economy. In addition to conducting passenger flights and cargo operations, on-demand operators provide critical services, such as emergency medical transport and access to small remote communities. Over the last 10 years, however, on-demand operators have been involved in 155 fatal accidents, compared to 18 involving large commercial air carriers.

At the request of this Subcommittee, we completed a review and issued a report last July which discussed differences in regulations and oversight for on-demand operators versus large, commercial carriers.[1] The mid-air collision between an air tour helicopter and a private aircraft over the Hudson River last August highlighted the inherent risks in on-demand operations and underscores the need for continued efforts to enhance oversight of this industry. We are currently completing a second review on specific challenges in FAA's oversight of this industry and plan to issue our report later this spring.

My testimony today is based on this body of work. I would like to discuss three areas in which we have focused our efforts: (1) the inherent risks surrounding on-demand operators, (2) the need for an updated and effective regulatory framework given these risks, and (3) challenges facing FAA in moving from compliance-based oversight to a risk-based approach.

IN SUMMARY

On-demand operators typically fly in an environment that poses a number of safety risks. Specifically, they tend to have short flights, resulting in more takeoffs and landings, the most dangerous part of a flight. They also operate at altitudes that are vulnerable to terrain and weather obstacles and fly to and from small airports that do not have air traffic control towers or emergency equipment. Despite these inherent risks, FAA's current oversight of this industry is based on compliance with regulations that are less rigorous than those for commercial carriers and, moreover, have not been significantly updated in over 3 decades. Our work has shown that targeted, risk-based oversight from FAA could help mitigate many of the risk factors we identified. However, to shift to a risk-based oversight model, FAA will need to overcome several challenges, including ensuring it has enough inspectors with the right skills and sufficient data to oversee this diverse industry.

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[1] OIG Report Number AV-2009-066, "Report on On-Demand Operators: Less Stringent Safety Requirements and Oversight than Large Commercial Air Carriers," July 13, 2009. OIG reports are available on our website: www.oig.dot.gov.

BACKGROUND

FAA has three tiers of aviation oversight conducted under three primary regulations: (1) private owner operations regulated under Part 91;[2] (2) small, commercial operators flying primarily on-demand service regulated under Part 135;[3] and (3) large, commercial air carriers regulated under Part 121.[4] These three industry segments have unique operating environments and serve very different markets.

On-demand operators fly at the request of their customers and operate aircraft that are configured for 30 or fewer passengers or 7,500 pounds of payload or less. The operators comprising the on-demand industry segment can range from a company with 1 pilot and 1 aircraft to a company with over 600 aircraft. Operations include short flights to small regional airports, cross-country domestic flights, or international flights. Currently, there are more than 2,300 on-demand operators certificated by FAA across the country, compared to less than 100 large, commercial carriers. On-demand operators serve about 5,000 public airports compared to about 500 primary and commercial airports served by large carriers.

FAA has made progress toward improving aspects of its safety oversight, but our work continues to identify concerns with how this oversight is performed, particularly within the on-demand industry. Many of our concerns have also been identified by the National Transportation Safety Board (NTSB) as safety issues stemming from its investigations of on-demand accidents. There are currently 39 open NTSB recommendations related to on-demand operators.

ON-DEMAND OPERATORS FACE A NUMBER OF INHERENT RISKS

On-demand operators and large, commercial air carriers serve divergent markets with very different equipment and operating environments. Both industry and FAA agree that on-demand flights operate with more risk factors, which contributes to their higher accident rate. Specific risk factors include the following:

- **Diverse Aircraft Types:** On-demand operators fly many—and often older—aircraft types and models, adding to the complexity of maintenance, operations, and FAA inspections. Aircraft range from two-seat piston engine aircraft, helicopters, single-engine airplanes, turbine-powered airplanes, float planes, and jets with 10 or more seats. The 22 operators we reviewed had 321 registered aircraft comprised of 65 different makes/models, from small Cessnas to Gulfstream jets and Sikorsky helicopters.

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[2] 14 CFR § 91, General Operating and Flight Rules.
[3] 14 CFR § 135, On-Demand, Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft. 14 CFR § 119, Certification: Air Carriers and Commercial Operators, and some of the requirements of Part 91 also pertain to on-demand operators and commercial air carriers.
[4] 14 CFR § 121, Operating Requirements: Domestic, Flag, and Supplemental Operations.

- **Technology Limitations:** Many of the smaller on-demand operators still have very basic equipment in their cockpits, compared to commercial air carriers that primarily operate jet aircraft equipped with ground proximity warning and Traffic Collision Avoidance Systems (TCAS). TCAS allows pilots to "see" aircraft traffic in their vicinity but is not required for on-demand aircraft with nine or fewer seats. Yet, operators with that type of aircraft make up 85 percent of the on-demand industry. Since TCAS can cost at least $15,000 per aircraft to install, there is little motivation for small operators to pursue this technology. Other technologies not required for these operators include safety tools, such as in-flight weather radar and cockpit voice/data recorders.

- **High-Risk Corridors:** Many on-demand aircraft fly at lower altitudes in less regulated airspace than commercial carriers. This can create busy, high-risk corridors, in which several types of aircraft converge and fly at lower altitudes, making them more vulnerable to terrain and weather obstacles.

- **Crew:** Due to the various destinations that on-demand operators service, their pilots are often unfamiliar with the flight route. Further, cabin attendants on smaller on-demand aircraft are not required to have safety or emergency training.

- **Communications:** On-demand operators often fly to and from small airports without air traffic control towers, so pilots do not have the benefit of a controller's guidance, which can assist flights during periods of low visibility or adverse weather. For example, on-demand operators in southern Florida frequently fly tourists to the Bahamas, where only 4 of the approximately 30 airports have air traffic control towers.

All of these risk factors are inherent in on-demand operations as they include more frequent flights and therefore more takeoffs and landings. As shown by NTSB statistics, higher risks have translated into more fatal accidents for on-demand operators versus commercial carriers. Between 2000 and 2008, the fatal accident rate for on-demand operators was nearly 50 times higher than that of commercial carriers.[5] The most fatalities for the period 2003 through 2008 occurred in the states of Alaska and Hawaii and in the Gulf of Mexico. In both Alaska and Hawaii, on-demand air tours are common, and small planes are a major source of transportation for people and cargo. In the Gulf of Mexico, there are numerous helicopter operations delivering crews and supplies to oil rigs.

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[5] On-demand accident rates are estimated because FAA does not require operators to report annual operational data. The NTSB accident rate is calculated using accidents per 100,000 flight hours. The flight hours for on-demand are projected from a voluntary annual general aviation survey (the General Aviation and Air Taxi Activity Survey, or GAATA).

CURRENT REGULATIONS FOR ON-DEMAND OPERATORS HAVE NOT KEPT PACE WITH INDUSTRY CHANGES

The on-demand industry has changed significantly over the past 30 years. Today, on-demand operators commonly use jet aircraft and fly more complex operations and international flights. Despite these changes, FAA has not revised many Part 135 provisions since 1978. These regulations are also less rigorous than those for large, commercial carriers in key areas, such as flight crew requirements and maintenance inspections for aircraft (see table 1). Yet, FAA has not implemented recommendations made by its own Part 135 Aviation Rulemaking Committee or the NTSB to strengthen Part 135 regulations.

Table 1. Regulatory Differences Between Parts 135 and 121

Subject	Part 135	Part 121
Pilot Duty/Rest		
Maximum Yearly Flight Hours	1,400	1,000
Maximum Flight Hours in 24-Hr. period	10 hours	8 hours
Personnel Requirements		
Minimum Pilot-in-Command Experience/Hours	500 hours and commercial license	1,500 hours and Air Transport license
Crew Resource Management Training	Not Required	Required
FAA-Licensed Dispatcher	Not Required	Required
Maintenance		
Aging Airplane, Operator Supplemental Inspections	Not Required for all operators	Required
Aging Airplane, FAA Inspection and Records Review	Not Required for all operators	Required
Maintenance program that includes required inspection items and continuous analysis and surveillance system	Not Required for all operators	Required

Note: Depending on the size and type of aircraft used, FAA regulations for on-demand operations can be more or less restrictive. This table contains the least restrictive regulations for on-demand aircraft for each subject.

Less Stringent Requirements for Crew Training

On-demand operators are not required to follow some of the more stringent crew regulations that large, commercial carriers must operate under. First, most on-demand carriers are not required to provide their pilots with Crew Resource Management (CRM) training, which focuses on leadership and decision making skills in the cockpit and is one of the NTSB's top six recommended safety improvements for on-demand operators. The NTSB determined that crew errors were the primary cause of three on-demand accidents between 2001 and 2004 and concluded that an effective CRM program might have prevented them. FAA issued a Notice of Proposed

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Rulemaking for Part 135 CRM training in May 2009 and is currently reviewing industry comments. We plan to monitor the progress of the rule for this critical training.

Second, on-demand operators are not required to provide safety training for cabin attendants if the aircraft carries 19 or fewer passengers.[6] The February 2005 accident in Teterboro, New Jersey, demonstrates the need for this type of crew training. The passenger jet crashed on takeoff, destroying the aircraft and resulting in serious injuries. The NTSB's investigation of the incident found significant safety breaches. Specifically, passengers did not receive a safety briefing prior to takeoff, some passengers were not wearing seatbelts when the takeoff roll began, and the cabin aide was unable to open the main cabin door to evacuate passengers. The NTSB concluded that training was inadequate to prepare the cabin aide to perform her assigned duties.

Finally, on-demand operators are not subject to certain requirements for non-flight crew support. For example, unlike commercial carriers, on-demand operators are not required to have FAA-licensed dispatchers to monitor flight progress and provide the pilot with safety information, such as weather and airport conditions, before and during flight. Instead, on-demand operators need only establish procedures for locating and following each flight so they can quickly notify FAA or conduct search-and-rescue if an aircraft is overdue or missing.

Maintenance Requirements Are Lacking, Despite On-Demand Operators' Aging Fleet

About 60 percent of the on-demand passenger and cargo fleet is over 20 years old,[7] compared to the average age of 10 years for aircraft flown by large, commercial carriers.[8] Despite this difference, maintenance requirements for on-demand operators are less stringent. While FAA requires aging aircraft inspections for Part 121 and Part 135 commuter aircraft that have been in service for 14 years or longer, no similar requirements are in place for the majority of on-demand operators.

Many of the maintenance regulations for on-demand aircraft seating 10 or more passengers are similar to those for large, commercial aircraft. For example, carriers using those types of aircraft must have a Continuing Analysis and Surveillance System (CASS) and a Required Inspection Items (RII) process. CASS is an internal evaluation system that regularly reviews the performance and effectiveness of an air carrier's maintenance and inspection program and corrects any identified deficiencies.

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[6] This is also true for the small number of Part 121 aircraft that seat 19 or fewer passengers.

[7] Section 735 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, Pub. L. No. 106-181 (2000) (codified at 49 U.S.C. § 40101). Section 735 of the Act mandated a study of the operations of the air taxi industry. FAA issued this report, "Part 135 Air Taxi Operators (ATO) Study," to Congress. The report is undated, but according to secondary sources it was issued in December 2004.

[8] OIG calculated using 2007 air fleet age data from www.airsafe.com.

RIIs are mandatory maintenance activities that, due to their importance to the overall airworthiness of the aircraft, must be independently inspected by a specially trained inspector after the work is complete. Although these are critical elements of an air carrier's maintenance program, they are not required for on-demand aircraft seating nine or fewer passengers, which make up a larger percentage of the industry and are involved in more fatal accidents.

FAA's Voluntary Safety Efforts for Emergency Helicopter Operators Have Not Been Effective

Certain segments of the on-demand industry have greater risks and therefore warrant risk-based oversight. This is particularly the case with Helicopter Emergency Medical Services (HEMS) operations, which are frequently conducted in high-risk environments, such as poor weather, low visibility, and high stress. Many HEMS flights pick up patients at accident scenes and land at hospital helipads without the benefit of air traffic control.

High fatalities and the high-risk HEMS environment led FAA to establish a HEMS safety initiative in 2005. Rather than regulatory requirements, this initiative focused on recommendations for voluntary operator actions, which have been insufficient to ensure safe operations and decrease fatal accidents. Fatal HEMS accidents increased considerably in 2008, with a total of 8 crashes that resulted in 29 fatalities. In January 2009, the NTSB issued a report calling on FAA to impose stricter requirements on all HEMS flights and held a public hearing the following month. FAA now has a HEMS rulemaking effort underway, but to date has not issued a proposed rule.

FAA Regulations Do Not Provide One Level of Safety for Air Tour Passengers

Air tours are inherently high-risk, as they are usually conducted at low altitudes in areas where other aircraft are operating and with pilots conversing with passengers. Despite these risks, Part 135 regulations include an exception that allows some air tour operators to fly for hire under Part 91 regulations for general aviation.[9] This means they may receive less oversight since air tours operating under Part 91 regulations do not have an annual FAA surveillance plan. Between January 2003 and July 2009, there were 86 air tour accidents operating under this exception, 12 of which resulted in 23 fatalities. For example, in 2004, an air tour operating under Part 91 regulations crashed in Hawaii, killing the pilot and four passengers. The NTSB cited the lack of FAA surveillance as a contributing factor in the fatal accident. Prior to the accident, the air tour operator had never received an FAA operations inspection.

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[9] The Part 135 exception allows air tours to fly under Part 91 rules if they operate within a 25-mile radius of their takeoff point and do not make any interim landings.

In 1995, the NTSB recommended that FAA develop and implement national standards to bring all air tour flights under Part 135 requirements. FAA issued a Notice of Proposed Rulemaking for air tours in October 2003 that would have limited Part 91 air tours to charitable and nonprofit events. However, FAA received thousands of comments, some of which argued that complying with Part 135 regulations would drive many small operators out of business. As a result, FAA substantially revised the rule's provisions before releasing it in February 2007. While the new rule requires air tours operating under Part 91 regulations to obtain an FAA letter of authorization, we are concerned that the new rule does not address all identified safety issues. For example, the rule still would not require many of the standards in place for Part 135 operators, including pilot training programs, more stringent maintenance policies, flight time limitations, crew rest restrictions, and an FAA surveillance program.

FAA Has Not Addressed Recommendations To Strengthen Part 135 Regulations

In response to new technologies, new aircraft types, and changes in on-demand operating environments, FAA formed an Aviation Rulemaking Committee, or ARC, in 2003 to review Part 135 regulations. In September 2005, the ARC submitted 124 recommendations to FAA covering issues such as crew rest, flight in icing conditions, cockpit voice recorders, and collection of operational data. To date, however, FAA has not issued final rulemakings to address any of the ARC's recommendations. In addition, there are currently 39 open NTSB recommendations from on-demand accident investigations—some of which were issued as early as 2003. Table 2 shows the ARC and similar NTSB recommendations to improve on-demand safety in several key safety areas.

Table 2. Examples of Open On-Demand ARC and NTSB Recommendations

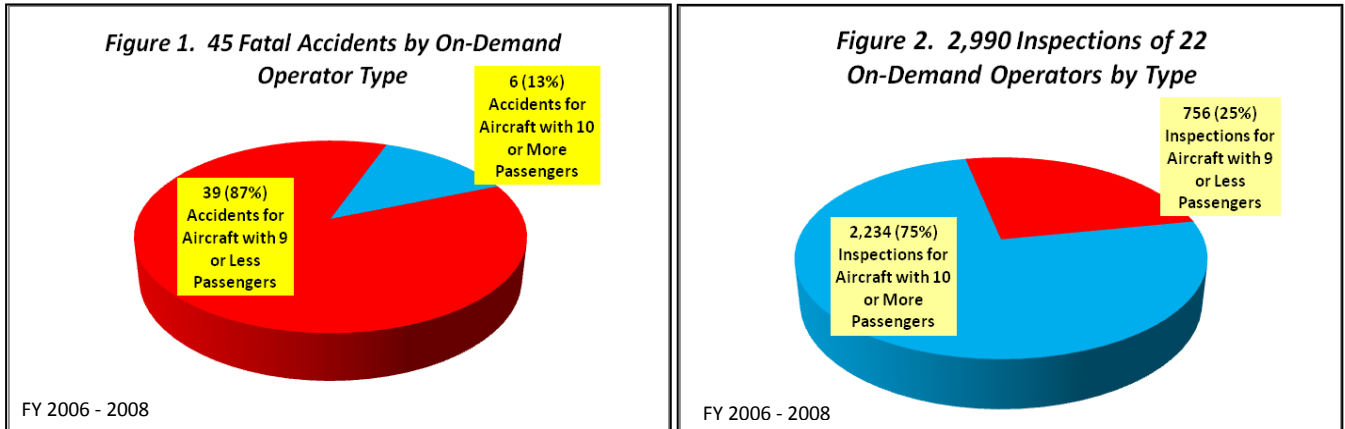| ARC Recommendation and Proposal to FAA, September 2005	Similar NTSB Recommendation? (based On-Demand Accident Investigation)	FAA Action
Flight Duty and Rest		
Amend the flight, duty, and rest limitations to be more applicable to air carriers operating under regulations for on-demand operators.	**Yes -** NTSB Most Wanted (all commercial operations)	**No NPRM to date**
Icing Conditions		
Regulations for pilot training to include ice detection in order to reduce dangers applicable to on-demand aircraft.	**Yes** (all commercial operations)	**No NPRM to date**
Crew Resource Management (CRM)		
Require dual-pilot on-demand operations to establish an FAA-approved CRM training program.	**Yes -** NTSB Most Wanted	**NPRM issued May 1, 2009**
Cabin Safety		
Create two categories of crewmembers that are assigned cabin duties: Cabin Safety Crewmember and Passenger Service Specialist.	**Yes**	**Voluntary guidance issued. No NPRM to date**

FAA'S OVERSIGHT OF ON-DEMAND OPERATORS IS NOT DRIVEN BY RISK BASED ASSESSMENTS

Despite the significant risks inherent to on-demand operators, FAA lacks an oversight approach that targets areas posing the greatest risk. Instead, FAA's inspector work programs are based on pre-determined inspections designed at the national level.[10] As a result, on-demand operators and activities with the most risk receive fewer FAA inspections. Inspectors are also challenged by a heavy and complex workload, training and turnover issues, and inadequate data regarding on-demand operations.

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[10] Inspectors must complete all pre-determined inspections (R-items) assigned by the NPG and may add other inspections to their work plan (planned or P-items) for operators that they feel need additional oversight.

FAA Inspections Do Not Focus on Higher Risk On-Demand Operators and Activities

On-demand operators with aircraft carrying nine or fewer passengers pose the highest risk in the industry and represent more than 85 percent of total on-demand operators. However, FAA's National Program Guidelines (NPG) for assigning inspections tend to target on-demand operators with aircraft carrying 10 or more passengers. Consequently, FAA conducts far fewer inspections of the highest risk on-demand operators (see figures 1 and 2).

Figure 1. 45 Fatal Accidents by On-Demand Operator Type

6 (13%) Accidents for Aircraft with 10 or More Passengers

39 (87%) Accidents for Aircraft with 9 or Less Passengers

FY 2006 - 2008

Figure 2. 2,990 Inspections of 22 On-Demand Operators by Type

756 (25%) Inspections for Aircraft with 9 or Less Passengers

2,234 (75%) Inspections for Aircraft with 10 or More Passengers

FY 2006 - 2008

While FAA provides tools for prioritizing inspections, they are generally not being used. For example, FAA's Surveillance Priority Index (SPI)[11] uses factors such as fleet size, accidents and incidents, management turnover, and violations to quantify on-demand operators' risk status. Yet, only 6 of the 43 inspectors we interviewed used SPI risk scores. Many inspectors we interviewed also do not use FAA's Safety Performance Analysis System (SPAS) for safety or risk assessments—primarily because they believe SPAS is not useful in analyzing risks for their on-demand operators. Instead, they determine what needs to be inspected based on general perceptions or their experience with operators.

FAA also does not target its inspections to higher risk activities. Of key concern is the lack of operations inspections. Nearly 70 percent of fatal on-demand accidents are caused by pilot error, but less than 30 percent of all inspections we reviewed were of operations activities that would directly affect this risk, such as pilot training programs, crew and dispatch records, or trip records. As shown in figure 3, on-demand operators received more maintenance and avionics inspections than operations inspections. This is because FAA's NPG requires more of these types of inspections for on-demand operators with larger aircraft, even though maintenance and equipment problems have not been the primary cause of fatal on-demand accidents.

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[11] The SPI is currently in draft and inspectors are not required to use it.

Figure 3. Inspections by Specialty

FY 2006-2008
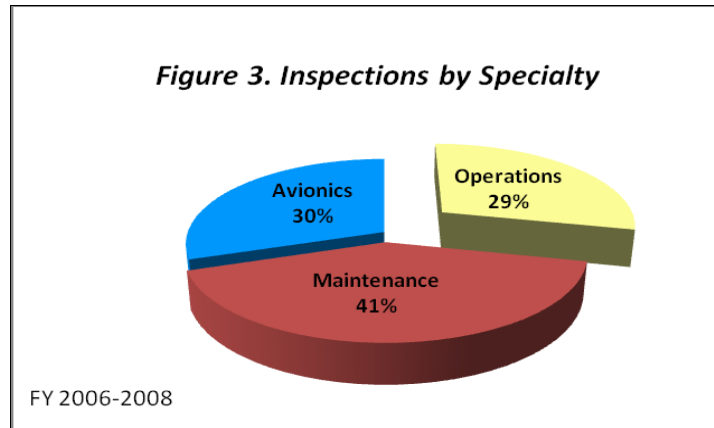
FAA plans to implement a risk-based System Approach for Safety Oversight for on-demand operators in 2013. However, because of the higher fatality rate associated with on-demand operations, FAA needs to implement an interim process that considers the inherent operational risk factors in on-demand operations.

Inspector Workforce Issues Impact On-Demand Oversight

While establishing a risk-based oversight approach is important, it will only be viable if FAA has enough qualified inspectors to implement it. To do so, FAA must address a number of challenges within the inspector workforce. For example:

- **Large, complex workload:** While FAA principal inspectors for large, commercial carriers are usually responsible for only one carrier, on-demand inspectors often oversee multiple operators and other entities, such as repair stations, flight schools, training centers, FAA designees,[12] and public use organizations. One on-demand inspector we spoke with was responsible for 53 different entities. In addition to inspections, on-demand inspectors have certificate management responsibilities, such as reviewing new certificate applications, approving revisions to manuals and operations specifications, and adding or removing aircraft from certificates. On-demand inspectors also have collateral duties such as desk duty and hotline and accident investigation.

- **High inspector turnover:** High inspector turnover was a problem at three of the six locations we visited: South Florida; Van Nuys, California; and Anchorage, Alaska. For example, in the Alaska office, 40 percent of the staff at the time of our visit were hired within the last 2 years. According to FAA personnel, it takes at least 1 year to train a new inspector and even longer for them to gain familiarity with their operators.

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[12] A designee is a representative of the FAA Administrator authorized to examine, test, and/or make inspections necessary to issue certificates for airmen, aircraft, and manufacturing processes. Both individuals and organizations can be granted designee status.

- **Gaps in training and experience:** The large number of on-demand operators, their geographic dispersion, and operations with multiple models of aircraft makes it difficult for inspectors to gain and maintain the necessary skill set needed to oversee this industry. For example, if an on-demand operator does not have a pilot qualified as a designee to conduct other pilots' competency checks on a specific type of aircraft, an FAA inspector with current experience in that aircraft must conduct the check. However, FAA inspectors may have difficulty maintaining current experience if their assigned operators use multiple types of aircraft. Operators cited numerous instances of waiting months for FAA to approve manuals or aircraft or perform competency evaluations of their pilots.

Data To Identify On-Demand Risk Factors Are Not Collected by FAA

FAA inspectors lack comprehensive and reliable data on the on-demand industry and operators because FAA relies on a voluntary survey (the General Aviation and Air Taxi Activity Survey or GAATA[13]) to collect industry data. In addition, FAA does not collect operator data related to the unique risk factors inherent in the on-demand operating environment.

While 63 percent of on-demand operators participated in the GAATA survey, this still leaves a large number of non-participants. Further, the survey does not collect critical metrics, such as the number of passengers and departures, or contain validated data on flight hours, which are necessary to project accident rates. The annual report on the survey is also not useful to inspectors since FAA does not analyze any of the data collected. Instead, FAA reports only a compilation of data tables. The NTSB cited problems with GAATA in both 2003 and 2005, and its recommendations led to FAA improvements, such as increasing the survey sample size to include all on-demand operators and sending the survey to operators rather than owners (who are usually financial institutions with no knowledge of operations).

However, FAA has not implemented other key NTSB recommendations, such as collecting more pertinent data on total flight hours and flight time by category (e.g., passenger or air medical purposes). This type of data is already required from large, commercial carriers and Part 135 scheduled (commuter) operators. The on-demand industry supports this concept, but there is a lack of consensus regarding how much and what type of data should be required given the large number of diverse operators. Moreover, the voluntary nature of the survey severely limits its usefulness. Required reporting is necessary because without reliable flight hour data, FAA cannot compare the safety records of on-demand operators in order to assess risk and prioritize inspections.

Finally, FAA inspectors do not collect data in the field on many of the operational factors that actually create the increased risks in on-demand operations. FAA

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[13] This survey is also referred to as the General Aviation Part 135 Activity (GAP135A) Survey.

inspectors visit these operators at least annually and could collect the data for input into a more robust SPI. The risk factors in both SPI and the Surveillance and Evaluation Program[14] are adapted from Part 121 oversight. Therefore, neither tool incorporates factors unique to on-demand operations, such as whether destination or departure airports have air traffic control, the terrain and weather patterns of the operations, or the type of safety equipment on the aircraft (such as TCAS). Without this type of data, FAA cannot identify and prioritize highest risk on-demand operators and activities for oversight.

CONCLUSION

On-demand operators play a vital role in commercial aviation but require increased FAA scrutiny. Because the on-demand operating environment carries inherently higher risks, adjustments are needed in FAA's regulatory and oversight approach. While FAA is taking steps to enhance the safety and oversight of on-demand operators in response to our recent report, much work remains. We will continue to monitor FAA's progress as it strives to provide one level of safety for all commercial operators.

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[14] The Surveillance and Evaluation Program (SEP) was added to the NPG in 2002 to incorporate risk assessment principles into oversight of commercial carriers not yet under the Air Transportation and Oversight System (ATOS). SEP is used by a small number of Flight Standards District Offices for on-demand oversight.