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BEFORE THE  
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION  
UNITED STATES SENATE  
EXAMINING THE FEDERAL AVIATION ADMINISTRATION'S  
OVERSIGHT OF AIRCRAFT CERTIFICATION  
JUNE 17, 2020**

Chairman Wicker, Ranking Member Cantwell, and Members of the Committee:

Thank you for inviting me here today to speak with you about the Federal Aviation Administration's (FAA) oversight of aircraft certification and to provide you with an update concerning the Boeing 737 MAX. At the outset, 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 Ethiopian Airlines and Lion Air accidents and extend, once again, our continued deepest sympathies and condolences to them. These tragic accidents should not have happened, and thus underscore and reaffirm the seriousness with which we approach aviation safety every day. We want the families, and the world, to know that we continue to work tirelessly to see that the lessons learned from these accidents will result in a higher margin of safety for the aviation industry globally.

Before I continue to the focus of this hearing, I want to digress for a moment to address some of the challenges the aviation industry has faced during the ongoing public health emergency. Aviation employees have worked diligently these past months — despite the risks to themselves — to safely transport supplies and passengers at a time when our nation has needed them.

Secretary Chao and the Department of Transportation have been clear that passengers should wear face coverings while traveling by air, for their own protection and the protection of those around them. Face coverings are especially important in situations where social

distancing is not feasible. This comes as a health guideline from the agency responsible for public health, the CDC.

Of course, across the transportation system every mode is different. But when it comes to air travel, the DOT and the FAA expect the traveling public to follow airline crew directions and policies, which are in place for passenger protection and the health of air crews, and to take very seriously the precautions recommended by the CDC and the International Civil Aviation Organization (ICAO). As we move through the phases of reopening, the FAA will continue to support airlines and their front-line employees as they implement these CDC guidelines. And we will continue to apply our aviation expertise to help lead efforts with other Federal agencies, with industry, and with our international partners to address public health risk in the air transportation system, both internationally and here in the United States.

I would also like to add that despite the public health challenges associated with COVID-19, our commitment to aviation safety has never wavered and our air transportation system remains safe, resilient, and flexible, thanks to the sustained focus and hard work of aviation professionals in the FAA and industry.

#### ***Status of the 737 MAX Return-to-Service***

Safety is the core of the FAA's mission and is our first priority. We are working diligently so that accidents like the ones that occurred in Indonesia and Ethiopia—resulting in the tragic loss of 346 lives—do not occur again. The FAA continues to follow a thorough process for returning the 737 MAX to service. As we have stated many times in the past, this process is not guided by a calendar or schedule. Safety is the driving consideration. I unequivocally support the dedicated professionals of the FAA in continuing to adhere to a data-driven, methodical analysis, review, and validation of the modified flight control systems and pilot

training required to safely return the 737 MAX to commercial service. I have directed FAA employees to take the time needed to do that work.

With respect to our international partners, the FAA clearly understands its responsibilities as the aviation safety regulator for the State of Design for the 737 MAX. Last fall, we met with more than 50 foreign civil aviation officials, all of whom have provided input to the FAA. We have continued to have regular dialogue with them during the COVID-19 public health emergency. Each respective nation will make its own decision for clearing the 737 MAX for flight, however, we are also conducting and planning additional outreach activities to engage with our international partners, including providing support on return-to-service issues; maintaining transparency through communication and information sharing; and scheduling meetings for technical discussions.

As I have stated before, the FAA's return-to-service decision on the 737 MAX will rest solely on the FAA's analysis of the data to determine whether Boeing's proposed software updates and pilot training address the known issues for grounding the aircraft. The FAA fully controls the approval process for the flight control systems and is not delegating anything to Boeing. The FAA will even retain authority to issue airworthiness certificates and export certificates of airworthiness for all new 737 MAX airplanes manufactured since the grounding. When the 737 MAX is returned to service, it will be because the safety issues have been addressed and pilots have received all of the training they need to safely operate the aircraft.

Actions that must still take place before the aircraft will return to service include a certification flight test and completion of work by the Joint Operations Evaluation Board (JOEB), which includes the FAA and our international partners from Canada, Europe, and Brazil. The JOEB will evaluate pilot training needs using line pilots of various experience levels

from both U.S. carriers as well as international carriers. The FAA's Flight Standardization Board for the Boeing 737 will issue a report addressing the findings of the JOEB, and the report will be made available for public review and comment. Additionally, the FAA will review all final design documentation, which also will be reviewed by the multi-agency Technical Advisory Board (TAB), made up of FAA Chief Scientists and experts from the U.S. Air Force, NASA, and Volpe National Transportation Systems Center.

The FAA will issue a Continued Airworthiness Notification to the International Community providing notice of pending significant safety actions and will publish an Airworthiness Directive advising operators of required corrective actions. I will not sign off on the aircraft until all FAA technical reviews are complete, I fly it myself using my experience as an Air Force and commercial pilot, and I am satisfied that I would put my own family on it without a second thought.

### ***Oversight of Aircraft Certification***

Safety is a journey, not a destination—a journey we undertake each and every day with humility. Today's unprecedented U.S. safety record was built on the willingness of aviation professionals to embrace hard lessons and to proactively seek continuous improvement. The FAA both welcomes and recognizes the importance of scrutiny of our processes and procedures. In addition to this Committee's work and other congressional reviews, several independent reviews have been initiated to look at different aspects of the 737 MAX certification and the FAA's certification and delegation processes generally.

The unprecedented Joint Authorities Technical Review (JATR), commissioned by the FAA, was the first review to be completed and entailed the participation of nine other civil aviation authorities joining the FAA to conduct a comprehensive assessment of the certification

of the automated flight control system on the 737 MAX. The JATR was chaired by former National Transportation Safety Board (NTSB) Chairman Christopher Hart and was comprised of a team of experts from the FAA, the National Aeronautics and Space Administration (NASA), and the aviation authorities of Australia, Brazil, Canada, China, the European Union, Indonesia, Japan, Singapore, and the United Arab Emirates. Never before have 10 authorities come together to conduct this type of review. The JATR provided its unvarnished and independent review and we appreciated their recommendations when they were released this past fall.

The FAA has also received recommendations from the NTSB and the Indonesian National Transportation Safety Committee's (KNKT) accident report on Lion Air Flight 610. Earlier this year, the Ethiopian Civil Aviation Authority released an interim accident report on Ethiopian Airlines Flight 302, with recommendations. Further, the Secretary of Transportation's Special Committee to Review the FAA's Aircraft Certification Process released its recommendations in January of this year. The Special Committee was established to advise and provide recommendations to the Department on policy-level topics related to aircraft certification.

The FAA recently shared with Congress its Action Plan in response to the recommendations of the Special Committee. The plan discusses in depth the FAA's actions, both planned and underway, to address the recommendations. Importantly, the FAA developed its plan not solely in response to the Special Committee recommendations, but also in the context of the other recommendations received from the JATR, NTSB, and KNKT, as well as FAA's own findings. The actions described in the FAA's Action Plan are responsive to all recommendations received and apply to the entirety of the FAA's approach to aircraft certification. The plan reflects the FAA's commitment to improving our certification process

domestically, and to improving aviation safety globally. We believe that transparency, open and honest communication, and our willingness to improve our systems and processes are the keys to restoring public trust in the FAA and in the safety of the 737 MAX when it is returned to service.

### ***Moving Forward***

Beyond the 737 MAX, the FAA is committed to addressing issues regarding aircraft certification processes and aviation safety generally, not only in the United States, but internationally as well. Over the years, the FAA has exercised a leadership role in the promotion and development of global aviation safety. We have helped raise the bar on safety standards and practices worldwide working with the ICAO and other civil aviation authorities. We have an opportunity to do even more. We are committed to expanding our efforts with other authorities around the world and to fostering safety standards and policies at ICAO to help meet the public's expectations of the highest possible levels of safety globally, even in areas the FAA does not regulate directly. Without safety as a foundation, we cannot have a vibrant aviation industry in any country, much less between countries. Our international air transportation network is a tightly woven fabric that is dependent on all of us making safety our core value. To that end, at the 40th Session of the ICAO Assembly the U.S. presented a working paper, *Pilot Training Improvements to Address Automation Dependency*, with several of our international partners. The paper was accepted and in May of this year we were able to get it included in an ICAO proposal on the establishment of a Personnel Training and Licensing Panel which will be considered in July.

In our continuing efforts to raise the bar for aviation safety across the globe, it will be important for the FAA and our international partners to foster improvements in standards and approaches not just for how aircraft are designed and produced, but also how they are maintained

and operated. We at the FAA are prepared to take the lead in this new phase of system safety. As noted in our Action Plan responding to the recommendations of the Special Committee our actions will address specific areas of focus including, safety management systems, system safety, globalization, data, internal coordination between certification and flight standards teams, personnel, delegation, amended type certificates, innovation, and existing recommendations. Our strategy to implement these action items will coalesce around several major themes discussed briefly below.

### *Holistic Approach*

In the context of aircraft certification, a holistic approach means that an aircraft system includes the aircraft itself with all of its subsystems, including the flight crew. The aircraft is not a collection of parts or systems, but should be viewed as a whole. A holistic approach to aircraft certification would not rely upon item-by-item reviews in isolation, but would take into account the interactions and interdependencies between all systems and the crew. Such an approach would link all safety requirements for type certification to other aspects of safe operation including, for example, pilot training and operational performance.

### *Human Factors*

Human factors considerations are an important part of the machine design process, which will need to take into account safety and performance levels of human users. As aircraft systems become more complex and the level of automation increases, the integration of human factors into the design of aircraft will be increasingly important. Human factors considerations must include trained and qualified personnel who will be responsible for operating and maintaining these increasingly safe and complex aircraft.

### *Workforce of the Future*

In order to meet the safety needs of a rapidly evolving aerospace system, the FAA will need to recruit, hire, maintain, and retain a workforce with the necessary technical expertise, capabilities, and adaptability. Our efforts must ensure that we are able to hire and retain the right people with the right skills and mindset, engaged at the right time, with systemic coordination between certification and operational suitability.

### *Information and Coordinated Data Flow*

Ensuring a coordinated and flexible flow of information during any oversight process is critical. In the context of aviation safety, the concept of sharing information cuts across many initiatives that the FAA continues to examine for potential expansion. These include the following important categories, all of which are part of the broader information and data flow theme:

1. Safety Management Systems. Safety Management Systems (SMS) establish a commitment, in this case on the part of the manufacturer, to continually improving safety. SMS identifies and manages risk and provides safety assurance by continually evaluating risk controls and by creating a positive safety culture within a workforce. Integrating a safety management system into the processes for design and production, as well as operations, enables insight into the connections and interrelationship between systems.
2. Big Data. The FAA must continue leaning into our role as a data-driven, risk-based, decision-making oversight organization that prioritizes safety above all else. We do that by breaking down silos between organizations and implementing programs like SMS supported by compliance programs and informed by data. We look at the



aviation ecosystem as a whole, including how all the parts interact: aircraft, weather, pilots, engineers, flight attendants, technicians, mechanics, dispatchers, air traffic controllers, safety inspectors, training programs, certification, passengers—everyone and everything in the operating environment. This includes building upon the successes we have had collaborating with industry and implementing voluntary safety information sharing programs. In the broader context of the overall importance of data to a safety regulator such as the FAA, we are examining the data we have, identifying data we may need, and looking for new methods to analyze and integrate data to increase safety.

3. Just Culture. In addition to the technical work required for truly integrated data, a key enabler of a data-driven safety organization is a healthy and robust reporting culture. A good safety culture produces the data needed to understand what’s actually happening. If we know about safety concerns and we know where threats are coming from and how errors are occurring, we can mitigate the risks and fix the processes that led to those errors. A good safety culture demands that we infuse that safety data into all of our processes from top to bottom—in a continuous loop. To be successful, a safety organization relies on a Just Culture that places great value on front-line employees and empowers those involved in the operation to raise and report safety concerns in a timely, systematic way, without fearing retaliation. A Just Culture starts at the top. It’s something leadership has to nurture, encourage, and support everywhere in the organization. Employees have to see the results, see what the data is showing, and see how the organization is using analytic tools to identify concerns and errors and put actions in place to mitigate them. Employees and

organizations need to see results that come from leveraging safety data and technical expertise into a safer operation.

### ***Initial Action***

As we move ahead to implement these strategies, we have developed a budget request to address specific related needs. For example, the FY 2021 President's Budget requests funding to recruit additional specialized skilled employees, such as more human factors experts and software engineers. The request would also fund a new system that tracks employee training, qualifications, and certifications to ensure our aviation safety workforce has the skills and knowledge required to execute our oversight functions. This action addresses some of the findings of this committee's investigatory work that has assisted in pointing out inconsistencies with our tracking systems.

Consistent with Congressional direction, the budget request will support our new office to oversee Organization Designation Authorization (ODA). While the ODA program has been in place since 2005, the creation of a single office supports standardized outcomes and improvements across the ODA program. Further, the budget request will support improvements to voluntary information sharing programs such as Aviation Safety Information Analysis and Sharing (ASIAS) and the Aviation Safety Reporting Program. These programs are critical tools in the FAA's toolbox, facilitating the collection of safety data that allows the FAA to identify trends and improve upon aviation safety. Each of these requests provide a snapshot of our concerted effort to continually improve aviation safety.

### ***Conclusion***

Aviation's hard lessons and the hard work in response to those lessons—from both government and industry—have paved the way to creating a global aviation system with an

enviable safety record. But as I mentioned earlier, safety is a journey, not a destination. We have achieved unprecedented levels of safety in the United States. Yet what we have done in the past and what we are doing now is not good enough for the future in an increasingly complex and interconnected world. We must build on the lessons learned, and we must never allow ourselves to become complacent.

The United States has been, and will continue to be, the global leader in aviation safety. We are confident that continuing to approach this task with a spirit of humility, openness, hard work, and transparency will bolster aviation safety worldwide.

This concludes my statement. I will be glad to answer your questions.