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United States Senate

COMMITTEE ON COMMERCE, SCIENCE,
AND TRANSPORTATION

WASHINGTON, DC 20510-6125

WEBSITE: <https://commerce.senate.gov>

January 26, 2023

Mr. Billy Nolen
Acting Administrator
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, DC 20591

Dear Acting Administrator Nolen:

As you know in recent years Boeing has experienced numerous failures in maintaining its production quality system, as required by 14 CFR 21.146. In the Committee's "Aviation Safety Whistleblower Report," issued in December 2021, several Boeing employees identified significant systemic problems with Boeing's quality system, including a lack of commitment by Boeing senior leadership to maintain the system and to ensure conformity and compliance of newly produced airplanes.

For the 737 MAX, in addition to design issues relating to the Maneuvering Characteristics Augmentation System (MCAS), these Boeing employees identified significant breakdowns in the production process resulting from "relentless schedule pressure." For the 787, they identified issues with the wing configuration and fuselage shimming—years before Boeing management acknowledged the problem and the Federal Aviation Administration (FAA) refused to issue airworthiness certificates until the problems were resolved. Because of these problems, the FAA continues to withhold delegation of issuance of airworthiness certificates for both the 737 MAX and the 787, indicating its lack of confidence in Boeing's production quality. All of these issues indicate a need to perform an in-depth audit of Boeing's production systems to identify root causes of these breakdowns.

Under similar circumstances when Boeing launched the 737NG in the late 1990s, the FAA performed a Special Technical Audit (STA) of Boeing's production system (attached), which identified numerous systemic causes of poor quality. As Congress begins the process of FAA reauthorization, I believe a similar audit is needed to provide us with confidence that Boeing is fulfilling its obligations as a production certificate holder and the FAA is ensuring that it is doing so. Therefore, we request that you initiate a STA to address the same questions that were addressed in the earlier STA. Specifically, we would like to see a report addressing the following questions:

- (1) Whether Boeing has a comprehensive process to ensure that all changes to type design are consistently reviewed for compliance with the applicable FAA regulations, including whether such changes were found to be compliant with such regulations.

- (2) Whether Boeing's documented processes are consistently followed.
- (3) Whether data generated by Boeing to show compliance with part 25 of title 14, Code of Federal Regulations, is clear and consistently documents such compliance.
- (4) Whether the manufacturing planning used by personnel to manufacture, assemble, and inspect an aircraft is adequate to ensure that the aircraft is built to type design.
- (5) Whether Boeing personnel consistently follow the requirements of planning, procedures, and type design data.
- (6) Whether the inspections performed by Boeing are sufficient to assure completed parts conform to the type design.
- (7) Whether personnel performing manufacturing operations are knowledgeable of the written requirements for the work they perform.
- (8) Whether, when the FAA performs a product audit on any detailed part, assembly, or installation, the audit identifies noncompliance with procedures, planning documents, or process requirements or nonconformance where the part did not meet the type design.

Specifically regarding the sufficiency of Boeing's inspections, issues have been raised regarding whether Boeing's implementation of its Verification Optimization program, which eliminated many quality inspection requirements, has had the effect of allowing production nonconformities to escape detection and correction and whether Boeing continues to meet the FAA's requirements for an effective inspection program.

Finally, while the original STA provided an excellent assessment of Boeing's internal processes, it did not address Boeing's supplier controls, which appear to be the source of many of the current quality issues. Therefore, a new STA should also address the following issues:

- (1) Whether the development and certification processes for on-board systems (software, networks and equipment) used by Boeing and its suppliers are comprehensive and robust to support the complexity of today's new airplane models.
- (2) Whether Boeing's supplier management and oversight processes are being followed consistently and are effective in ensuring compliant design and products for airplane systems, individual parts and assemblies and whole airplane sections and wings.
- (3) Whether Boeing has been successful in inculcating the importance of the Safety Management System and Quality Management System at the levels of employees, managers and executives, as well as suppliers.

The original STA was conducted, and the report developed, over a period of less than three months (December 1, 1999 - February 11, 2000). A similar level of effort and timeliness should be applied to a new STA in order to be most useful for our FAA reauthorization efforts. If possible, it would also be helpful to include on the audit team experts from outside the FAA, such as quality experts from the National Aeronautics and Space Administration (NASA).

Thank you for your attention to this important matter. Please confirm in writing by Monday, February 6, 2023 whether FAA is able to commence this new Special Technical Audit.

Sincerely,

A handwritten signature in blue ink that reads "Maria Cantwell". The signature is written in a cursive, flowing style.

Maria Cantwell
Chair