

**STATEMENT OF  
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**HEARING BEFORE THE COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON TRANSPORTATION, HOUSING AND URBAN  
DEVELOPMENT, AND RELATED AGENCIES: FEDERAL AVIATION  
ADMINISTRATION SAFETY OVERSIGHT**

**MAY 12, 2021**

Good morning, Chairman Price, and Ranking Member Diaz-Balart, and Members of the Subcommittee:

Thank you for the opportunity to meet today to discuss the Federal Aviation Administration's (FAA) approach to aviation safety oversight and to provide you with an update on our efforts to strengthen the aircraft certification process. Promoting safety and public confidence in the aviation system are the guiding principles for the agency. Our commitment to continuous improvement and integrating lessons learned are what I hope to clearly demonstrate to the committee.

Before discussing the main objectives of today's hearing, on behalf of the United States Department of Transportation and everyone at the FAA, I would like to acknowledge, as we have before, the families of the victims of the Lion Air and Ethiopian Airlines accidents and extend, once again, our deepest sympathies and condolences to them. We want the families to know that we have undertaken unprecedented steps over the past two years to investigate and understand the accidents and to improve our certification processes and operating procedures to make sure this never happens again. Importantly, many of the reforms we are undertaking will improve the margin of safety around the world. We have taken a leadership role in these efforts, and we will continue to work with our counterparts around the world to raise the bar not only within the

certification arena, but also in flight operations, maintenance, human factors, and pilot training and qualification.

It's also important to mention that the COVID-19 pandemic has impacted the FAA on many levels. Unfortunately, we have witnessed the loss of many of our employees and contractors due to the virus. While the FAA grieves for the families of our people who have been impacted by COVID-19, our workforce remains resilient and we appreciate the support we have received from congressional leaders, including members of this committee.

### ***Boeing 737 MAX Return to Service***

As you know, in November 2020, I issued an order rescinding the Emergency Order of Prohibition that grounded the Boeing 737 MAX, paving the way for the aircraft to safely return to commercial service.<sup>1</sup> This action became possible after more than 20 months of rigorous, methodical, and transparent safety analysis and reviews to address the issues that played a role in the tragic loss of 346 lives in the Lion Air and Ethiopian Airlines accidents. This process included an unprecedented multinational Joint Authorities Technical Review (JATR), commissioned by the FAA. Reinforcing the importance we place on international collaboration, nine other civil aviation authorities joined the FAA to conduct a comprehensive assessment of the certification of the automated flight control system on the 737 MAX. The JATR was the first of several independent reviews, which ultimately included the Secretary's Special Committee<sup>2</sup>, reviews by the Department of Transportation Inspector General (DOT IG), and oversight investigations by our congressional oversight committees.

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<sup>1</sup>[https://www.faa.gov/foia/electronic\\_reading\\_room/boeing\\_reading\\_room/media/737\\_MAX\\_Rescission\\_of\\_Grounding\\_Order.pdf](https://www.faa.gov/foia/electronic_reading_room/boeing_reading_room/media/737_MAX_Rescission_of_Grounding_Order.pdf)

<sup>2</sup>The Special Committee was established by the former Secretary of Transportation Elaine Chao to advise and provide recommendations to the Department on policy-level topics related to aircraft certification.

Before the 737 MAX was cleared to fly, the FAA completed a number of important safety actions—none of which were schedule driven and all of them were conducted in full view of Congress, the industry, the traveling public, and the international aviation community. In April 2020, the FAA shared with Congress its action plan and response to the official report of the Secretary’s Special Committee and the investigations completed up to that point.<sup>3</sup> The plan reflects the FAA’s commitment to transparency and to improving our certification process domestically and enhancing aviation safety globally. The independent Technical Advisory Board made up of FAA Chief Scientists and experts from the U.S. Air Force, NASA, and Volpe National Transportation Systems Center also reviewed the final Boeing 737 MAX design documentation and made return to service recommendations, which were adopted by Boeing and the FAA.

These processes led to important design changes to the automated flight control system on the 737 MAX—including a redesign of the Maneuvering Characteristics Augmentation System (MCAS) and updates to the crew alerting systems and flight crew operations procedures. The specific design changes, operational requirements, and the enhanced training requirements are discussed in detail in the Summary of the FAA’s Review of the Boeing 737 MAX made publicly available in November 2020.<sup>4</sup>

In addition to the design changes, the FAA also determined the enhanced training procedures needed to safely operate the aircraft. In concert with international partners from Canada, Europe, and Brazil, the FAA completed its evaluation of proposed pilot training to

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<sup>3</sup>[https://www.faa.gov/foia/electronic\\_reading\\_room/boeing\\_reading\\_room/media/FAAActionPlanResponseToSpecialCommitteeReport.pdf](https://www.faa.gov/foia/electronic_reading_room/boeing_reading_room/media/FAAActionPlanResponseToSpecialCommitteeReport.pdf)

<sup>4</sup>[https://www.faa.gov/foia/electronic\\_reading\\_room/boeing\\_reading\\_room/media/737\\_RTS\\_Summary.pdf](https://www.faa.gov/foia/electronic_reading_room/boeing_reading_room/media/737_RTS_Summary.pdf)

ensure impacts of the design change were understood. The FAA's Flight Standardization Board (FSB) for the Boeing 737 issued a report addressing pilot training needs for line pilots with various experience levels from the U.S. and international carriers, and made the report available for public review and comment. After considering the comments received, the FAA published the final version of the 737 FSB report.<sup>5</sup>

In late September 2020, I took the pilot training that was assessed by the FSB, which included academic instruction along with practicing the emergency procedures in the 737 MAX simulator. As a former line pilot who operated 737 aircraft, I also flew the airplane to evaluate its handling qualities and the functionality of the modified flight control system. We ultimately found that Boeing's design changes met FAA safety standards and supported a return to service of the Boeing 737 MAX.

The FAA is committed to ensuring that the conditions that contributed to the 737 MAX accidents never happen again, in any context. This means requiring specific corrective actions for the 737 MAX in particular and enhanced oversight for aircraft certification and safety in general. To meet this objective, we are implementing a number of changes to enhance and promote the use of safety management systems (SMS) and human factor considerations to ensure holistic, proactive assessments of hazards and support improvements in safety performance. Additionally, the FAA issued a notice of proposed rulemaking (NPRM) proposing an Airworthiness Directive (AD) for the 737 MAX that would require owners and operators to take specific corrective actions before returning the aircraft to service to ensure that it conforms to the

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<sup>5</sup> [https://www.faa.gov/foia/electronic\\_reading\\_room/boeing\\_reading\\_room/media/737\\_FSB\\_Report.pdf](https://www.faa.gov/foia/electronic_reading_room/boeing_reading_room/media/737_FSB_Report.pdf)

amended type certificate.<sup>6</sup> After considering more than 200 public comments on the NPRM, the FAA issued an AD specifying required design changes to address MCAS issues before the aircraft could return to service<sup>7</sup> and shared information<sup>8</sup> about the AD with civil aviation authorities worldwide to enable them to make an informed and safety-based decision on returning the aircraft to service in their regions. Based on these efforts, most of our foreign counterparts have also validated the aircraft as safe to fly in their respective countries.

The FAA also issued two notices to FAA maintenance and operations inspectors to provide guidance on maintenance<sup>9</sup> and training requirements<sup>10</sup> based on the design change. Overall, we believe that these requirements are essential for ensuring that all 737 MAX flight crew members understand the aircraft control systems and emergency procedures. The FAA continues to exercise its authority to issue airworthiness certificates and export certificates of airworthiness for all new 737 MAX aircraft manufactured since November 2020.

Over the past two years, we also received numerous recommendations from multiple investigations conducted by the Indonesian National Transportation Safety Committee, the Ethiopian Civil Aviation Authority (interim accident report), the National Transportation Safety Board, the JATR, the Special Committee, and most recently, the final report of the DOT IG. The FAA is taking a comprehensive approach to addressing these recommendations. And we are focused on making the necessary changes to strengthen and reform aircraft certification and

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<sup>6</sup> <https://www.federalregister.gov/documents/2020/08/06/2020-17221/airworthiness-directives-the-boeing-company-airplanes>

<sup>7</sup> <https://www.federalregister.gov/documents/2020/11/20/2020-25844/airworthiness-directives-the-boeing-company-airplanes>

<sup>8</sup> [https://www.faa.gov/foia/electronic\\_reading\\_room/boeing\\_reading\\_room/media/737\\_CAN-2020-24.pdf](https://www.faa.gov/foia/electronic_reading_room/boeing_reading_room/media/737_CAN-2020-24.pdf)

<sup>9</sup> [https://www.faa.gov/regulations\\_policies/orders\\_notices/index.cfm/go/document.information/documentID/103850](https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/103850)

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[https://www.faa.gov/foia/electronic\\_reading\\_room/boeing\\_reading\\_room/media/737\\_FSB\\_Report.pdf](https://www.faa.gov/foia/electronic_reading_room/boeing_reading_room/media/737_FSB_Report.pdf), Appendix

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safety oversight. This includes putting systemic process improvements in place to take a new look at foundational safety capabilities, such as incorporating system safety analysis and human factor assumptions into all aspects of the design process and ensuring coordination between the FAA's safety offices throughout the aviation lifecycle. We are actively expanding our oversight capabilities by advancing data and analytics tools, addressing our workforce needs, and working with the international community on a broad range of safety issues. It is our goal to advance safety globally, and we will continue to work closely with our foreign civil aviation partners to that end.

### ***Aircraft Certification, Safety, and Accountability Act***

In addition to the work that the FAA has done over the past two years to safely return the 737 MAX to service and apply lessons learned to our current work, Congress has also provided the FAA with legislative direction to reform the aircraft certification process. The Aircraft Certification, Safety, and Accountability Act (Act) includes a number of changes to existing law intended to improve the process for certifying aircraft. These improvements include reforming oversight of the Organization Designation Authorization (ODA) program, enhancing aircraft-pilot interfaces to account for human factors and human systems integration, and improving domestic and international pilot training. The Act has more than one hundred unique requirements that we are implementing in support of a holistic approach to aircraft certification and safety oversight. The FAA is committed to implementing the requirements under the Act as quickly as possible, and we have made substantial progress on initiating a number of them.

- *Safety Management Systems.* We have initiated a rulemaking that will contemplate requiring aircraft manufacturers that hold both a type certificate and a production certificate to adopt safety management systems, consistent with international standards

and practices.<sup>11</sup> As part of this rulemaking effort, we will also evaluate SMS requirements for repair stations, charter operators, and certain air tour operators. Integrating SMS into the processes for design and production, as well as operations, enables insight into the connections and interrelationship between systems. This initiative also supports the FAA's efforts to establish a just culture and risk management ideology, not only for operators, but for manufacturers and suppliers, regulators, air navigation service providers, and all industries involved in the aerospace system. Although our work on this important rulemaking is a key aspect of certification reform, rulemaking takes time. To help realize the benefits of SMS as soon possible, we are working closely with industry to encourage voluntary adoption and also advancing the rulemaking to require industry adoption. These efforts have been productive, and we currently have four design and manufacturing organizations that have voluntarily adopted an FAA accepted SMS with nine others in progress. I have seen significant progress on this front over the past year, and we will continue to emphasize and support the adoption and maturation of SMS programs in the commercial aviation sector.

- *Oversight, Undue Pressure, and Expert Review of ODAs.* We are standing up an expert panel to conduct a review of ODAs for transport airplanes. With respect to the new requirements for individual ODA unit member approvals, and preventing undue pressure of unit members we will be issuing revised policies to implement the legislative requirements. Additionally, as required under the FAA Reauthorization Act of 2018, we previously established the ODA Office to provide oversight and to ensure consistency of

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<sup>11</sup> RIN 2120-AL60, Safety Management System (SMS) for Parts 21, 91, 135 and 145 issued. <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202004&RIN=2120-AL60>

the FAA's audit functions under the ODA program. The existence of the ODA Office will help to facilitate many of the ODA reform requirements contained in the Act.

- *Recruitment, Retention, and Review of Certification Oversight Staff.* Aviation is incredibly dynamic, and it is imperative that the FAA has experts with advanced skills who are also innovators to ensure safety operations continue to evolve with the new emerging technologies and capabilities transforming the NAS. This Committee has recognized that need and has provided the FAA with critical funding to address staffing requirements. We greatly appreciate this support. Additionally, as required by the Act, we have initiated a review of the Senior Technical Expert Program and have taken steps to improve the recruitment and retention of engineers, safety inspectors, system safety specialists, and other qualified technical experts. These efforts will enhance the FAA's expertise in systems safety engineering, software, data analytics, and other valuable skills regarding innovative and future aviation technologies.
- *System Safety and Human Factors.* The Act requires the FAA to complete a rulemaking on system safety assessments for transport category aircraft. We have initiated the rulemaking to standardize regulations and guidance for conducting system safety assessments on transport category airplanes.<sup>12</sup> In addition, the Act requires the establishment of an expert safety review of the assumptions relied upon in aircraft design and certification of transport category aircraft—including assumptions regarding pilot response times. The expert review panel met twice in January, and we are coordinating

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<sup>12</sup> RIN 2120-AJ99, System Safety Assessments for transport category airplanes issued. <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202004&RIN=2120-AJ99>

efforts to address interrelated provisions regarding human factors, automation, and pilot training.

- *Risk Assessments and Type Certification Review.* The Act requires the FAA to enter an agreement with the National Academies of Sciences to develop a report regarding the methodology and effectiveness of the Transport Airplane Risk Assessment Methodology process used by the FAA. We entered that agreement on January 8, 2021, and estimate that the report will be completed by the end of calendar year 2021. Following the completion of the review, there will be follow-up work in the form of briefings to Congress, the Office of the Secretary of Transportation, and the Office of Management and Budget. We have also met with The MITRE Corporation to agree on a scope of work for an independent review of the FAA's aircraft type certification process. Additionally, to further international harmonization and collaboration with respect to aircraft type certification, the FAA is working to establish the Changed Product Rule International Authority Working Group, which will conduct its first meeting in June. This working group will develop recommendations for international policy and guidance to ensure proposed changes to an aircraft are evaluated from an integrated whole aircraft system perspective.

Chairman Price, I want to assure you, and each member of the Subcommittee, that the FAA is fully committed to carrying out the provisions of the Aircraft Certification, Safety, and Accountability Act. The FAA is determined to build and improve upon the processes and practices that have led to the safest period in aviation history while fostering a safe and just culture, while providing transparency to improve safety, operational excellence, and efficiency. We are confident

that we are making substantial and meaningful progress, and we will continue to keep Congress apprised throughout implementation.

### ***COVID-19 Response Efforts***

Looking back, I am amazed at how much the FAA workforce has accomplished over the past year, even in the midst of a global health emergency. I am extremely proud of the entire FAA team and the way our people have stepped up to serve our nation. Our people have risen to meet challenge after challenge, and my admiration for their work would not be complete without mentioning our COVID-19 response efforts.

The COVID-19 pandemic has impacted the FAA workforce at numerous facilities, including hundreds of our air traffic control facilities, which has, at times, caused some disruptions to our air traffic operations. But the past year has shown how flexible and resilient we are in delivering value to our country in a time of great need. FAA employees have adapted to an unprecedented challenge and kept the aviation system running safely and efficiently. In recent months, we have identified lessons learned and developed best practices to ensure facilities can remain safely open while keeping air traffic moving when events impact normal operations. We have also developed a public interface to provide constant updates on the operating status of air traffic facilities affected by COVID-19.<sup>13</sup>

The pandemic has been particularly challenging for airports. The relief measures enacted last year and in March of this year have helped to provide critical aid for supporting airport operations as well as ongoing projects and new projects that have been initiated in response to the pandemic. The FAA's Office of Airports is administering billions of dollars in grants to

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<sup>13</sup> <https://www.faa.gov/coronavirus/map/>

airports under the CARES Act. And we established the Airport Coronavirus Response Grant Program to distribute nearly \$2 billion in economic relief made available by the Coronavirus Response and Relief Supplemental Appropriation Act to eligible U.S. airports to prepare for and respond to the pandemic as well as to provide rent relief to eligible airport concessions.<sup>14</sup> Most recently, we started the process to release a third set of grants from the American Rescue Plan Act.<sup>15</sup> These additional funds will help airports to continue to provide essential services throughout the pandemic and beyond.

We will continue to work diligently with all levels of government, public health officials, and industry stakeholders to execute a holistic government response to the COVID-19 pandemic to protect the health and safety of the American people. We know that efficient vaccine delivery saves lives. Over the past six months, we have been busy working with industry in support of delivering vaccines and other supplies. As part of the Department's overall efforts to coordinate the vaccine rollout, we established the FAA COVID-19 Vaccine Air Transport Team in October 2020 to support the distribution efforts.<sup>16</sup> The team is working with aircraft manufacturers, air carriers, and other stakeholders to provide guidance and information on the safe transport of dry ice and to provide air navigation services in order to prioritize flights carrying vaccines.

Aviation is integral to rebooting our economy, in part by getting COVID-19 vaccines from manufacturers to people as well as connecting people and cultures from every corner of the globe once we are freely moving about the world again. As we have seen throughout the

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<sup>14</sup> <https://www.faa.gov/airports/crrsaa/>

<sup>15</sup> [https://www.faa.gov/airports/airport\\_rescue\\_grants/](https://www.faa.gov/airports/airport_rescue_grants/)

<sup>16</sup> [https://www.faa.gov/coronavirus/vaccine\\_transport/](https://www.faa.gov/coronavirus/vaccine_transport/)

pandemic, our national airspace system is resilient, and we are confident that our efforts to address the challenges of this pandemic will make us even stronger.

### **Fiscal Year 2022 Budget Request and American Jobs Plan**

While this hearing is focused on aviation safety, I would be remiss if I did not reference the Fiscal Year 2022 budget request and the President's recently released American Jobs Plan. The total level of discretionary funding requested for FY 2022 includes \$25.6 billion for the Department of Transportation. The Plan proposes additional investments in airports, funding for the FAA's air traffic facilities, and a new competitive grant program to support airport terminal development and multimodal access to airports. As you know, the full details of the request will be released soon, including details about how the budget request supports the functions and responsibilities of the FAA. This committee has shown support for the agency in recent years, and I look forward to working with Congress as it considers the American Jobs Plan. This concludes my statement. I will be glad to answer your questions.