

United States Senate

WASHINGTON, DC 20510

March 12, 2019

Daniel K. Elwell
Acting Administrator - Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Dear Acting Administrator Elwell,

We write to convey our deep concerns about the safety of the Boeing 737 MAX 8 and 9, and to inquire about the prior determination by the Federal Aviation Administration (FAA) that pilots needed neither additional information nor training on the plane's flight control systems.

In the span of five months, two new Boeing 737 MAX 8 aircraft have tragically crashed, claiming the lives of hundreds of passengers and raising concerns about possible mechanical or training issues that may endanger more aircraft and lives. On October 29, 2018, a Lion Air 737 MAX 8 crashed shortly after takeoff in Indonesia, killing all 189 passengers and crew members on board. Just this Sunday, Ethiopian Airlines lost a 737 MAX 8 during the aircraft's ascent, killing all 157 people on board.¹

When designing the new 737 MAX 8 and 9, Boeing made modifications to the existing 737's flight control system, which helps ensure the appropriate 'trim' — or the angle of the plane's nose — which maintains the aircraft's trajectory and speed. Because the 737 MAX 8 and 9 are equipped with larger engines than previous version of the 737, Boeing added a new program to its flight control system. This program — called M.C.A.S., for maneuvering characteristics augmentation system — is intended to counter any destabilizing effects to the plane's pitch that the larger engines may cause. Both Boeing and the FAA determined that these modifications to the existing flight control system were so inconsequential that notifying pilots about M.C.A.S., or training them for it, including under emergency scenarios, was unnecessary. Notably, European regulators initially disagreed with the FAA's assessment, and Brazilian regulators expressly required that M.C.A.S. be flagged during pilot training.²

Based on preliminary findings from the Lion Air tragedy, erroneous sensor data feeding information to the M.C.A.S may have caused the aircraft to pitch up and down wildly, resisting pilots' efforts to keep the plane level. While simply pulling back on the yoke of the aircraft — the control column — would address certain issues with pitch on older 737s, the ability to utilize the yoke to control pitch was disabled on the 737 MAX 8 and 9 upon M.C.A.S. activation. Instead, the emergency checklist directs the crew to flip a "cutout switch" and use a manual wheel to adjust the aircraft's pitch. According to flight data recorder information, the Lion Air flight crew may have been unaware of that change.³

¹ Jorge Ortiz, 'A punch in the nose for Boeing': Second fatal crash raises questions about plane's safety, USA Today (Mar. 10, 2019), <https://www.usatoday.com/story/news/nation/2019/03/10/ethiopian-airlines-crash-boeing-questions-737-max-8-safety/3126793002/>.

² James Glanz et al., *After a Lion Air 737 Max Crashed in October, Questions About the Plane Arose*, N.Y. Times (Feb. 3, 2019), <https://www.nytimes.com/2019/02/03/world/asia/lion-air-plane-crash-pilots.html>.

³ *Id.*


The FAA should ground all 737 MAX 8 and 9 aircraft until the agency can conclusively determine that the aircraft can be operated safely. Further, as our aviation safety cop on the beat, it is imperative that when aircraft are modified, the FAA ensures that flight crews receive the appropriate information and training. Reports suggest that the desire to minimize the costs of retraining may have driven Boeing and the FAA to determine that informing pilots of the changes to the flight control system was unnecessary.⁴ Safety, not the cost of retraining, must be the FAA's primary concern.


In light of these concerns, we respectfully request that by, March 26, 2019, you answer the following questions:

1. Please explain why the FAA determined that changes to the 737's flight control systems and the addition of M.C.A.S did not warrant simulator or other additional less intensive training for pilots. Did the FAA require that pilots were made aware of this additional system and its functionality?
2. Did the FAA consider the cost or time involved in retraining when determining whether pilots needed to take additional steps before operating a 737 Max 8 or 9, or any similarly designed aircraft? If yes, please explain.
3. How does the FAA determine when flight crews need to receive information about or additional training on new aircraft components or modifications to existing aircraft? Please detail the policy and criteria used when making those determinations.
4. When the FAA was deciding whether pilots needed to receive information about or additional training on the 737 MAX 8 and 9's flight control systems, did the FAA consider what would happen if M.C.A.S. or sensors providing M.C.A.S. information malfunctioned?
5. Is the FAA aware of other aircraft besides the MAX 8 and 9 that are also designed with M.C.A.S.? If, so please identify them. Did the FAA reach different conclusions for the MAX 8 and 9 in terms of notification or additional training requirements for pilots? If yes, please explain.

Thank you for your prompt attention to this important matter. Should you have any questions about this request please contact Daniel Greene of Senator Markey's staff at 202-224-2742.

Sincerely,


Edward J. Markey
United States Senator


Richard Blumenthal
United States Senator

⁴ *Id.*