

116TH CONGRESS
2D SESSION

S. 3866

To amend title 49, United States Code, to improve the Federal Aviation Administration's aircraft certification process, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 2, 2020

Mr. WICKER introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To amend title 49, United States Code, to improve the Federal Aviation Administration's aircraft certification process, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Aircraft Safety Im-
5 provement Act of 2020”.

6 **SEC. 2. TABLE OF CONTENTS.**

7 The table of contents of this Act is as follows:

Sec. 1. Short title.

Sec. 2. Table of contents.

Sec. 3. Definitions.

Sec. 4. Safety management system for manufacturers.

Sec. 5. Best practices for Organization Designation Authorizations.

Sec. 6. Review of human factors assumptions.
 Sec. 7. Human factors research plan.
 Sec. 8. Certification pilot operational evaluations.
 Sec. 9. Review of FAA certification expertise.

1 **SEC. 3. DEFINITIONS.**

2 In this Act:

3 (1) ADMINISTRATOR.—The term “Adminis-
 4 trator” means the Administrator of the FAA.

5 (2) APPROPRIATE COMMITTEES OF CON-
 6 GRESS.—The term “appropriate committees of Con-
 7 gress” means the Committee on Commerce, Science,
 8 and Transportation of the Senate and the Com-
 9 mittee on Transportation and Infrastructure of the
 10 House of Representatives.

11 (3) FAA.—The term “FAA” means the Fed-
 12 eral Aviation Administration.

13 **SEC. 4. SAFETY MANAGEMENT SYSTEM FOR MANUFACTUR-**
 14 **ERS.**

15 (a) RULEMAKING PROCEEDING.—

16 (1) IN GENERAL.—The Administrator shall con-
 17 duct a rulemaking proceeding to require that manu-
 18 facturers that hold both a type certificate and a pro-
 19 duction certificate issued pursuant to section 44704
 20 of title 49, United States Code, where the United
 21 States is the State of Design and State of Manufac-
 22 ture, have in place a safety management system that
 23 is consistent with the standards established by the

1 International Civil Aviation Organization for such
2 systems.

3 (2) AVIATION RULEMAKING COMMITTEE.—Not
4 later than 90 days after the date of enactment of
5 this Act, the Administrator shall establish an avia-
6 tion rulemaking committee to make recommenda-
7 tions on the rulemaking to be carried out under
8 paragraph (1).

9 (b) FINAL RULE DEADLINE.—Not later than 24
10 months after establishing the aviation rulemaking com-
11 mittee under subsection (a)(2), the Administrator shall
12 issue a final rule pursuant to the rulemaking proceeding
13 required under subsection (a).

14 (c) SURVEILLANCE AND AUDIT REQUIREMENT.—
15 The final rule issued pursuant to subsection (b) shall in-
16 clude a requirement for the Administrator to implement
17 a documented surveillance process by defining and plan-
18 ning inspections, audits, and monitoring activities on a
19 continuous basis, to ensure that design and production ap-
20 proval holders of aviation products meet and continue to
21 meet safety management system requirements under the
22 rule.

1 **SEC. 5. BEST PRACTICES FOR ORGANIZATION DESIGNA-**
2 **TION AUTHORIZATIONS.**

3 (a) IN GENERAL.—Section 213 of the FAA Reau-
4 thorization Act of 2018 (Public Law 115–254, 132 Stat.
5 3249) is amended—

6 (1) by striking subsection (g);

7 (2) by redesignating subsections (c) through (f)
8 as subsections (d) through (g), respectively;

9 (3) by inserting after subsection (b), the fol-
10 lowing:

11 “(c) BEST PRACTICES REVIEW.—In addition to con-
12 ducting the survey required under subsection (b), the
13 Panel shall conduct a review of all ODA holders to identify
14 and develop best practices. At a minimum, the best prac-
15 tices shall address preventing and deterring instances of
16 undue pressure on or by an ODA unit member, within an
17 ODA unit, or by an ODA holder, or instances of perceived
18 regulatory coziness or other failures to maintain independ-
19 ence between the FAA and an ODA holder or ODA unit
20 member. In carrying out such review, the Panel shall—

21 “(1) examine other government regulated indus-
22 tries to gather lessons learned, procedures, or proc-
23 esses that address undue pressure of employees, per-
24 ceived regulatory coziness, or other failures to main-
25 tain independence;

1 “(2) identify ways to improve communications
2 between an ODA unit, ODA unit members, and
3 FAA engineers and inspectors, in order to enable di-
4 rect communication of technical concerns that arise
5 during a certification project without fear of reprisal
6 to the ODA unit or ODA unit member; and

7 “(3) examine the FAA Designee Program, in-
8 cluding the assignment of FAA advisors to des-
9 ignees, to determine which components of the pro-
10 gram may improve the FAA’s oversight of ODA
11 units, ODA unit members, and the ODA program.”;

12 (4) in subsection (d) (as redesignated by para-
13 graph (2))—

14 (A) in paragraph (5), by striking “and”
15 after the semicolon at the end;

16 (B) in paragraph (6), by striking the pe-
17 riod at the end and inserting “; and”; and

18 (C) by adding at the end the following:

19 “(7) the results of the review conducted under
20 subsection (c).”; and

21 (5) by inserting after subsection (g) (as redesign-
22 ated by paragraph (2)), the following:

23 “(h) BEST PRACTICES ADOPTION.—

24 “(1) IN GENERAL.—Subject to paragraph (2),
25 not later than 180 days after the date on which the

1 Administrator receives the report required under
 2 subsection (e), the Administrator shall establish best
 3 practices for all ODA holders and require such prac-
 4 tices to be incorporated into each ODA holder's ap-
 5 proved procedures manual.

6 “(2) NOTICE AND COMMENT PERIOD.—The Ad-
 7 ministrator shall publish the established best prac-
 8 tices for public notice and comment for not fewer
 9 than 60 days prior to requiring the practices be in-
 10 corporated into each ODA holder's approved proce-
 11 dures manual.

12 “(i) SUNSET.—The Panel shall terminate on the ear-
 13 lier of—

14 “(1) the date of submission of the report under
 15 subsection (e); or

16 “(2) the date that is 2 years after the date on
 17 which the Panel is first convened under subsection
 18 (a).”.

19 (b) PROCEDURES MANUAL.—Section 44736(b)(3) of
 20 title 49, United States Code, is amended—

21 (1) in subparagraph (E), by striking “and”
 22 after the semicolon at the end;

23 (2) in subparagraph (F), by striking the period
 24 at the end and inserting “; and”; and

25 (3) by adding at the end the following:

1 “(G) ensure the ODA holders procedures
 2 manual contains procedures and policies based
 3 on best practices established by the Adminis-
 4 trator of the FAA to mitigate undue pressure
 5 and regulatory coziness or other failures to
 6 maintain independence.”.

7 **SEC. 6. REVIEW OF HUMAN FACTORS ASSUMPTIONS.**

8 (a) HUMAN FACTORS IN CERTIFICATION.—Not later
 9 than 60 days after the date of enactment of this Act, the
 10 Administrator shall initiate a review and may, after such
 11 review and as necessary, revise existing regulations and
 12 policies, including but not limited to sections 25.1302,
 13 25.1309, and 25.1322 of title 14, Code of Federal Regula-
 14 tions, to integrate and emphasize human factors and
 15 human system integration, particularly those related to
 16 pilot and aircraft interfaces.

17 (b) REVIEW.—In carrying out subsection (a), the Ad-
 18 ministrator shall—

19 (1) review existing assumptions on pilot rec-
 20 ognition and response as part of the certification
 21 process;

22 (2) validate such assumptions with applicable
 23 human factors research, and as necessary modify the
 24 existing assumptions;

1 (3) ensure that when carrying out the certifi-
2 cation of a new aircraft type, including a supple-
3 mental or amended type, the cumulative impact that
4 new technologies may have on pilot response are
5 properly assessed; and

6 (4) ensure that any action carried out under
7 this subsection accounts for the necessary adjust-
8 ments to pilot training needs.

9 (c) REPORT.—Not later than 180 days after com-
10 pleting the review required under subsection (a), the Ad-
11 ministrator shall submit a report to the appropriate com-
12 mittees of Congress detailing the results of the review and
13 what revisions or other changes were made as a result of
14 such review.

15 **SEC. 7. HUMAN FACTORS RESEARCH PLAN.**

16 (a) HUMAN FACTORS RESEARCH PLAN.—Not later
17 than 180 days after the date of enactment of this Act,
18 the Administrator, in consultation with aircraft manufac-
19 turers, operators, and pilots, and in coordination with the
20 Administrator of the National Aeronautics and Space Ad-
21 ministration, shall develop a research plan to address the
22 integration of human factors in the design and certifi-
23 cation of transport category aircraft.

24 (b) REQUIREMENTS.—In developing the research
25 plan under subsection (a), the Administrator shall—

1 (1) establish goals for research and continuing
2 education in areas of study relevant to advancing
3 technology, improving design, engineering, and cer-
4 tification practices, and facilitating better under-
5 standing of human factors concepts in the context of
6 the growing development and reliance on automation
7 in aircraft operations;

8 (2) take into consideration and leverage any ex-
9 isting or planned research that is conducted by or
10 conducted in partnership with the FAA; and

11 (3) focus on—

12 (A) preventing a recurrence of the types of
13 recent accidents that have involved large trans-
14 port category airplanes designed and manufac-
15 tured in the United States; and

16 (B) increasingly complex aircraft systems
17 and designs.

18 (c) AUTHORIZATION OF APPROPRIATIONS.—There
19 are authorized to be appropriated to the Administrator
20 such sums as may be necessary to carry out this section.

21 **SEC. 8. CERTIFICATION PILOT OPERATIONAL EVALUA-**
22 **TIONS.**

23 (a) IN GENERAL.—Not later than 1 year after the
24 date of enactment of this Act, the Administrator shall re-
25 vise existing policies for manufacturers of large transport

1 category airplanes that are expected to be operated for
2 passenger air transportation under part 121 of title 14,
3 Code of Federal Regulations, to ensure that pilot oper-
4 ational evaluations for airplanes that are in the process
5 of being certified use pilots from foreign and domestic air
6 carriers that are expected to operate such airplanes.

7 (b) REQUIREMENT.—The air carrier pilots used for
8 such evaluations shall include a representative sample of
9 such carriers' pilots with respect to levels of experience.

10 **SEC. 9. REVIEW OF FAA CERTIFICATION EXPERTISE.**

11 (a) IN GENERAL.—Not later than 60 days after the
12 date of enactment of this Act, and without duplicating any
13 recently completed or ongoing reviews, the Administrator
14 shall initiate a review of—

15 (1) the inspectors, engineers, managers, and ex-
16 ecutives in the FAA who are responsible for the cer-
17 tification of the design, manufacture, and operation
18 of transport category aircraft for purposes of deter-
19 mining whether the FAA has the expertise and capa-
20 bility to adequately understand the safety implica-
21 tions of, and oversee the adoption of, new or innova-
22 tive technologies, materials, and procedures that de-
23 signers and manufacturers of such aircraft may
24 adopt or introduce; and

1 (2) the Chief Scientific and Technical Advisors
2 program to determine whether the program should
3 be enhanced or expanded to bolster and support the
4 FAA's aircraft certification and safety programs,
5 particularly with respect to understanding the safety
6 implications of new or innovative technologies, mate-
7 rials, and procedures, that designers and manufac-
8 turers of such aircraft may adopt or introduce.

9 (b) OUTSIDE EXPERTS PERMITTED.—The Adminis-
10 trator may use experts outside of the FAA to conduct or
11 assist in the review required by subsection (a).

12 (c) DEADLINE FOR COMPLETION.—Not later than
13 270 days after the date of enactment of this Act, the Ad-
14 ministrators shall complete the review required by sub-
15 section (a).

16 (d) BRIEFING.—Not later than 30 days after the
17 completion of the review required by subsection (a), the
18 Administrator shall brief the appropriate committees of
19 Congress on the results of the review and any other related
20 review. The briefing shall include the following:

21 (1) An analysis of the FAA's ability to hire
22 safety inspectors, engineers, managers, executives,
23 scientists, and technical advisors, who have the req-
24 uisite expertise to oversee new developments in aero-
25 space design and manufacturing.

1 (2) A plan for the FAA to improve the overall
2 expertise of the FAA's personnel who are responsible
3 for the oversight of the design and manufacture of
4 transport category aircraft.

5 (3) Recommendations for such legislation, if
6 any, as the Administrator determines necessary to
7 carry out the plan required under paragraph (2).

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