Investigation shows that a malfunctioning Boeing sensor caused Ethiopian Airlines crash

Kevin Reed 5 April 2019

On Thursday, Ethiopia's Aircraft Accident Investigation Bureau (AIB) released a preliminary report on the March 10 crash of a Boeing 737 Max 8 aircraft which killed all 157 people on board.

The findings in the AIB report show that faulty readings from a malfunctioning angle-of-attack (AOA) sensor on the Boeing plane was behind the crash of Ethiopian Airlines Flight 302. The report also reveals that efforts by the flight crew to follow safety procedures provided by Boeing did not stop the aircraft from making a fatal nosedive less than six minutes after takeoff.

The AIB worked with a team of international investigators to analyze information from the recovered digital flight data recorder and the cockpit voice recorder and reconstruct a timeline of events during the doomed flight.

The timeline shows that less than a minute into the flight, the measurements of the left AOA sensor changed suddenly and were dramatically at odds with the measurements of the right AOA sensor. At two minutes, the pilot described flight control problems and the automated system known as the Maneuvering Characteristics Augmentation System (MCAS)—designed to overcome the tendency of the 737 Max 8 to stall—began rapidly pushing the nose of the plane down.

The pilots took measures to override the actions of the MCAS, but the automated system continued to force a nose-down orientation. The crews then followed the emergency check list provided by Boeing and cut the electrical power to the entire stabilization system and attempted to manually right the plane.

At about four minutes into the flight, the first officer said the manual override "is not working." They then turned the electrical system back on, and the MCAS reengaged. With the plane at over 5,000 feet by this time, it was pushed back into a final nose dive from which it never recovered.

Ethiopian Transport Minister Dagmawit Moges presented the AIB report on the crash and said, "The crew performed all the procedures repeatedly provided by the manufacturer but was not able to control the aircraft."

The AIB report confirms the analysis of aviation experts who had pointed to the AOA sensors and the intervention of the MCAS as the likely cause of the Ethiopian crash. Similar malfunctions were involved in the Lion Air Flight 610 crash of the same exact Boeing aircraft on October 29, 2018, which killed all 189 passengers and crew.

In response to the preliminary AIB report, Boeing President and CEO Dennis Muilenburg issued a statement that continued to avoid acknowledging that faulty airline equipment was the cause of both crashes. Instead, Muilenburg said the accidents were caused when MCAS was "activated in response to erroneous angle of attack information." He refused to acknowledge that erroneous information came from a malfunctioning AOA sensor.

In a further effort to deflect blame for the crashes onto the pilots, Muilenburg claimed that "erroneous activation of the MCAS function can add to what is already a high workload environment." Muilenburg said nothing about the fact that his company's documented safety procedures did not save the aircraft and instead insisted, "We remain confident in the fundamental safety of the 737 MAX."

The latest Boeing response is in keeping with everything the corporation, the Trump administration and the FAA have done since the Ethiopian Airlines Flight 302 went down. They are fully aware that the

decisions they have made are likely directly responsible for the death of 346 people.



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