

March 26, 2019

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

Dear Acting Administrator Elwell,

In the wake of the recent Boeing 737 MAX accidents and the 2009 Turkish Airlines 737 accident in which a similar lack of input signal redundancy and “voting” algorithms cost many lives, I feel compelled to offer my opinions as to what your agency’s immediate and longer-term safety priorities should be.

After many decades of representing airplane accident victims and their families, as well as working closely with and listening to our accident investigation and safety engineering experts, I offer the following initial 10-point to-do list for the FAA:

- 1) Fix the 737 MAX fleet and get those airplanes flying safely. Already dead – 346 people in five months. The fleet is grounded and the daily cost astronomical. NTSB, Boeing, and FAA must investigate and finalize means of prevention fast, followed by FAA mandate of fixes and airline implementation of fixes.
- 2) Identify FAA, Boeing, and any other deficiencies that led to 737 MAX issues and accidents and fix them in the short and long terms. Already dead – 346 people in five months. Neither Boeing nor the FAA and entire US aviation manufacturing industry should tolerate a repeat of these design and certification sins. NTSB, DOJ, DOT IG, Boeing, and FAA must investigate and finalize means of prevention fast, followed by Congressional and FAA mandate of fixes and FAA and manufacturing industry implementation of fixes.
- 3) Restore international airworthiness authority confidence in FAA airworthiness certifications and our DER/DAR program. The 737 MAX design and certification program appears to have been egregiously unbalanced in favor of financial profit over safety with clear violations of system safety design principles for airliners and training principles for airline pilots. The FAA needs to explain to the world how Boeing and FAA caused this, accept full responsibility, and explain what you are doing to prevent recurrence and restore faith in our airworthiness system. One idea would be to establish severe financial and program participation penalties for any FAA DER or other Designee and their employer that is found to have made faulty airworthiness findings. There should be increasing penalty levels based on the potential or actual consequences, such as the recent fatal 737 MAX accidents which should result in the most severe of penalties for Boeing and its DERs and other Designees involved in the actions and inactions that caused or contributed to those accidents.

4) Require cockpit video recording systems with 2 hours minimum recording duration on all airliners carrying more than 6 passengers. Modern technology in cockpits requires video evidence to convincingly determine probable cause and prevent pilots from being easily blamed for everything without adequate identification and understanding of system issues that cause or contribute to accidents. The FAA needs to work with Congress to add video recorders to the list of protected recordings in accident investigations and then require airliners to be so equipped, ignoring the selfish privacy concerns of airline pilots who think their union lobbyists and money can prevent the FAA from requiring this passive safety technology that NTSB and every other interested party has wanted for over 20 years. Pilots, passengers, and the entire aviation community will benefit from this and will come to appreciate it after the first couple accidents that show airplane system issues contributing to pilot errors and accidents. Probable Cause statements and prevention of recurrence will then be much more probable, with accident rates finally starting to decrease again after a long leveling off.

5) Require deployable combi flight recorders for one of the two required recorders on airliners. No longer will we spend months or years waiting for recorders to be found in 20,000 ft depths. We will have data within days in every case. The FAA simply needs to mandate this as the underlying recorder technical standards have been established internationally, deployables have already been installed in numerous airplanes, and all that remains is an FAA final rule and regulation. ICAO and the world will follow as usual, especially since Airbus has already accepted the concept and begun deployable recorder installations on some of its new airplanes.

6) Require Runway Awareness and Alerting Systems on all airliners carrying more than 6 passengers. Runway incursions and related incidents continue to present some of the highest accident probabilities and incidents occur annually that could have been prevented with this technology. The 2006 Comair takeoff crash in Lexington, KY would easily have been prevented with this technology, as would most of the lesser incidents since then. FAA needs to mandate this simple software addition to existing TAWS installations – at very small cost as well.

7) Require periodic software and database updates for all Terrain Awareness Warning Systems (TAWS). TAWS has saved thousands of lives since its worldwide implementation after many Controlled Flight Into Terrain (CFIT) accidents, concluding with the 1997 Korean Air crash in Guam that led to sweeping NTSB recommendations and FAA action. As with most software based safety systems, TAWS require periodic updates to their software and the terrain and obstacle databases that make them work. Unfortunately, the FAA and TAWS manufacturers have not acted thoroughly nor effectively in assuring that all airliners and cargo aircraft keep their TAWS updated, with occasional fatal consequences. FAA needs to work with TAWS manufacturers and operators to fix this software update problem and prevent recurrence.

8) Require Low Airspeed Alerting Systems on all airliners carrying more than 6 passengers. Pilot failure to maintain airspeed and subsequent loss of control has been one of the most common accident causes since the beginning of aviation over 100

years ago. It took the death of Senator Paul Wellstone, his wife, and others on a Beech King Air in Minnesota to get the NTSB to look beyond blaming pilots every time, and instead recommend the use of modern software technology to give pilots more advance notice of their low airspeed trend before it's too late for them to correct it and prevent a crash. The resulting Low Airspeed Alerting system safety recommendations have been accepted by the FAA and industry for new, larger airliners but not smaller airliners and commercial airplanes like the King Air that killed Wellstone, and the FAA has lagged for more than 15 years in issuing final rules and regulations. FAA needs to issue final rules and regulations requiring these systems for all airliners and commercial airplanes with more than 6 passenger seats.

9) Your agency would also do well to make a renewed effort to rapidly satisfy all NTSB Most Wanted safety recommendations for the aviation mode, as documented for 2019-2020 at <https://www.nts.gov/safety/mwl/Documents/2019-20/2019-20-MWL-SafetyRecs.pdf>.

10) Most importantly, the FAA must keep more of an eye on the public safety and not the bottom line. That dual role of the FAA has tipped the scales too far in favor of the bottom line during the 737 MAX program with fatal and shameful consequences.

Thank you for taking the time to consider these recommendations.

Sincerely,

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