



Committee on Transportation and Infrastructure  
U.S. House of Representatives  
Washington DC 20515

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February 23, 2018

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**SUMMARY OF SUBJECT MATTER**

**TO:** Members, Subcommittee on Aviation  
**FROM:** Staff, Subcommittee on Aviation  
**RE:** Hearing on “The State of Aviation Safety”

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**PURPOSE**

On Tuesday, February 27, 2018, at 10:00 a.m., in 2167 Rayburn House Office Building, Members of the Subcommittee on Aviation will participate in a hearing to receive an update on the safety of the National Aviation System, including progress made and challenges still to be addressed. The Subcommittee will hear from representatives of the Federal Aviation Administration (FAA), National Aeronautics and Space Administration (NASA), National Transportation Safety Board (NTSB), Office of the Inspector General of the Department of Transportation (DOT IG), and Air Line Pilots Association (ALPA).

**BACKGROUND**

The National Airspace System currently enjoys a very high level of safety due to the sustained efforts of the aviation community, including the FAA, Congress, labor, and industry.

**Commercial Aviation**

At the beginning of the 21<sup>st</sup> century, U.S. airline industry and passenger traffic levels were severely impacted by the September 11<sup>th</sup> terrorist attacks and subsequent economic recessions. However, since 2009, commercial aircraft operations have stabilized, demand for air travel has increased annually, and airlines have returned to profitability. Despite the increased use of the National Airspace System, commercial aviation safety has improved as a result of collaborative efforts between government, labor, and industry.

The NTSB, the federal agency responsible for investigating transportation accidents and issuing safety recommendations without regard to cost, issued 54 recommendations and deployed teams to investigate more than 200 domestic and international accidents in 2016.<sup>1</sup> That same year, there were 31 accidents involving scheduled U.S. air carriers, none of which resulted

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<sup>1</sup>National Transportation Safety Board “National Transportation Safety Board 2016 Annual Report to Congress.”  
<https://www.nts.gov/about/reports/Documents/NTSB-2016-Annual-Report.pdf>

in fatalities or were categorized by the NTSB as a “major accident.”<sup>2</sup> While the total number of U.S. commercial air carrier accidents increased in 2016, the increase was primarily made up of accidents classified by the NTSB as “damage” (meaning accidents in which there were no fatalities or serious injuries, but there was substantial damage to an aircraft).<sup>3</sup> In 2016, accidents classified by NTSB as “damage” doubled compared to 2015, while the number of accidents classified as “injury” (meaning a nonfatal accident with at least one serious injury and without substantial damage to a Part 121 aircraft) dropped substantially. The NTSB’s “damage” category includes abnormal runway contact, ground handling and aircraft servicing events, landing gear collapses, and ground collisions.

The last major fatal U.S. commercial passenger airline accident occurred in 2009 when Colgan Flight 3407 crashed near Buffalo, NY, killing all onboard and resulting in one fatality on the ground.<sup>4</sup> In the wake of this accident, Congress mandated a number of safety reforms, including flight crew safety requirements. The flight crew safety requirements include new flight hour training requirements, new technical skills requirements, and new flight and duty time requirements for commercial pilots. The FAA has implemented most of these reforms, however progress has been slow on the remaining mandates, including the pilot records database intended to centralize information relating to pilot training performance.

## **General Aviation**

The United States is home to a large and diverse general aviation community that includes over 220,000 aircraft and approximately 500,000 general aviation pilots.<sup>5</sup> Traditionally, this sector of aviation has had the highest number of accidents, injuries, and fatalities. While general aviation safety has improved in recent years, in fiscal year 2016 there were still 213 fatal accidents with 379 fatalities. As a result, the FAA, aviation industry, and Congress have made efforts to improve general aviation safety over the past decade. These efforts include streamlining certification processes, revising the third class medical process, and a number of collaborative initiatives undertaken by industry and the FAA. For example, the FAA recently implemented a new policy, Non-Required Safety Enhancing Equipment (NORSEE), which streamlines the process for general aviation operators to install non-required safety equipment on their aircraft.<sup>6</sup>

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<sup>2</sup> NTSB classifies accidents in categories of “major”, “serious”, “injury”, or “damage.” A “major” accident is one that meets any of the following three conditions: the accident resulted in the destruction of a scheduled air carrier aircraft (part 121 aircraft), multiple fatalities, or single fatality along with a “substantially damaged” part 121 aircraft. A “serious” accident is one that results in a single one fatality without substantial damage to a part 121 aircraft or that results in a single serious injury with substantial damage to a part 121 aircraft. One accident in 2016 was classified as “serious.” “2016 preliminary aviation statistics” Table 2. [https://www.nts.gov/investigations/data/Pages/aviation\\_stats.aspx](https://www.nts.gov/investigations/data/Pages/aviation_stats.aspx)

<sup>3</sup> “2016 preliminary aviation statistics” Table 2. [https://www.nts.gov/investigations/data/Pages/aviation\\_stats.aspx](https://www.nts.gov/investigations/data/Pages/aviation_stats.aspx)

<sup>4</sup> In July 2013, Asiana Flight 214 crashed while landing at San Francisco International Airport, killing three passengers and injuring 187 others. In August 2013, UPS Flight 1354 crash-landed short of the runway at Birmingham–Shuttlesworth International Airport, killing the two pilots onboard. These accidents are not classified as U.S. commercial passenger airline accidents as they involved a foreign air carrier or a cargo flight, respectively.

<sup>5</sup> Federal Aviation Administration. “Fact Sheet – General Aviation Safety” [https://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=21274](https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=21274)

<sup>6</sup> Ibid.

While the number of general aviation fatalities has decreased over the past decade, there are still safety challenges and concerns within the general aviation community. Periodically, the NTSB issues its “Most Wanted List” of transportation safety improvements they believe to be priorities. Safety improvements related to general aviation have been included on the list for the last seven years. According to the NTSB, more than half of general aviation accidents are the result of loss of control, resulting in 1,194 fatalities between 2008 to 2014.<sup>7</sup> The FAA and the NTSB have held multiple safety forums, conducted safety education campaigns, and the FAA has established working groups with industry to discuss what steps can be taken to address this safety concern.

The NTSB has also investigated several high profile hot air balloon accidents, including one in Lockhart, Texas that killed all 15 passengers and the pilot. The NTSB found that the pilot of this hot air balloon had a “pattern of poor decision-making” and that his medical conditions and medications impaired his decision-making skills.<sup>8</sup> As a result of this accident, the NTSB raised concerns with the FAA’s oversight of commercial balloon operators and recommended the FAA eliminate the second class medical exemption for such operators.<sup>9</sup>

### **FAA’s Safety Oversight**

The FAA is responsible for overseeing the safety of our Nation’s civil aviation system. To carry out this responsibility, the FAA issues rules and regulations to promote the safety of the flying public, and regulates airlines, pilots (commercial and general aviation), flight attendants, mechanics, charter operators, repair stations, manufacturers, and others. Many of these regulations are in response to Congressional direction. In addition to issuing regulations, the FAA conducts regular and continuous oversight of all aspects of the aviation industry. Through inspections and enforcement actions, the FAA ensures that its safety standards are being met.

In 1998, the FAA launched an initiative known as “Safer Skies,” which was intended to reduce fatal accidents by 2007.<sup>10</sup> To achieve this goal, the FAA established the Commercial Aviation Safety Team (CAST) and the General Aviation Joint Steering Committee (GA JSC).<sup>11</sup> CAST is comprised of representatives from the FAA, NASA, and industry stakeholders, and works to reduce commercial aviation fatality risks through data collection and analysis. As part of this effort, the FAA and NASA have the goal of transitioning to a “prognostic safety analysis”.<sup>12</sup> As the aviation system safety rates have greatly improved over the decades, CAST is looking to shift its safety analysis from the traditional “diagnostic approach of examining

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<sup>7</sup> According to the FAA, “loss of control” accident involves an unintended departure of an aircraft from controlled flight. “Fly Safe: Prevention of Loss of Control Accidents” Sept 27, 2016.

<https://www.faa.gov/news/updates/?newsId=86586> and NTSB “Prevent Loss of Control in Flight in General Aviation” <https://www.nts.gov/safety/mwl/Pages/mwl5-2017-18.aspx>

<sup>8</sup> NTSB “Poor Piloting Decisions, Lack of Medical Requirements, Led to Fatal Texas Balloon Crash”

<https://www.nts.gov/news/press-releases/Pages/PR-20171017.aspx>

<sup>9</sup> Ibid.

<sup>10</sup> “Fact Sheet – Safer Skies,” March 26, 2001.

[https://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?print=go&contentKey=3263](https://www.faa.gov/news/fact_sheets/news_story.cfm?print=go&contentKey=3263)

<sup>11</sup> Ibid.

<sup>12</sup> “Fact Sheet – Commercial Aviation Safety Team” April 12, 2016

[https://www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsid=18178](https://www.faa.gov/news/fact_sheets/news_story.cfm?newsid=18178)

accidents after-the-fact, to a more proactive safety trend analysis.<sup>13</sup> Between 1998 and 2008, the fatality risk for commercial aviation in the United States fell by 83 percent.<sup>14</sup>

The GA JSC “works to improve general aviation safety through data-driven risk reduction efforts focused on education, training, and enabling new equipment in general aviation aircraft.”<sup>15</sup> The GA JSC, which is also comprised of representatives from government and industry, utilizes a consensus-based approach and safety data analysis to develop strategies for the reduction of fatal general aviation accidents.<sup>16</sup> The present goal of the GA JSC is to reduce the general aviation fatal accident rate by 10 percent from 2008 to 2018.<sup>17</sup>

### **Department of Transportation Inspector General Reports**

In recent safety audits, the DOT IG has raised concerns with FAA’s oversight in several safety areas, including the following:

- The FAA is responsible for ensuring that all aircraft are appropriately maintained, which includes oversight of suspected unapproved parts (SUPs) in the aviation system. The DOT IG conducted an audit and found that the FAA’s oversight of SUPs was lacking due to weaknesses in record keeping and “lack of management control,” casting doubt on whether the number of SUPs was being accurately reported.<sup>18</sup> The DOT IG issued 11 recommendations to the FAA to improve its oversight of SUPs.
- In 2015, the DOT IG reviewed FAA’s efforts in establishing the pilot records’ database. As a result of that review, the DOT IG raised concerns over the delays in establishing the database and FAA’s failure to make key decisions on how to incorporate records and database access.<sup>19</sup>
- The *FAA Modernization and Reform Act of 2012* (P.L. 112-95) directed the FAA to issue a rule on a variety of operational safety requirements for helicopter emergency medical service (HEMS) operations. In 2015, the DOT IG assessed the FAA’s implementation of this final rule.<sup>20</sup> The DOT IG found that the FAA needed to update “key oversight policies” and gather “meaningful” safety data in order to identify trends.<sup>21</sup>
- More recently, the DOT IG reviewed the FAA’s air traffic controller hiring process in response to concerns with the changes the FAA had implemented. In its audit, the

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<sup>13</sup> Ibid.

<sup>14</sup> Commercial Aviation Safety Team. “Homepage.” <http://www.cast-safety.org>

<sup>15</sup> General Aviation Joint Steering Committee. “About Us.” <http://www.gajsc.org/about-us/>

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

<sup>18</sup> Inspector General of Department of Transportation. “Enhancements Are Needed to FAA’s Oversight of the Suspected Unapproved Parts Program” May 30, 2017. <https://www.oig.dot.gov/library-item/35715>

<sup>19</sup> Inspector General of Department of Transportation “FAA Delays in Establishing a Pilot Records Database Limit Air Carriers’ Access to Background Information.” August 20, 2015. <https://www.oig.dot.gov/library-item/32653>

<sup>20</sup> Inspector General of Department of Transportation. “Delays in Meeting Statutory Requirements and Oversight Challenges Reduce FAA’s Opportunities To Enhance HEMS Safety” April 8, 2015. <https://www.oig.dot.gov/library-item/32450>

<sup>21</sup> Ibid.

DOT IG found that the FAA had not effectively implemented the new hiring process, which resulted in hiring delays.<sup>22</sup>

## **Congressional Oversight and the FAA Safety, Security and Extension Act of 2016**

The most recent extension of the FAA’s authorization, the *FAA Safety, Security and Extension Act of 2016* (2016 Extension Act, P.L. 114-190,), included a number of time sensitive and safety-critical mandates and reforms. For example, the 2016 Extension Act addressed issues relating to commercial airline and air ambulance safety, pilot training, controller staffing, repair station oversight, and aviation cybersecurity.

In the past several years, there have been a number of high profile air ambulance crashes where post-crash fires resulted in severe injuries and fatalities. In response to this, the 2016 Extension Act directed the FAA to evaluate and update as necessary the standards for crash-resistant fuel systems on rotorcraft. The 2016 Extension Act also set a deadline for implementation of the pilot record database originally required under the *Airline Safety and Federal Aviation Administration Extension Act of 2010* (P.L. 111-216). The FAA has since missed this deadline. Additionally, the 2016 Extension Act revised the FAA’s hiring process for air traffic controllers, an area where the FAA had failed to meet its goals for several years, resulting in nationwide staffing level concerns. Finally, the law includes reforms to the FAA’s risk-based oversight of domestic and foreign repair stations and requires the FAA to complete a comprehensive and strategic framework for aviation cybersecurity. The Committee continues to monitor the FAA’s progress in implementing these and other mandates.

### **Recent Safety Concerns**

#### Runway Safety

In the last year, there have been a number of high profile near misses at U.S. airports as a result of aircraft attempting to land on an incorrect runway or on a taxiway. For example, at San Francisco International Airport (SFO), there were three near misses within the span of six months. On July 7, 2017, Air Canada Flight 759 nearly landed on a taxiway instead of the runway at SFO. During its nighttime visual approach, Flight 759 erroneously lined up to land on a taxiway on which four passenger planes were operating instead of the adjacent runway. Before landing, the flight crew aborted the landing attempt and self-initiated a “go around,” missing the planes on the taxiway; the direction from air traffic control to initiate a “go around” came a few seconds later. The NTSB launched an investigation into the incident and found that at its lowest point, Flight 759 had only 26 feet of separation from one of the passenger aircraft on the taxiway.<sup>23</sup>

A few months later, on October 21, 2017, another Air Canada flight that was on the approach at SFO was instructed by air traffic control to “go-around” as it was unclear

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<sup>22</sup> Inspector General of Department of Transportation “While FAA Took Steps Intended To Improve Its Controller Hiring Process, the Agency Did Not Effectively Implement Its New Policies” February 15, 2017

<https://www.oig.dot.gov/library-item/35516>

<sup>23</sup> <https://www.nts.gov/investigations/Pages/DCA17IA148.aspx>

whether a recently arrived aircraft had fully cleared the runway. However, the Air Canada flight did not respond and landed on the runway, which radar ultimately showed was clear of the previously arrived aircraft. According to pilots of the Air Canada flight, they had encountered radio issues and had not heard the “go around” direction from air traffic control.<sup>24</sup> Lastly, on January 9, 2018, an Aeromexico flight at SFO lined up on an incorrect runway that already had an aircraft on it. Air traffic controllers noticed the issue and directed the Aeromexico flight to “go around.” The flight landed safely on its second landing attempt.<sup>25</sup>

### *Crash Resistant Fuel Systems on Helicopters*

Although the overall rate of fatal helicopter accidents has decreased in recent years, a number of high profile air ambulance fatal crashes have raised attention to air ambulance safety. In particular, two accidents<sup>26</sup> for which the NTSB completed safety reports found that occupants experienced survivable impact forces, but post-crash fires caused additional injuries and fatalities.<sup>27</sup> The NTSB has issued several recommendations related to the installation of crash-resistant fuel systems on rotorcraft in response to these and other accidents. As a result of this, and the aforementioned legislative requirement in the *2016 Extension Act*, the FAA established the Rotorcraft Occupant Safety Working Group and tasked it with addressing issues relating to post-crash fires and rotor occupant safety in general.

### *UAS Collisions*

Unmanned aircraft system (UAS) operations are growing at an exponential rate within the National Airspace System, particularly as a result of decreased costs and the establishment of the part 107 regulatory regime. While UASs offer exciting and innovative opportunities, recent research and incidents have raised concerns about the safety risks associated with their operation. A number of incidents in the United States and Canada have been reported in which a UAS struck or nearly struck manned aircraft. On February 14, 2018, it was reported that a Robinson R22 helicopter crashed near Charleston, South Carolina while taking evasive action to avoid hitting a UAS. While still under investigation, it is possible that this represents the first manned aircraft accident directly attributable to a UAS.<sup>28</sup>

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<sup>24</sup> <https://www.mercurynews.com/2017/10/23/again-faa-investigates-another-air-canada-runway-mix-up-at-sfo/>

<sup>25</sup> <https://www.cbsnews.com/news/aeromexico-plane-nearly-lands-wrong-runway-san-francisco-international-airport/>

<sup>26</sup> The Subcommittee is aware that there are several helicopter crashes where there are reports of a post-crash fires, however the NTSB has not released final reports on the crashes.

<sup>27</sup> “National Transportation Safety Board 2016 Annual Report to Congress.” p. 14  
<https://www.nts.gov/about/reports/Documents/NTSB-2016-Annual-Report.pdf>

<sup>28</sup> Alan Levin, “Drone suspected in helicopter crash landing in South Carolina,” *Insurance Journal*, February 16, 2018. <https://www.insurancejournal.com/news/southeast/2018/02/16/480807.htm>

**WITNESS LIST**

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