BILL

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 21

[Docket No.: FAA-2024-0159; Notice No. 24-10]

RIN 2120–AL87

Disclosure of Safety Critical Information

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This proposed rule would implement certain mandates in the Aircraft Certification, Safety, and Accountability Act of 2020 by requiring applicants for, and holders of, new and amended transport category airplane type certificates to submit, and subsequently continue to disclose, certain safety critical information to the FAA. The proposed rule would also require all applicants for type certificates, including new, amended, and supplemental type certificates, to submit a proposed certification plan to the FAA.

DATES: Send comments on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by docket number FAA-2024-0159 using any of the following methods:

- Federal eRulemaking Portal:
- Go to www.regulations.gov and follow the online instructions for sending your comments electronically.

- Mail: Send comments to Docket Operations, M-30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, S.E., Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.
- Hand Delivery or Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, S.E., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at (202) 493-2251.

Docket: Background documents or comments received may be read at www.regulations.gov/ at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, S.E., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Susan McCormick, Systems Standards, Product Policy Management, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, 26805 East 68th Ave., Denver, CO, 80249-6339; telephone (206) 231-3242; email susan.mccormick@faa.gov.

SUPPLEMENTARY INFORMATION:

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I. Executive Summary

This proposed rule would implement certain mandates of section 105 of the Aircraft Certification, Safety, and Accountability Act[1] (ACSAA). It proposes to require applicants for, and holders of, type certificates (TCs), including new and amended but not including supplemental type certificates (STCs), for a transport category airplane covered under part 25 of title 14, Code of Federal Regulations (14 CFR), to submit, and subsequently continue to disclose, certain safety critical information to the FAA. Applicants would be required to submit such information as part of a certification plan.

A certification plan would therefore be required, by regulation, for all applicants for TCs, including STCs, and would be required to include proposed milestones. After

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1 Division V, title 1 of Consolidated Appropriations Act, 2021. Public Law 116-260 (Dec. 27, 2020).

the FAA agrees to the certification plan, applicants would be required to keep it updated throughout the certification process.

This proposal also includes requirements applicable to certain holders of TCs. Holders of transport category airplane TCs covered under part 25 would be required, within 90 days of the effective date of a final rule, to submit certain safety critical information, if known and not previously submitted. Such holders would thereafter be required to continue to disclose such information upon discovery. While TC holders already submit much of this information via requirements found in §§ 21.3 and 183.63, this rule would require specific delineation of the safety critical information by the holder.

Because the FAA's proposal would largely align the new submittal and disclosure requirements for TC applicants and holders with existing certification and oversight practices and require holders only to submit known and previously-undisclosed information, the incremental costs of the proposal would be minimal. The FAA has found potential benefits from the proposal due to the projected enhancement of the identification, and the agency's receipt of, safety critical information.

II. Background

A. *Congressional Mandate*

On December 21, 2020, Congress passed the Consolidated Appropriations Act of 2021, which included the Aircraft Certification, Safety, and Accountability Act (Division V, Title 1). Section 105 of the Act was codified in title 49 U.S.C. 44704(e) (2021). Section 105 instructs the FAA to require the submittal, and subsequent ongoing disclosure, of certain information related to TCs for transport category airplanes covered under part 25 of title 14.

Section 105(e)(1), now 49 U.S.C. 44704(e)(1), prompts the FAA to require an applicant for, or holder of, a TC for a transport category airplane to submit safety critical

information to the FAA. That section defines five categories of required safety critical information, as summarized below. It allows the FAA to set the form, manner, and time of the submittal.

Section 105(e)(1)'s requirements are accompanied by certain caveats. First, as noted above, it applies to only those TCs for transport category airplanes that are "covered under part 25 of title 14." Second, the section states that the required submittals are to be made "(N)otwithstanding a delegation described in section 44702(d)[2]." Third, section 105 defines the transport airplane type certificatess that are subject to its requirements as those for "new or amended" certificates, but excludes STCs.

Section 105 also directs certain "Ongoing Communications." Specifically, Section 105(e)(2)(A) instructs the FAA to require that an applicant for, or holder of, a transport airplane type certificate disclose to the FAA any newly discovered information, or any design or analysis change, that would materially alter the applicant or holder's prior submission of safety critical information to the FAA under section 105(e)(1). As with the initial disclosure requirement, this section allows the FAA to set the form, manner, and time of the communication. Section 105(e)(2)(b) directs the FAA to establish milestones throughout the certification process at which the systems of a proposed transport category airplane design will be assessed. These required assessments must determine whether a change made to a system during the certification process should prompt the FAA to consider the system as novel or unusual.

Section 105 sets forth five categories of safety critical information that applicants or holders must submit and disclose. These categories generally relate to information about the proposed design's potential to affect the flightcrew's ability to control the

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2 Section 44702(d) of title 49 allows the Administrator to delegate certain matters related to type certificates and other certificates.

airplane, and about the analysis of potential hazards that could be posed by the design. The following paragraphs summarize the five categories of safety critical information.

(1) Details, functions, and failure modes of any system that, without being commanded by the flightcrew, could command the operation of a function or feature that is necessary for control of the airplane, or could affect its flight path or airspeed.

(2) Details, functions, failure modes, and mode annunciations about the transport category airplane's autopilot and autothrottle systems.

(3) Failures or operating conditions that the TC applicant or holder anticipates or has concluded would result in a hazardous or catastrophic outcome.

(4) Any adverse handling quality that, without adding flight control augmenting software to the airplane design, would result in a failure to meet the requirements of FAA regulations.

(5) A system safety assessment with respect to any system described in one of the first two categories (i.e., flight controls, and autothrottle/autopilot), or with respect to a system or component whose failure or erroneous operation could result in a hazardous or catastrophic outcome.

B. *Regulatory Background (FAA Certification and Oversight Processes)*

The FAA reviews applicants' proposed designs of products such as airplanes and engines, and, if it finds that the design meets regulatory standards, issues a design approval known as a "type certificate." For transport category airplanes, which are used by air carriers to transport the public in scheduled service, the FAA reviews proposed designs primarily using the standards in 14 CFR part 25. Part 25 replaced part 4b of the Civil Air Regulations in 1965.[3] The FAA provides applicants with suggested, but

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3 29 FR 18289.

optional, means of compliance with many design standards via the publication of guidance documents such as advisory circulars (AC).

After obtaining a TC for a transport category airplane from the FAA, most TC holders obtain (or seek to amend) a production certificate, which the FAA issues after the manufacturer proves that it is capable of repeatedly building the product according to its approved design. After an individual aircraft is built, the FAA issues an airworthiness certificate after finding that the aircraft conforms to its design and is in a condition for safe operation.

1. Relevant Part 25 Design Standards.

Several part 25 design standards for transport category airplanes are relevant to the safety critical information that Congress has defined, and directed the FAA to require from, TC applicants and holders.

a. System Safety Assessment

To ensure the reliability of proposed designs for transport category airplanes, the FAA requires applicants to analyze the potential effects that failures and malfunctions could have on the airplane and its flightcrew. Among the FAA's reliability regulations for transport category airplanes is § 25.1309, which generally requires the likelihood of a failure to be inversely proportional to its potential effect. Specifically, it requires that any failure condition which could cause the loss of the airplane (a "catastrophic" failure condition) to be so unlikely as to never occur during the expected lifetime of all airplanes of that model (i.e., "extremely improbable" with an associated per hour failure rate of 10^{-9}, or less likely than one event per 10^{9} (billion) flight hours).[4] Section 25.1309 also requires that failure conditions which are not catastrophic, but which nevertheless could reduce the capability of the airplane or the ability of its flightcrew to cope with adverse

4 AC 25.1309-1A, System Design and Analysis (June 21, 1988), page 15, paragraph 10.b.(3), available in the docket and at drs.faa.gov.

operating conditions (a "major" failure condition), to be no more likely than improbable (an associated per-hour failure rate between every 10^{-9} and 10^{-5} flight hours)[5]. The requirement to analyze these catastrophic and major failure conditions, and thus submit that information to the FAA, has been in place since 1970.[6]

An FAA-approved means of compliance with 14 CFR 25.1309 is AC 25.1309-1A, *System Design and Analysis* (June 21, 1988).[7] This AC divides the foregoing failure conditions into three categories, aligning their severity with their likelihood: (1) Catastrophic (which may be no more likely than 10^{-9}, or extremely improbable); (2) Major (between 10^{-9} and 10^{-5}, or improbable); and (3) Minor, which are unregulated for transport category airplanes and may be probable (more likely than 10^{-5}). An additional Aviation Rulemaking Advisory Committee (ARAC)[8]-recommended version[9] of this guidance, known as the "Arsenal" version, divides the "major" category into two categories of failures: those that are "hazardous" (from 10^{-9} to 10^{-7}) and those that are "major" (from 10^{-7} to 10^{-5}).[10] Some applicants use the guidance in this version when developing their system safety assessments (SSA), and the FAA commonly accepts such assessments as a means of showing that the proposed design complies with § 25.1309.

In some cases, the applicant submits the SSA to a designee of the FAA. Designees of the FAA can be individual or organizational. Organizational designees are known as ODAs because the FAA has granted them "organization designation authorization."[11]

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5 AC 25.1309-1A, page 15, paragraph 10.b.(2), available in the docket and at drs.faa.gov.
6 Amendment 25-23, 35 FR 5665.
7 Available in the docket.
8 The ARAC was created under the Federal Advisory Committee Act (FACA), in accordance with title 5 of the United States Code (5 U.S.C. App. 2) to provide advice and recommendations to the FAA concerning rulemaking activities, such as aircraft operations, airman and air agency certification, airworthiness standards and certification, airports, maintenance, noise, and training.
9 The Arsenal version is a draft revision of AC 25.1309-1A. It was developed by the ARAC Systems Design and Analysis Harmonization Working Group (SDAHWG). It is in the docket for this rulemaking as part of the SDAHWG recommendation, Task 2-System and Analysis Harmonization and Technology Update, pp. 61-99.
10 The FAA has proposed to update 14 CFR 25.1309, including changes seeking to ensure that applicants protect the airplane from the effects of the combination of two failures, the first of which is undetected until a second failure occurs. Docket No. FAA-2022-1544, available at regulations.gov.
11 See subpart D of 14 CFR part 183.

Thus, an applicant may be submitting its SSA and other compliance information to an entity other than the FAA itself, if the FAA has authorized that entity to make a finding of compliance on the FAA's behalf.

b. Function and Installation of Equipment

The FAA's reliability standards for transport category airplanes certified under part 25 also include § 25.1301(a)(4), which requires that each item of installed equipment on the airplane function properly when installed. Implementing policy for § 25.1301 is included in several ACs, such as AC 20-174, *Development of Civil Aircraft and Systems*, and AC 25.1329-1, *Approval of Flight Guidance Systems*.

c. Other Relevant Part 25 Design Standards

Additional part 25 standards of potential relevance to safety critical information as defined by Congress, are § 25.143, general flight maneuvers; § 25.672, which governs stability augmentation and automatic and power-operated systems; § 25.1322, for flightcrew alerting; and § 25.1329, which governs flight guidance systems.

The foregoing part 25 regulations, which current applicants for transport category airplane TCs must show that their proposed design complies with,[12] are pertinent to the ACSAA section 105 requirements for applicants and holders of TCs for transport category airplanes to submit, and continue to disclose, certain safety critical information.

2. Applicant Certification Plans

An applicant has 5 years, from the date of application, to obtain FAA approval of the applicant's proposed transport category airplane TC, or change to such certificate.[13] To ensure that necessary information about an applicant's project is submitted in time for the FAA to adequately review, to establish an agreed-upon schedule including milestones, and to identify potential issues, applicants submit a proposed certification

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12 Per 14 CFR 21.20 and 21.21.
13 14 CFR 21.17(c) and 21.101(e).

plan for their project,[14] at the time of application, to the FAA.[15] A certification plan includes several categories of information.[16] Such information includes general information about the proposed design, but also specific information such as a description of how compliance will be shown, a list of the documentation that the applicant plans to use to show compliance, and the applicant's expected certification date. Applicants also generally keep this information updated throughout the development of their project, so that they can show compliance with FAA design standards, and so that the FAA has correct information to make the findings of compliance that are necessary to issue the requested TC.

3. Disclosure of Novel or Unusual Design Features

Since each proposal for an original or amended TC is different, and the designs of modern transport category airplanes are complex, proposed designs will inevitably present multiple issues, whether technical, regulatory, or administrative, that require a heightened degree of analysis by the FAA and engagement with the applicant. The FAA analyzes such issues via the development of issue papers.[17]

If a proposed design feature is novel or unusual (i.e., it was not envisaged by FAA design standards) and therefore, the FAA's design standards are inadequate or inappropriate for that feature, the FAA addresses that feature with a rule of particular applicability known as a "special condition."[18] Though the goal is to identify and address novel or unusual design features early in the certification process, regular discussions (e.g., familiarization briefings, compliance planning meetings, etc.) between the applicant and the FAA are necessary to plan and execute certification activities.

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14 Certification plans are submitted by nearly all project applicants, because the plans are a useful tool for both the FAA and industry. FAA Order 8110.4C provides information on their use. Also, the FAA and industry jointly developed both the The FAA and Industry Guide to Product Certification (i.e., Certification Process Guide (CPG)) and the Enhanced Project Specific Certification Plan (ePSCP) Guide (i.e., ePSCP Guide) as a means to communicate project information via certification plans.
15 Section 2-3 of FAA Order 8110.4C.
16 Id. at para. 2-3(d).
17 See FAA Order 8110.4C, at para 2-4(g); FAA Order 8110.112; and AC 20-166B.
18 14 CFR 21.16.

4. Existing 14 CFR 21.3 Reporting of Failures, Malfunctions, and Defects

In 1969, the FAA noted that while air carriers were required to notify the FAA of certain safety issues occurring on their airplanes and engines, it is the manufacturers of those products who have the

> "expertise… to evaluate the seriousness of the failure, defect, or malfunction, and to determine the extent to which (it) may present a hazard to flight."[19]

The FAA thus proposed, and subsequently issued, a rule —14 CFR 21.3— requiring manufacturers to promptly[20] inform the FAA of the occurrence of a host of listed failures, defects, and malfunctions. The specific items to be disclosed have not substantively changed in the half-century since the rule was issued.

Thus, after the FAA approves a proposed design via the issuance of a TC, and the manufacturer builds its product according to that approved design, and the individual aircraft receives a certificate of airworthiness and enters service, the manufacturer's obligation to ensure the airworthiness of its product continues. The manufacturer must report certain information to the FAA in accordance with § 21.3. If the FAA determines a design change is required to correct an unsafe condition in a product, the manufacturer is required by § 21.99 to submit a proposed change to its design, and the FAA may mandate this change via part 39 of 14 CFR by the issuance of an airworthiness directive (AD).

5. Other Ongoing Disclosure Requirements Applicable to TC Holders

Nearly every domestic holder of an original or amended TC for a part 25 transport category airplane in the U.S. is also the holder of an ODA.[21] ODA holders are required by current regulations to submit and disclose several categories of safety information to

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19 34 FR 5441.
20 Within 24 hours, or by the end of the next business day. 14 CFR 21.3(e)(1).
21 The exception is Lockheed Martin Corporation. The Boeing Company, Gulfstream Aerospace Corp., Textron Aviation Inc., Piper Aircraft, Inc., and LearJet, Inc. are all currently ODA holders.

the FAA. Two categories are of particular pertinence to the requirements that this NPRM proposes to establish. Section 183.63(b)(1) requires ODA holders, without prompting by the FAA, to notify the agency of any "condition in a product, part or appliance that could result in a finding of unsafe condition by the Administrator." Section 183.63(b)(2) requires ODA holders to notify the agency of products not meeting airworthiness requirements.

FAA policy provides guidance on the details of the provision of such information.[22] The ODA holder must provide continued support for approvals or certificates issued under ODA procedures in accordance with § 183.63. Procedures for monitoring service information, investigation, and FAA notification must be included in the ODA holder's FAA-approved procedures manual, in accordance with § 183.53(c)(13).

C. *Factual Background (Boeing 737 MAX[23] Accidents and Ensuing Investigations)*

The following information, due to its inclusion or reference in investigations by Congressional committees, was pertinent to the development of the Congressional requirements that this NPRM proposes to implement.[24]

The FAA approved the amended TC for the Boeing Model 737-8 in 2017. On October 29, 2018, a Boeing Model 737-8 airplane operated by Lion Air (Lion Air Flight 610) was involved in an accident after takeoff in Indonesia, resulting in 189 fatalities. The accident was investigated by the Indonesian authorities (Komite Nasional Keselamatan Transportasi (KNKT))[25] with assistance from the National Transportation Safety Board (NTSB), the FAA, the manufacturer, and the operator.

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22 FAA Order 8100.15B at section 3-18.
23 When the term "737 MAX" is used in this NPRM, it is referring to the Boeing Model 737-8 and -9 airplanes.
24 See, e.g., House Report H.R. 8408, H. Rept. 116-579 - AIRCRAFT CERTIFICATION REFORM AND ACCOUNTABILITY ACT | Congress.gov | Library of Congress. Available in the docket.
25 Preliminary KNKT.18.10.35.04 Aircraft Accident Investigation Report, dated November 2018, and Final KNKT.18.10.35.04 Aircraft Accident Investigation Report, dated October 2019, can be found in the docket.

On March 10, 2019, a Boeing Model 737-8 airplane operated by Ethiopian Airlines (Ethiopian Airlines Flight 302) was involved in an accident after takeoff in Ethiopia, resulting in 157 fatalities. The accident was investigated by the Ethiopian Accident Investigation Bureau[26] with assistance from the NTSB, the FAA, the French Bureau of Enquiry and Analysis for Civil Aviation Safety, the European Union Aviation Safety Agency, the manufacturer, the operator, and the Ethiopian Civil Aviation Authority.

The investigations of these accidents generally found that erroneous data from one of the airplane's two angle-of-attack sensors could cause the maneuvering characteristics augmentation system (MCAS), a function of the airplane's flight control software, to command repeated airplane nose-down trim of the horizontal stabilizer, and could result in flightdeck effects that collectively could affect the ability of the flightcrew to accomplish continued safe flight and landing.[27]

Flightdeck effects common to both accidents were differences in the altitude and airspeed displayed for each pilot and persistent stall warning. In the Ethiopian accident, the significant difference in airspeeds resulted in the autothrottle becoming inoperative, thus leaving the thrust levers at the current takeoff thrust setting. The throttles remained at takeoff power throughout the flight, resulting in high airspeed, which made it more difficult for the flightcrew to control the airplane.

The Boeing Models 737-8 and 737-9 were certified via amendment of the existing Boeing Model 737 TC and were the first of a set of derivative models collectively marketed by Boeing as the 737 MAX. To certify the 737 MAX airplanes with larger and

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26 Report No. AI 01/19, Interim Investigation Report on Accident to the B737–8 (MAX) Registered ET–AVJ operated by Ethiopian Airlines on 10 March 2019, dated March 9, 2020, of the Federal Democratic Republic of Ethiopia Ministry of Transport Aircraft Accident Investigation Bureau, can be found in the docket.

27 See, e.g., p. 7 of NTSB ASR-19-01, Assumptions Used in the Safety Assessment Process and the Effects of Multiple Alerts and Indications on Pilot Performance, dated September 19, 2019, ("ASR-19-01"), available in the docket.

relocated engines, Boeing added MCAS to the airplane's flight control software so that the airplane handling qualities would comply with FAA design standards.[28]

Following the accidents, the FAA mandated corrective actions to address the unsafe condition related to MCAS on the 737 MAX. The actions included requiring changes to the airplane's flight control software related to MCAS and related flightcrew procedures. These changes were developed by Boeing and its ODA unit pursuant to §§ 21.3, 21.99 and 183.63, and, after a public comment process, were required by the FAA via the issuance of an AD.[29]

1. Investigations of Certification of 737 MAX and FAA Certification Processes

The two accidents also led to investigations of how the Boeing 737 MAX airplane had been certified by the FAA; of the FAA's delegation of certain certification functions to the Boeing ODA; and of how the FAA certifies transport category airplanes in general. These investigations included reviews by the NTSB[30] and the U.S. Department of Transportation's Office of Inspector General (in June 2020[31] and February 2021[32]); a Joint Aviation Technical Review conducted by a panel of foreign civil aviation authorities;[33] and reviews by the Aviation Subcommittee of the U.S. House Committee on Transportation and Infrastructure[34] and the U.S. Senate Committee on Commerce, Science, and Transportation.[35] The FAA also performed and published its own technical summary when addressing the unsafe condition.[36]

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28 See, e.g., pp. 23-24 of *Summary of the FAA's Review of the Boeing 737 MAX* (November 20, 2020), available in the docket.
29 85 FR 74560.
30 *System Safety and Certification Specialist's Report*, DCA19RA017, dated August 21, 2019, and the aforementioned ASR-19-01, available in the docket.
31 Timeline of Activities Leading to the Certification of the Boeing 737 MAX 8 Aircraft and Actions Taken After the October 2018 Lion Air Accident, June 2020, ("OIG I"), available in the docket.
32 Weaknesses in FAA's Certification and Delegation Processes Hindered Its Oversight of the 737 MAX 8, U.S. Department of Transportation Office of Inspector General, February 2021, ("OIG II") available in the docket.
33 Boeing 737 MAX Flight Control System Joint Authorities Technical Review, October 2019, ("JATR"), available in the docket.
34 The Design, Development, & Certification of the Boeing 737 MAX, Majority Staff of the U.S. House Committee on Transportation and Infrastructure, ("House Committee Report"), available in the docket.
35 *Aviation Safety Oversight*, U.S. Senate Committee on Commerce, Science, & Transportation, December 2020, ("Senate Committee Report"), available in the docket.
36 As referenced at footnote 28.

2. Disclosure of Information During Certification of 737 MAX

The investigations of the certification of the 737 MAX generally found that Boeing, as the applicant for an amended TC, inadequately disclosed certain information about its proposed design, and its potential safety risks, to the FAA during the certification process.[37] This information included the manufacturer's increase of the authority (from 0.55 to 2.5 degrees of stabilizer movement) and circumstances (from high-altitude only, to relatively low altitude and airspeed) of the flight-control software's automatic (without pilot input) activation of MCAS to move the horizontal stabilizer of the airplane.[38]

The investigations also generally found that Boeing's hazard and safety assessments of these systems on the 737 MAX did not adequately account for the severity of hazard that MCAS posed.[39] According to the investigations, the hazard classifications for MCAS failures, given that system's potential reliance on a single angle-of-attack indicator, should have been catastrophic with an SSA that included commensurate rigor.[40]

The investigations found that the company's SSAs that addressed MCAS considered the hazard from a single activation, but did not address the hazard that could be presented by repeated activations of MCAS.[41]

D. *Legislation Resulting from Reviews of the 737 MAX*

After the foregoing reviews of the FAA's certification of the 737 MAX, in December of 2020 Congress passed the Aircraft Certification, Safety, and Accountability Act (ACSAA).[42] ACSAA imposed many new requirements on the FAA, including those of section 105.

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37 See, e.g., JATR at pp. VII, 13, and 24-25; House Report at p. 57.
38 See, e.g., House Report at p. 103; OIG I at p. 20; OIG II at p. 16.
39 See, e.g., JATR at p. 30-31; OIG I at p. 25.
40 See, e.g., House Report at pp. 13 and 29; JATR at pp. 31 and 33-34.
41 See, e.g., House Report at pp. 21, 109, and 116; JATR at pp. 33-34.
42 Pub. L. 116-260 (ACSAA).

Section 105's provisions generally seek to ensure that information about the potential hazards of a transport category airplane's systems is adequately disclosed by applicants for design approval, so that such information can be adequately evaluated by the applicant and the FAA.

Section 105 does not apply these requirements only to "applicants," as it does certain other provisions. Rather, it also applies the initial submittal, and ongoing disclosure requirement, to the "holder of" a type certificate for a transport category airplane covered under part 25.

III. Authority for This Rulemaking

The FAA's authority to issue rules on aviation safety is found in title 49 of the United States Code. Subtitle I, section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the FAA's authority.

This proposed rulemaking is issued under the authority described in subtitle VII, part A, subpart III, section 44701, General Requirements. Under that section, the FAA is charged with prescribing regulations and minimum standards for the design and performance of aircraft that the Administrator finds necessary for safety in air commerce. This proposed regulation is within the scope of that authority.

Authority for this particular rulemaking is derived from section 105(a) of ACSAA. Section 105, "Disclosure of Safety Critical Information," of ACSAA directs the Administrator of the FAA to require an applicant for, or holder of, a TC for a transport category airplane covered under 14 CFR part 25 to submit and disclose certain safety critical information to the FAA.

IV. Discussion of the Proposal

In this rulemaking, the FAA proposes to impose, as required by section 105(a), the initial submittal and continuing disclosure requirements of that section on applicants

and holders of TCs, including amended TCs, for transport category airplanes covered by 14 CFR part 25.

A. *Submittal of Proposed Certification Plans By Applicants*

In this NPRM, the FAA proposes a new § 21.15(d) that would require applicants for new or amended TCs to submit proposed certification plans to the FAA, and that a new § 21.113(c) would require the same for applicants for new or amended STCs. Consistent with current practice, such plans would be required to be submitted with the application. The proposed certification plans would be required to include planning information; proposed milestones; and, for transport category airplane applications, subsequent updates to include the safety critical information that ACSAA requires the FAA to obtain from such applicants.

Under current practices, applicants typically submit a variety of information with their proposed certification plans, as described in FAA Order 8110.4C, *Type Certification* (for applicants) and 8100.15B, *Organization Designation Authorization Procedures* (for ODA holders) and associated materials such as *The FAA and Industry Guide to Product Certification* (i.e., Certification Process Guide[43] (CPG)) and *Enhanced Project Specific Certification Plan (ePSCP) Guide* (i.e., ePSCP Guide).[44] However, to provide transport category airplane applicants with a familiar vehicle for the initial submittal of safety critical information, the FAA proposes to establish a performance-based regulatory requirement for certification plans.

Thus, proposed certification plans would be required, via a regulatory performance standard, to contain sufficient information for the applicant's showings of compliance, and the FAA's findings, to be timely and accurately made. The provided information would be substantially the same as described in the aforementioned FAA

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43 Available in the docket and at www.faa.gov/sites/faa.gov/files/aircraft/air_cert/design_approvals/transport/CPI_guide.pdf.
44 Available in the docket and at www.faa.gov/sites/faa.gov/files/aircraft/air_cert/design_approvals/dah/ePSCP_guide.pdf.

guidance documents. The information provided in the certification plan would need to be sufficiently developed, and detailed, to enable the FAA to determine its level of involvement for each compliance showing and finding, ensure prompt submittal of all necessary compliance data, and allow all showings and findings to be timely and accurately made for each project.

The FAA proposes that applicants would be required to submit these proposed certification plans in a manner consistent with current practices. Thus, applicants would be required to submit certain preliminary key project information, specifically the applicant's proposed certification basis;[45] a compliance checklist that identifies the means by which the applicant plans to show that it complies with FAA regulations, and that identifies all deliverables[46] that the applicant anticipates will be necessary to show compliance; and a proposed project schedule with milestones. Applicants for transport category airplane new or amended, but not supplemental, type certificates would be required to include their expected certification date as part of this proposed schedule. The certification plan would also be required to identify any other information that the applicant anticipates will be necessary to enable the applicant's showings and certifying statement (per § 21.20) and the FAA's findings of compliance (per § 21.21(b)) to be timely and accurately made.

Under current practices, it is common for applicants to describe safety critical information as deliverables within the compliance checklist, and include preliminary system safety assessment sections and referenced documentation. The FAA anticipates that this practice would continue, under the new standard for the contents of proposed certification plans. FAA Order 8110.4C and the ePSCP Guide would still provide

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45 A proposed certification basis includes applicable regulation paragraphs with amendment levels, and the potential need for the FAA to issue exemptions, equivalent level of safety findings (ELOSs), and special conditions. See FAA Order 8110.4C at section 2-3(d).

46 Per current practices, these would include items such as test plans, reports, analyses (often called "deliverables", "documents", or "document deliverables"), and inspections that are necessary to show compliance with the applicable requirements.

applicants with additional information and best practices for submittals to meet the new regulatory requirements.

B. *Milestone Component of Applicant's Proposed Certification Plan*

TC applicants generally propose a project schedule as part of their certification plan. This proposed project schedule includes key events, called milestones. Typical milestones include familiarization meetings, submittal of issue papers (to develop the resolution of issues that may necessitate determinations such as special conditions, ELOSs, and exemptions), type board meetings, first airplane flight, data submittal requirements, inspection/conformity dates, and associated test dates.

In addition to the typical milestones that the applicant and the FAA use to plan the development and review of the project, the proposed schedule would, for applications for new or amended TCs for transport category airplanes, need to include sufficient milestones to enable compliance with requirements of the proposed rule. Such milestones would be consistent with current practices, and would include dates for submitting certain compliance documents such as safety assessments (including functional hazard assessments, fault tree analyses, the requirements validation plan, software development documents, and minimum training requirements[47] and other data to support the flight standardization board report and revisions (as needed).

Under current practices, an applicant's initial proposed certification plan also necessitates subsequent updates. These planned updates are, and under this proposal would continue to be, included as milestones within the proposed certification plan. This would establish "gates" throughout the certification process at which a proposed airplane system will be assessed for changes and impacts to the overall certification approach

47 14 CFR 121, subpart N defines operator training programs.

(e.g., certification basis, traceability, compliance dependencies, means of compliance, etc.) for the project.

In summary, the foregoing milestones would be used to monitor, review, and assess the progress of the proposed airplane design and systems toward compliance, jointly by the FAA and the applicant.

C. *Updating Transport Category Airplane Certification Plans With Safety Critical Information*

This proposal would require applicants for new and amended TCs for transport category airplanes to submit safety critical information as an update to the certification plan that proposed § 21.15(d) would require. Proposed § 21.15(e) would require that this update to the applicant's certification plan include or describe all of the safety critical information set forth in proposed § 21.1(c). An explanation of each of these five categories of safety critical information is set forth later in this proposal.

Regarding the level of detail to be provided with the submittal of safety critical information with the certification plan update under § 21.15(e), the FAA recognizes that the type design for a transport category airplane project may not be sufficiently developed at the time of initial submittal to include a thorough discussion of all safety critical information.

Applicants would be required to describe safety critical information in the update required by proposed § 21.15(e). This safety critical information would be as described elsewhere in this NPRM. The certification plan update would also include the anticipated relevant deliverables that are necessary to accomplish the requirements of the certification plan. This initial submittal of safety critical information with the certification plan update would be one step in the iterative process that builds toward the applicant's eventual compliance showings with certain regulations.

For example, the safety assessment process is often used by applicants to show compliance with certain regulatory design standards that are relevant to the section 105 categories of safety critical information, such as § 25.1309. Common and FAA -accepted means of compliance with that regulation are SAE Aerospace Recommended Practice (ARP)4761, "Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment," AC 25.1309-1A, and the "Arsenal" version of AC 25.1309-1A[48], which include safety assessment techniques. As previously noted in this NPRM, the "Arsenal" version of AC 25.1309-1A, has been accepted since 2001 when used in conjunction with an equivalent level of safety finding. That AC documents an established means for an applicant to show compliance to regulations, such as § 25.1309, related to safety critical information. Thus, the deliverables provided by these means of compliance are, and under this proposal would continue to be, regularly reviewed at proposed milestones.

The FAA proposes that requiring the submittal of safety critical information, even in preliminary form, at the time of application could be unreasonably early, given the likely state of the proposed design, especially for complex projects or new TCs. Thus, to implement this requirement to submit safety critical information, applicants for new or amended transport category airplane TCs would be required to identify, as part of their initial proposed certification plan, their expected (requested) certification date. This would align with current practice. Then, to ensure that the FAA has adequate time to review the safety critical information, the transport category airplane applicant would be required to submit that safety critical information no later than 6 months prior to the applicant's requested certification date, or within one year of submittal of the application, whichever is earlier. The FAA requests comment on these proposed timeframes.

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48 See footnote 9.

Section 105 begins with "Notwithstanding a delegation described in section 44702(d)…" Section 44702(d) authorizes the Administrator to delegate, to qualified private persons, certain matters related to the issuance of certificates, including type certificates. Therefore, the FAA proposes in this NPRM that all new submittals, and all ongoing disclosures, of safety critical information, by applicants be made to the FAA itself, not to any individual or organizational designee.

This initial submittal would not end the applicant's obligation to provide safety critical information to the FAA. Section 105 distinguishes between two required obligations: of the initial submittal, and then the ongoing disclosure, of safety critical information.

D. *Continuing Disclosure Requirement for New and Amended Transport Category Airplane TC Applications*

Proposed § 21.15(f) would require transport category airplane applicants, for the remainder of the certification process, to inform the FAA, within 3 business days of discovery, of any information or proposed design or analysis change that would materially alter[49] their previously-submitted safety critical information.

An example of such a proposed "design or analysis change" would be the discovery that a system safety analysis that the applicant previously submitted pursuant to this proposal, or was planned to be used as part of the applicant's showing of compliance with § 25.1309, erroneously misstated the likelihood of a hazard. This disclosure could be the applicant's identification of an error in a fault tree analysis.

The FAA proposes that such design or analysis change would be required to be submitted within 3 days of discovery, rather than later, due to the potential importance of

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49 "Materially alter" would mean potentially affecting or negating a compliance showing, a certification assumption (e.g., design, human factors, operational training, etc.), or the FAA's level of involvement (e.g., delegation decisions).

this information to safety and compliance, and to minimize the likelihood that the change delays the project.

E. *Submittal Requirement for Holders of Transport Category Airplane TCs Covered Under Part 25*

Proposed § 21.3(g) would require each holder (except STC holders) of a transport category airplane TC covered under part 25, within 90 days of the effective date of the final rule, to submit categories of safety critical information, if known and if not previously submitted, to the FAA for each model. The categories of required safety critical information for holders would be the same as for applicants, and would be defined in proposed § 21.1(c).[50]

The FAA does not expect this submittal to be voluminous, or its preparation burdensome or overly time-consuming. First, much of the required safety critical information will have already been submitted to the FAA, through the TC application and certification process. Safety critical information is included in the type design, operating limitations, substantiation documents, and other required information as a part of the TC.

Also, the FAA proposes that holders would be required to submit such information if "known" The purpose of this proposed limitation is to clarify that the new submittal requirement would not be intended to prompt all holders of transport category airplane TCs covered under part 25 to reevaluate all of their safety critical information for previously-approved designs, or interview past employees. Rather, safety critical information is "known" to the holder if any FAA designee including ODA staff (including administrators and unit members), any current manager[51] or responsible agent

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50 As with the requirement for applicants, athough a supplemental type certificate is a form of type certificate (14 CFR 21.20), per section 105 there would be no requirement for submittal of safety critical information that would be triggered by the holding of STCs covered under part 25, only by the holding of original and amended type certificates.

51 The FAA intends that "manager" would not be limited to persons who supervise other persons, and would also include other persons with managerial duties, including program managers, project managers, risk managers, safety managers, etc.

of the TC holder, or any employee of the TC holder with authority over or involvement in certification activities has knowledge of the information.

The FAA also proposes that previously-submitted information would not need to be resubmitted by TC holders or ODA holders to the FAA. As noted above, much of this information will have been previously submitted by the holder, as part of the type certification process. While section 105(a) begins with "[n]otwithstanding a delegation," the FAA does not consider that limitation to be retrospective. Thus, the previous submittal to a representative of the FAA[52] that was authorized to make a compliance finding on the agency's behalf, would qualify as having been previously submitted.

The FAA further proposes to limit the scope of this submittal requirement, and the ongoing disclosure requirement described in the next section, to just those transport category airplane TC holders whose airplanes are "covered under part 25 [of title 14]." This would make the proposal consistent with the text of section 105. It would thus exclude transport category airplanes that do not have 14 CFR part 25 in their certification basis.

F. *Requirement for Subsequent Continuing Disclosure by TC Holders of Transport Category Airplanes Covered Under Part 25*

Proposed § 21.3(g), beginning 90 days after the effective date of the proposed rule, would require TC holders, should they become aware of any newly discovered safety critical information, or a design or analysis change that would materially alter[53] any submission to the FAA of the information defined under § 21.1(c), to disclose such information to the FAA within 3 business days of the discovery. Like the mandated

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52 The FAA proposes that this allowance would only apply to organizational, not individual, designees. Only submittals that were previously made to Representatives of the Administrator authorized in accordance with 14 CFR part 183, subpart D would qualify.
53 "Materially alter" would mean potentially affecting or negating a compliance showing, impacting a certification assumption (e.g., design, human factors, operational training, etc.), or that would affect, or would have affected, the FAA's level of involvement (e.g., delegation decisions).

submittal of safety critical information by holders, this ongoing disclosure would be required to be made to the FAA itself, not to a designee such as an ODA.

The FAA proposes that the 90-day start date for this ongoing disclosure would logically follow the proposed deadline (within 90 days) for the initial submittal of safety critical information by TC holders. The FAA also considers that 90 days would be sufficient time for transport category airplane TC holders to review their internal procedures and make any necessary revisions in order to facilitate the proposed ongoing disclosure requirements.

G. *Interaction of This Proposal with Current Submittal and Disclosure Requirements*

As discussed in section B of this NPRM, TC and ODA holders currently submit certain information to the FAA, under the auspices of regulations such as §§ 21.3 and 183.63. Some safety critical information is likely to also prompt reporting under those two regulations. However, under this proposal, a TC holder of an airplane covered under part 25 would not be relieved of any other reporting obligation such as those under § 21.3, and an ODA holder similarly not relieved of any reporting obligation under part 183, as a result of the new obligation, which Congress required the FAA to mandate, to disclose safety critical information. Section 21.3 reports are, as reflected by their precise topics and accelerated timelines, urgent safety matters. Existing part 183 reporting may not characterize the safety critical information as clearly as is needed to implement this statutory mandate. However, the FAA requests comment on how these reporting processes might dovetail with this proposal, for greater efficiency in implementing the Congressional mandate.

Existing § 21.3(e) establishes timeframes for the required submittal of information under § 21.3. Those timeframes are relatively short, due to the likely urgent safety implications of the information. Proposed § 21.3(g) includes timelines appropriate to the submittal of safety critical information. Therefore, as part of the implementation of

proposed § 21.3(g), this NPRM proposes a minor revision of § 21.3(e), to exclude the information that would be submitted as part of § 21.3(g) from the requirements of paragraph (e), and to change the title of that section.

H. *Explanations of Five Categories of Safety Critical Information*

Proposed § 21.1(c) would contain the definitions of the five categories of safety critical information for the purposes of proposed §§ 21.15(e) and (f), and 21.3(g). Each category of safety critical information that the FAA proposes, as required by Congress, to require to be submitted and subsequently disclosed by applicants in proposed § 21.15(e) and (f), and by holders in proposed § 21.3(g), is explained as follows.

1. Uncommanded Operation of Safety Critical Functions and Features

The first category of safety critical information that the FAA, pursuant to Congress' direction, would require applicants and holders to submit and disclose would be all design and operational details, intended functions, and failure modes of any system that, without being commanded by the flightcrew, commands the operation of any safety critical function or feature required for control of the airplane during flight or that otherwise changes the flight path or airspeed of an airplane.

The FAA proposes that the regulatory definition of this category of information would be the same as the statutory definition, except for changing the opening "Any" to "All" to ensure that all, not just selected, information is provided, and making "flight crew" one word for consistency with other parts of 14 CFR.[54] The FAA provides the following explanation of some of the terms in this category of safety critical information.

First, the "system(s)" which the FAA proposes would be covered by this requirement include, but are not limited to, flight control systems and other computer (software) controlled systems (e.g., autopilot, stability augmentation, automatic trim,

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54 The FAA's proposed definitions of safety critical information also include minor, nonsubstantive changes to facilitate regulatory implementation, such as replacing "14 CFR" with "this chapter," etc.

autothrottle (autothrust), envelope protection), whose failure or erroneous activation would present a risk rated hazardous or catastrophic.

A "safety critical function or feature" would be one whose failure could be hazardous or catastrophic. This would align with how the FAA has defined safety critical in other contexts, including transport category airplane SSA.[55]

Regarding "all design and operational details," the FAA proposes that such details would be those with relevance to a referenced system's function, failure, or operational suitability. Under current practice, in order to show compliance with §§ 25.1301(a) and 25.1309(a), the submitted information would include sufficient design and operational detail, and description of the intended function, to enable the FAA to assess whether the equipment is of a kind and design appropriate to its intended function and performs its intended function under any operating condition. Section 25.1309(d) requires the applicant to submit an analysis of the possible modes of failure, probability of failures, resulting effects, etc., (i.e., a system safety assessment) to show compliance to § 25.1309(b).[56] Thus, applicants for transport category airplane TCs covered under part 25 are already required to submit this information through the certification process.[57]

The FAA notes some overlap between this proposed category of information and the information that § 21.3(c)(11) requires manufacturers to submit to the FAA: "any … flight control malfunction, defect, or failure which causes an interference with normal control of the aircraft for which derogates the flying qualities." However, as previously discussed, any such overlap would not obviate the initial submittal and subsequent disclosure requirements that Congress directed the FAA to mandate, not only upon applicants, but also upon holders of transport category airplane TCs.

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55 Per the "Arsenal" version of AC 25.1309-1A, Safety critical for transport category airplanes, means a function, component or system whose failure could be hazardous or catastrophic.
56 14 CFR 25.1309(b) establishes certain reliability requirements for airplane systems, equipment, and installations.
57 Section 21.20 requires the applicant to show compliance with all applicable requirements, provide the FAA the means by which such compliance has been shown, and to certify such compliance.

The FAA anticipates that this category of safety critical information should not be overly difficult or time-consuming for holders to submit or continue to disclose. As previously noted, part 25 transport category airplane TC holders will have disclosed much, if not all, of this information when seeking their original or amended TC. For example, much "safety critical" information would have been disclosed as part of showing of compliance with § 25.1309, as described above.

2. Aspects of Autopilot and Autothrottle (Autothrust) Systems

The next category of mandatory safety critical information that the FAA would require applicants and holders to submit and disclose would be all design and operational details, intended functions, failure modes, and mode annunciations of autopilot and autothrottle systems, if applicable.

For purposes of this requirement, the term "autopilot" means a function that would provide automatic control of the airplane, typically in pitch, roll, and yaw. The term includes the sensors, computers, power supplies, servo-motors/actuators and associated wiring, necessary for its function. It includes any indications and controllers necessary for the pilot to manage and supervise the system. Any part of the autopilot system that remains connected to the primary flight controls when the autopilot is not in use is regarded as a part of the primary flight controls[58].

For purposes of this requirement, the term "autothrottle (autothrust)" means a function that provides automatic control of the thrust of the airplane. The term includes the sensors, computers, power supplies, servo-motors/actuators and associated wiring, necessary for its function. It includes any indications and controllers necessary for the pilot to manage and supervise the system. Any part of the autothrust that remains

58 Reference AC 25.1329-1C, appendix B

connected to the engine controls when the autothrust is not in use is regarded as a part of the engine control system.

For the purposes of this requirement, a "mode annunciation" is a function that provides the flightcrew with awareness of the current automation mode, alerts them of any mode changes or failures that could degrade the handling or operational characteristics of the airplane, and may require the flightcrew to alter their primary control strategy. The mode annunciation is included because it is imperative that the flightcrew understand the state of the airplane systems so they can interact with those systems appropriately as they fly the airplane. The FAA posits that Congress included mode annunciation in this category because it is imperative that the flightcrew understand the state of the airplane systems to minimize flightcrew errors and confusion concerning the behavior and operation of the flight guidance system as they fly the airplane.

Although paragraph (B) of section 105(a) did not begin with the term "any" or "all," the FAA is proposing that "all" such details, failure modes, etc., known to the applicant or holder would be required to be submitted and subsequently disclosed. This is to ensure that all, not just selected, applicable information is provided.

Again, while there may be overlap with § 21.3(c)(11), as discussed in section B of this NPRM, the FAA proposes that this would be an independent requirement.

The FAA again anticipates that this information would not be overly difficult or time-consuming for applicants or holders to submit or disclose, because the compliance document(s) would have been submitted by the applicant as part of its showings of compliance and the company would be highlighting how the discovered information affects that prior showing of compliance with substantive regulations (for example, §§ 25.1301(a) and 25.1309(a), (c), and (d) for certain equipment, systems, and installations; § 25.1322 for flightcrew alerting; and certain paragraphs of § 25.1329 for flight guidance systems).

3. Failures that Could Result in Hazardous or Catastrophic Outcomes

The next category of safety critical information that the FAA proposes that applicants and holders be required to submit and continue to disclose, is all failure or operating conditions that the TC applicant or holder anticipates or has concluded would result in an outcome with a severity level of hazardous or catastrophic.

As previously noted, current FAA guidance for applicants addresses catastrophic failure and operating conditions, but does not explicitly address "hazardous" conditions.[59] However, as previously discussed, the "Arsenal" version of AC 25.1309-1A does so, and therefore applicants typically address hazardous failure and operating conditions in their SSAs.

"Hazardous" for purposes of this proposed rule would be the following:
A failure condition that would reduce the capability of the airplane or the ability of the flightcrew to cope with adverse operating conditions to the extent that there would be—

- A large reduction in safety margins or functional capabilities,
- Physical distress or excessive workload such that the flightcrew cannot be relied upon to perform their tasks accurately or completely, or
- Serious or fatal injuries to a relatively small number of persons other than the flightcrew.[60]

"Catastrophic" for purposes of this rule would be a failure condition that would result in multiple fatalities, usually with the loss of the airplane.[61]

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59 AC 25.1309-1A.
60 For the purpose of performing a safety assessment, a "small number" of fatal injuries means one such injury.
61 A catastrophic failure condition was defined in previous versions of 14 CFR 25.1309, and is currently defined in AC 25.1309-1A as a failure condition that would prevent continued safe flight and landing. Continued safe flight and landing was defined in AC 25.1309-1A as: "The capability for continued controlled flight and landing at a suitable airport, possibly using emergency procedures, but without requiring exceptional pilot skill or strength." Some airplane damage may be associated with a failure condition, during flight or upon landing." For the purpose of performing a safety assessment, "multiple fatalities" means two or more fatalities.

The FAA anticipates that this category of safety critical information would not be overly difficult or time-consuming for applicants or holders to submit or disclose, for several reasons.

First, applicants will submit, and all current TC holders would have submitted, during certification of transport category airplanes with a certification basis after Amendment 25-23,[62] information about failure conditions that would result in outcomes with a severity level of major and catastrophic. New TC applicants include a functional hazard assessment as part of their compliance showings. The FAA anticipates that most if not all of the TC holders whose designs were approved using the "Arsenal" version of AC 25.1309-1A as a means of compliance would not have to submit any new information here, unless a compliance assumption or determination has changed which materially alters that assessment. The "major" hazard category[63] defined by AC 25.1309-1A is divided into two categories in the "Arsenal" version: "hazardous" and "major," with corresponding probability requirements of "extremely remote" (on the order of $10^{-9} < p \leq 10^{-7}$) and "remote" (on the order of $10^{-7} < p \leq 10^{-5}$), respectively. The granular assessment of failure conditions in the "Arsenal" version allows for more accurate analysis of highly integrated systems, which perform complex and interrelated functions, particularly through the use of electronic technology and software-based techniques. This more granular categorization also allows for better differentiation of failure effects on flightcrew than the current requirements of § 25.1309(b). The "hazardous" category in the "Arsenal" version corresponds to the more severe end of the "major" category in current § 25.1309(b)(2), which is referred to as "severe major" in AC 25.1309-1A. Thus, the FAA is applying the "Arsenal" version of hazardous for this proposed rule.

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62 35 FR 5665 (April 8, 1970), effective May 8, 1970.
63 Reference AC 25.1309-1A, dated June 21, 1988

The FAA also notes that the requirement in section 105(a), and thus this NPRM, is intended to prompt the submittal, disclosure, and assessment of potential failure conditions that could have an outcome of hazardous or catastrophic. The FAA invites comment on this issue.

4. Software-Dependent Handling Qualities

The fourth category of safety critical information that the FAA would require applicants and holders to submit and disclose would be any adverse handling quality that fails to meet the requirements of part 25 of this chapter without the addition of a software system to augment the flight controls of the airplane to produce compliant handling qualities.

For purposes of this rulemaking, and consistent with FAA policy, an "adverse" handling quality would be one that does not meet the applicable regulations on handling qualities in part 25. Some of the "applicable regulations" for purposes of this requirement would be the Controllability and Maneuverability regulations in subpart B of part 25; § 25.672, Stability augmentation[64] and automatic and power-operated systems; and § 25.1309(d), Equipment, systems, and installations. These sections include requirements to ensure the airplane is aerodynamically stable, and predictable in its handling. "Handling qualities" as applied here is intended to address pilot in the loop control of the aircraft trajectory and thus includes assessment of those systems which rely, primarily, on pilot input to effect changes in that trajectory.

Examples of such "software system(s)" include MCAS on the Boeing 737 MAX, pitch augmentation for the Boeing Model 777, and a flight control system that controls the yaw damper system of an airplane.

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64 Per AC 25.1329-1C, a "Stability Augmentation System" consists of automatic systems that provide or enhance stability for specific aerodynamic characteristics of an airplane (for example, yaw damper, longitudinal stability augmentation system, Mach trim).

The FAA notes the similarity of this provision of the proposed fourth category with the requirement of § 21.3(c)(11), but again posits that it is sufficiently different that a separate requirement is necessary for holders, in order to comply with the statute.

The FAA anticipates that this information would not be overly difficult or time-consuming for applicants or holders to submit or disclose, because by definition the system was required for the airplane to be compliant with FAA stability standards, and therefore would have been on the airplane's compliance documentation.

5. SSA for Components and Systems with Potentially Hazardous or Catastrophic Outcomes

The fifth and final category of mandatory safety critical information that the FAA would require applicants and holders to submit and disclose would be a system safety assessment with respect to a system described in paragraph (1) or (2) of proposed § 21.1(c), or with respect to any component or other system for which failure or erroneous operation of such component or system could result in an outcome with a severity level of hazardous or catastrophic.

The FAA anticipates that previously-approved transport category airplane designs covered under part 25 will likely have this information in their SSAs, and that everything from a "hazardous" to a "catastrophic" failure condition would be included, and therefore not required to be resubmitted by a holder. Section 25.1309(d) requires all applicants for transport category airplane TCs to submit an analysis of the possible modes of failure, probability of failures, resulting effects (including effects of erroneous operation), etc., (i.e., an SSA) to show that proposed design's compliance to § 25.1309(b).

The definitions of catastrophic and hazardous would be as previously noted. For purposes of proposed § 21.3(g), applicants and holders could use the definitions in the "Arsenal" version of AC 25.1309-1A, or in relevant FAA regulation or policy issued after the effective date of this proposed rule.

V. Regulatory Notices and Analyses

Federal agencies consider impacts of regulatory actions under a variety of executive orders and other requirements. First, Executive Order 12866 and Executive Order 13563, as amended by Executive Order 14094 ("Modernizing Regulatory Review"), direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify the costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate that may result in the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any one year. The current threshold after adjustment for inflation is $177,000,000, using the most current (2022) Implicit Price Deflator for the Gross Domestic Product. This portion of the preamble summarizes the FAA's analysis of the economic impacts of this rule.

In conducting these analyses, the FAA has determined that this rule: would result in minimal costs; is not a 'significant regulatory action' as defined in section 3(f) of Executive Order 12866; will not have a significant economic impact on a substantial number of small entities; will not create unnecessary obstacles to the foreign commerce of the United States; and will not impose an unfunded mandate on State, local, or Tribal governments, or on the private sector.

A. *Regulatory Impact Analysis*

This rule would implement a Congressional mandate by imposing new regulatory requirements (proposed § 21.15(d), (e), and (f) for applicants for new and amended TCs and proposed § 21.113(c)(1) through (c)(4) for applicants for new and amended STCs, and new regulatory requirements (proposed § 21.3(g)(1) and (2)) for TC holders. This proposal would add definitions for safety critical information, in proposed § 21.1(c).

The following paragraphs describe the proposal, the baseline (current rule or current practice or current policy), and the costs/benefits. The FAA expects the costs to be minimal as described below. Benefits are addressed qualitatively.

1. Applicants and Holders (Section 21.1(c)(1) through (5))

Proposal: As part of its implementation of the Congressional mandate related to safety critical information, the FAA would define five categories of safety critical information in proposed § 21.1(c)(1) through (5).

Baseline: These five specific categories of safety critical information are not currently defined in FAA regulations.

Costs/Benefits: This provision would impose no costs. These definitions of safety-critical information would facilitate the regulatory implementation of five categories of safety critical information in the Congressional mandate, and would inform applicants for, and holders of, TCs for transport airplanes covered under part 25 regarding what must be submitted and disclosed under proposed §§ 21.15(e), (f), and 21.3(g).

2. Applicants

a. Section 21.15(d)

Proposal: An application for a TC, including a new or amended TC, would be required to be accompanied by a proposed certification plan.

Baseline: Currently, applicants for TCs submit a proposed certification plan to the FAA at the time of application as indicated in FAA Order 8110.4C.

Costs/benefits: The FAA, as part of its implementation of the Congressional mandate, would establish a specific regulatory requirement for applicants to submit a certification plan. This would continue longstanding existing practices and thus involve minimal cost.

b. Section 21.15(d)(1)

Proposal: The certification plan must include a proposed certification basis.

Baseline: The proposed certification plan submitted by applicants under current practices includes a proposed certification basis, as described in FAA Order 8110.4C.[65]

Costs/Benefits: The proposal would implement part of the Congressional mandate and would incur minimal costs as the applicant already includes a proposed certification basis under the guidance in FAA Order 8110.4C.

c. Section 21.15(d)(2)

Proposal: The applicant's proposed certification plan would be required to include a proposed compliance checklist that contains the means of compliance, and that identifies all deliverables that the applicant anticipates will be necessary to show compliance.

Baseline: The proposed certification plan is submitted by applicants under current practices as described in FAA Order 8110.4C. Applicants submit a list of deliverables to show compliance with the applicable certification basis and how the applicant will ensure all showing have been made. This can be accomplished using a compliance checklist addressing each regulation applicable to the product. A description of how compliance

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65 See footnote 15.

will be shown (e.g., ground test, flight test, analysis, similarity, or other acceptable means of compliance) is also included in FAA Order 8110.4C as part of a certification plan.

Costs/Benefits: The proposal would implement part of the Congressional mandate and would incur minimal costs as the applicant is already including a proposed compliance checklist with means of compliance identifying all known compliance deliverables that the applicant anticipates will be necessary to show compliance.

d. Section 21.15(d)(3)

Proposal: The proposed certification plan would be required to include a proposed project schedule with proposed milestones.

Baseline: Applicants for TCs include a proposed project schedule with proposed milestones in their certification plans as described in FAA Order 8110.4C.

Costs/Benefits: The proposal would implement part of the Congressional mandate and incur minimal costs as the applicant is already including a proposed schedule with proposed milestones.

e. Section 21.15(d)(4)

Proposal: The applicant's proposed certification plan would be required to include any other information necessary to allow the applicant's showings and certifying statement, and the FAA's findings, of compliance to be timely and accurately made.

Baseline: Applicants for TCs and amended TCs submit proposed certification plans under the guidance in FAA Order 8110.4C[66] that include any information necessary to allow the applicant's showings and certifying statement, and the FAA's findings, of compliance to be timely and accurately made.

Costs/Benefits: This rule would establish specific regulatory requirements for the information to be submitted in certification plans. These specific regulatory standards

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66 Paragraphs 2-3d.(1) through (11), as applicable to the certification project.

would be consistent with the informational and planning purposes of the categories of information typically submitted by applicants. Applicants could, and the FAA expects most applicants still would, use those existing categories as a means of compliance.

f. Section 21.15(d)(5)

Proposal: An application for a new or amended, but not supplemental, TC for a transport category airplane would be required to include a proposed milestone that identifies the applicant's requested date for TC issuance.

Baseline: Applicants for TCs include milestones in their certification plans that include the applicant's expected certification date as indicated in FAA Order 8110.4C.

Costs/Benefits: Due to the alignment of the proposal with current practices, the FAA expects minimal costs.

g. Section 21.15(e)

Proposal: For applicants for a new or amended, but not supplemental, type certificate for a transport category airplane, the proposed certification plan would be required to be updated to include or describe all of the safety critical information set forth in § 21.1(c). The applicant would be required to submit this update to the FAA within 1 year of submitting the application, but no later than 6 months prior to the requested date of issuance of the type certificate.

Baseline: Applicants for transport category airplane TCs currently submit information describing their proposed design and operational details, means of showings of compliance and proposals for findings of compliance, in order to show that their proposed designs comply with several relevant regulations. Currently, applicants submit this compliance information throughout the certification process.

Costs/Benefits: Safety critical information about its proposed design and operational suitability should already be available to the transport airplane applicant, even in preliminary form, at the time of submittal of the required update to the certification

plan, so there should be no additional costs of identifying this information for submission. Submission costs should be negligible.

The FAA would be more likely to receive safety critical information in a timely manner. The agency would also be more likely to receive safety critical information as the applicant would be aware of what information is considered safety critical due to the definitions in proposed § 21.1(c).

This could have a safety benefit because the agency would be aware of this important information relatively early in the certification process and would be more likely to receive specific safety critical information at that point. The FAA could then identify and provide feedback to the applicant about their proposed design and compliance information specific to safety critical information early.

h. Section 21.15(f)

Proposal: Each applicant for a new or amended TC for a transport category airplane would, within 3 business days of discovery, be required to disclose to the FAA any information or design or analysis change that would materially alter any prior submission of the safety critical information defined in § 21.1(c). The proposed rule would clearly define the FAA, not a designee, who would receive the safety critical information for transport category airplanes from applicants.

Baseline: The transport category airplane applicant currently keeps its proposed design, operational, and compliance information updated throughout the project, but there is no specific timeframe for them to disclose new safety critical information to the FAA or for the types of changes that require disclosure. Under the current practice it can sometimes be a designee, or person within an ODA unit, who receives the updated information.

Costs/Benefits: The FAA expects that the cost would be minimal because the applicant is currently expected to keep their information current. However, the rule would

require the information or design or analysis change to be disclosed to the FAA within 3 business days of discovery. The FAA does not expect this prompt submission of the information to the FAA to be costly.

This could have a safety benefit because the agency would be aware of changes to safety critical information earlier (within 3 business days of discovery). The FAA could then identify and share potential concerns about the changes with the applicant earlier, and resolve these concerns earlier.

Also, there might be a benefit of submitting directly to the FAA, as it would be more likely that the appropriate information would get to the FAA. When investigating the FAA's certification of the Boeing 737 MAX, a Congressional committee found that Boeing did not clearly relay important safety related information to the FAA because there was no requirement to do so.[67] According to the committee report,[68] this

"…hinder[ed] a more comprehensive FAA review of the 737

MAX which may have improved the safety of the airplane..."

i. Section 21.113(c)

Proposal: Applications for new and amended STCs would, like applications for new and amended TCs, be required to be accompanied by a proposed certification plan.

Baseline: Currently, applicants for STCs submit a proposed certification plan to the FAA at the time of application.

Costs/Benefits: The proposal would incur minimal costs as STC applicants already submit proposed certification plans. The proposal would establish consistency in the requirements for TC and STC applicants by also adding the requirement for STC applicants and aligning the process for both certificate types.

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67 House Report at pg. 57.

68 By quoting this report, the FAA is not taking a position on the causes or avoidance of the accidents, but simply noting what appears to have led to the legislation.

j. Section 21.113(c)(1)

Proposal: The certification plan must include a proposed certification basis.

Baseline: The proposed certification plan submitted by applicants under current practices includes a proposed certification basis as described in FAA Order 8110.4C.

Costs/Benefits: The proposal would establish consistency in the requirements for TC and STC applicants by aligning the process for both certificates and would incur minimal costs as the applicant is already including a proposed certification basis.

k. Section 21.113(c)(2)

Proposal: The applicant's proposed certification plan would be required to include a proposed compliance checklist that contains means of compliance, and that identifies all deliverables that the applicant anticipates will be necessary to show compliance.

Baseline: The proposed certification plan is submitted by applicants under current practices as described in FAA Order 8110.4C. Applicants submit a list of deliverables to show compliance with the applicable certification basis and to show how the applicant will ensure all showings have been made. This can be accomplished by using a compliance checklist that addresses each regulation applicable to the product. A description of how compliance will be shown (e.g., ground test, flight test, analysis, similarity, or other acceptable means of compliance) is also included in FAA Order 8110.4C as part of a certification plan.

Costs/Benefits: The proposal would incur minimal costs as the applicant already includes a proposed compliance checklist that contains means of compliance, and that identifies all deliverables that the applicant anticipates will be necessary to show compliance. The proposal would establish consistency in the requirements for TC and STC applicants by also adding the requirement for STC applicants.

l. Section 21.113(c)(3)

Proposal: The proposed certification plan would be required to include a proposed project schedule with proposed milestones.

Baseline: Applicants for STCs include a proposed project schedule with proposed milestones in their certification plans as described in FAA Order 8110.4C.

Costs/Benefits: The proposal would incur minimal costs as STC applicants are already submitting proposed milestones with their certification plans. The proposal would establish consistency in the requirements for TC and STC applicants by aligning the process for both certificate types.

m. Section 21.113(c)(4)

Proposal: The certification plan for an STC would be required to include any other information necessary to allow the applicant's showings and certifying statement, and the FAA's findings, of compliance to be timely and accurately made.

Baseline: Applicants for STCs submit proposed certification plans, that include under the guidance in FAA Order 8110.4C any information necessary to allow the applicant's showings, and the FAA's findings, of compliance to be timely and accurately made.

Costs/Benefits: The proposal would incur minimal costs as STC applicants are already submitting proposed certification plans with information necessary to allow the applicant's showings, and the FAA's findings, of compliance to be timely and accurately made. The proposal would also establish consistency in the requirements for TC and STC applicants by also adding the requirement for STC applicants and aligning the process for both certificate types.

3. Holders

a. Section 21.3(g)(1)

Proposal: The holder of a TC, including an amended TC but not including an STC, for a transport category airplane covered under part 25 would, within 90 days of (effective date of final rule), be required to submit to the FAA, for each model, all safety critical information, as defined by § 21.1(c), which is known and which has not previously been submitted to the FAA.

Baseline: Holders of transport category airplane TCs are currently required to submit much of the safety critical information defined by § 21.1(c) to the FAA. TC holders currently submit, or have already submitted, much of this information via a variety of regulatory and policy mechanisms. As an applicant, prior to receiving the transport category airplane TC, the holder would have had to have shown compliance with regulations such as § 25.1309. Such compliance would have included compliance data which correlates with the five categories of safety critical information. Also, holders of such certificates have an ongoing regulatory obligation to inform the FAA of certain failures, malfunctions, and defects, including those that would affect the flight control system pursuant to § 21.3(c)(11). The majority of current domestic holders of part 25 transport category airplane TCs are also ODA holders. Such ODA holders have an ongoing obligation to inform the FAA of potential safety and compliance issues with their approved designs, pursuant to § 183.63.

Cost/benefits: The FAA expects minimal cost. First, the scope of the covered information is relatively narrow. Second, as described in the preceding paragraph, FAA expects that much if not all of such information will have already been submitted by the holder.

The benefits of this requirement would be ensuring that the FAA would be aware of safety critical information, if any, that it had not previously been made aware of. This

would be a potential safety benefit as the FAA would be able to identify and address any potential issues.

b. Section 21.3(g)(2)

Proposal: The holder of a transport category airplane TC covered under part 25 would be required to disclose to the FAA, within 3 business days of discovery, any newly discovered information or design or analysis change that would materially alter any safety critical information as defined by § 21.1(c).

Baseline: As described above, TC holders and ODA holders are required to submit certain information to the FAA on an ongoing basis. Some of this information, such as that required by § 21.3, must generally be submitted within 24 hours. The timeline for submittal of other information is dependent on the nature of the information and the provisions of the ODA holder's FAA-approved ODA procedures manual. However, there is not a specific requirement to disclose safety critical information, as would be defined in proposed § 21.1, within 3 business days.

Costs/Benefits: Because, as described above, most of this information is already being updated (disclosed to the FAA) pursuant to existing processes, the FAA expects that this requirement, of disclosing information to the FAA within 3 days, will carry a minimal cost. The FAA expects that the provision would ensure that the safety critical information as specifically defined by Congress would be provided to the FAA in a timely manner.

The FAA calls for comment on all the preceding determinations.

4. Conclusion

Based on the preceding discussion, the FAA concludes that the proposed rule would impose minimal costs on industry, as discussed in the regulatory notices and analyses section. The FAA has found potential benefits from the proposal. The FAA may receive, and therefore be aware of, safety critical information that it had not previously

been made aware of, not only from transport category airplane TC applicants but also from holders. It would receive the safety critical information earlier in, and more definitively throughout, the certification process. This could result in a safety benefit, as the FAA would be able to identify and share concerns with the applicant and address any potential issues. The proposed rule would codify the current practice of submitting a proposed certification plan with milestones, and thus provide a planning benefit, and increased certainty and predictability, for applicants. As it would follow current practice, this requirement would impose minimal cost. The regulatory implementation of the Congressional requirement that applicants and holders submit and disclose five categories of safety critical information would be another safety benefit. The submittal of previously undisclosed, and continued disclosure of newly discovered, safety critical information by transport category airplane TC holders may also provide a safety benefit.

B. *Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) of 1980, Public Law 96–354, 94 Stat. 1164 (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857, Mar. 29, 1996) and the Small Business Jobs Act of 2010 (Pub. L. 111–240, 124 Stat. 2504 Sept. 27, 2010), requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term ‘‘small entities’’ comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

The FAA has determined that, based on the Small Business Administration (SBA) size standard for aircraft manufacturing, (Table 1), none of the entities that would be subject to the proposed rulemaking are small entities. Also, as described in the RIA, the proposed rule would impose minimal costs. Therefore, the FAA proposes to certify that

the rule would not have a significant economic impact on a substantial number of small entities. The FAA welcomes comments on the basis for this certification.

Table 1. Small Business Size Standard

NAICS Code	Description	Size Standard
336411	Aircraft manufacturing	1,500 employees
Source: SBA (2019)[69] NAICS = North American Industrial Classification System		

C. *International Trade Impact Assessment*

The Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

The FAA has assessed the potential effect of this rule and determined that as it results in a minimal cost to U.S. manufacturers, it would not create an unnecessary obstacle to foreign commerce. As a result, the FAA does not consider this rule as creating an unnecessary obstacle to foreign commerce.

D. *Unfunded Mandates Assessment*

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531-1538) governs the issuance of Federal regulations that require unfunded mandates. An unfunded mandate is a regulation that requires a State, local, or Tribal government or the private sector to incur

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69 Small Business Administration (SBA). 2019. Table of Size Standards. Effective August 12, 2019. www.sba.gov/document/support--table-size-standards.

direct costs without the Federal government having first provided the funds to pay those costs. The FAA determined that the proposed rule would not result in the expenditure of $177,000,000 or more by State, local, or Tribal governments, in the aggregate, or the private sector, in any one year.

E. *Paperwork Reduction Act*

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there would be no new requirement for information collection associated with the proposed requirement for transport category airplane TC applicants and holders to submit and disclose safety critical information because this information is already submitted under existing processes, as described elsewhere in this NPRM. Approval to collect such information under those processes was previously approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) and was assigned OMB Control Number 2120–0018.

F. *International Compatibility*

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that there are no ICAO Standards and Recommended Practices that correspond to these proposed regulations.

G. *Environmental Analysis*

FAA Order 1050.1F identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act (NEPA) in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the

categorical exclusion identified in paragraph 5-6.6f for regulations and involves no extraordinary circumstances.

VI. Executive Order Determinations

A. *Executive Order 13132, Federalism*

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order (EO) 13132, Federalism. The FAA has determined that this action would not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have federalism implications.

B. *Executive Order 13175, Consultation and Coordination with Indian Tribal Governments*

Consistent with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments,[70] and FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures,[71] the FAA ensures that Federally Recognized Tribes (Tribes) are given the opportunity to provide meaningful and timely input regarding proposed Federal actions that have the potential to affect uniquely or significantly their respective Tribes. At this point, the FAA has not identified any unique or significant effects, environmental or otherwise, on Tribes resulting from this proposed rule.

C. *Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use*

The FAA analyzed this proposed rule under EO 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use

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70 65 FR 67249 (Nov. 6, 2000).
71 FAA Order No. 1210.20 (Jan. 28, 2004), available at www.faa.gov/documentLibrary/media/1210.pdf.

(May 18, 2001). The FAA has determined that it would not be a "significant energy action" under the executive order and would not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

D. *Executive Order 13609, Promoting International Regulatory Cooperation*

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of EO 13609 and has determined that this action would have no effect on international regulatory cooperation.

VII. Additional Information

A. *Comments Invited*

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The FAA also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should submit only one time if comments are filed electronically, or commenters should send only one copy of written comments if comments are filed in writing.

The FAA will file in the docket all comments it receives, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments it receives on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without

incurring expense or delay. The FAA may change this proposal in light of the comments it receives.

In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to www.regulations.gov, as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at www.dot.gov/privacy.

B. *Confidential Business Information*

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to the person in the **FOR FURTHER INFORMATION CONTACT** section of this document. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

C. *Electronic Access and Filing*

A copy of this NPRM, all comments received, any final rule, and all background material may be viewed online at www.regulations.gov using the docket number listed above. A copy of this proposed rule will be placed in the docket. Electronic retrieval help and guidelines are available on the website. It is available 24 hours each day, 365 days each year. An electronic copy of this document may also be downloaded from the Office

of the Federal Register's website at www.federalregister.gov and the Government Publishing Office's website at www.govinfo.gov. A copy may also be found at the FAA's Regulations and Policies website at www.faa.gov/regulations_policies.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW, Washington, DC 20591, or by calling (202) 267-9677. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, may be accessed in the electronic docket for this rulemaking.

D. *Small Business Regulatory Enforcement Fairness Act*

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires the FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document may contact its local FAA official, or the person listed under the **FOR FURTHER INFORMATION CONTACT** heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects in 14 CFR Part 21

Aircraft, Aviation safety, Exports, Imports, Reporting and recordkeeping requirements.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend chapter I of title 14, Code of Federal Regulations as follows:

PART 21— CERTIFICATION PROCEDURES FOR PRODUCTS AND ARTICLES

1. The authority citation for part 21 continues to read as follows:

Authority: 42 U.S.C. 7572; 49 U.S.C. 106(f), 106(g), 40105, 40113, 44701–44702, 44704, 44707, 44709, 44711, 44713, 44715, 45303.

2. Amend § 21.1 by adding paragraph (c) to read as follows:

§ 21.1 Applicability and definitions.

* * * * *

(c) For purposes of §§ 21.3 and 21.15, safety critical information is:

(1) All design and operational details, intended functions, and failure modes of any system that, without being commanded by the flightcrew, commands the operation of any safety critical function or feature required for control of the airplane during flight or that otherwise changes the flight path or airspeed of an airplane;

(2) all design and operational details, intended functions, failure modes, and mode annunciations of autopilot and autothrottle systems, if applicable;

(3) all failure or operating conditions that the type certificate applicant or holder anticipates or has concluded would result in an outcome with a severity level of hazardous or catastrophic;

(4) any adverse handling quality that fails to meet the requirements of part 25 of this chapter without the addition of a software system to augment the flight controls of the airplane to produce compliant handling qualities; and

(5) a system safety assessment with respect to a system described in paragraph (1) or (2) of this paragraph, or with respect to any component or other system for which failure or erroneous operation of such component or system could result in an outcome with a severity level of hazardous or catastrophic.

3. Amend § 21.3 by revising the section heading and the introductory text of paragraph (e), and adding paragraph (g) to read as follows:

§ 21.3 Reporting of failures, malfunctions, defects, and safety critical information.

* * * * *

(e) Each report required by this section, except as provided in § 21.3(g) —

* * * * *

(g) The holder of a type certificate, including an amended type certificate but not including a supplemental type certificate, for a transport category airplane covered under part 25 of this chapter must:

(1) Within 90 days of [date 60 days after publication of final rule in the *Federal Register*], submit to the FAA, for each model, all safety critical information, as defined by § 21.1(c), which is known and which has not previously been submitted to the FAA, and;

(2) After 90 days of [date 60 days after publication of final rule in the *Federal Register*], disclose to the FAA, within 3 business days of discovery, any newly discovered safety critical information as defined by § 21.1(c), or design or analysis change that would materially alter such information.

4. Amend § 21.15 by adding paragraphs (d), (e), and (f) to read as follows:

§ 21.15 Application for type certificate.

* * * * *

(d) An application for a type certificate, including a new or amended type certificate, must be accompanied by a proposed certification plan. The certification plan must include:

(1) A proposed certification basis;

(2) A proposed compliance checklist that contains means of compliance, and that identifies all deliverables that the applicant anticipates will be necessary to show compliance;

(3) A proposed project schedule, with milestones;

(4) Any other information necessary to allow the applicant's showings and certifying statement, and the FAA's findings, of compliance to be timely and accurately made; and

(5) For applications for a new or amended, but not supplemental, type certificate for a transport category airplane, a proposed milestone that identifies the applicant's requested date for type certificate issuance.

(e) Within 1 year of submitting the application for a new or amended, but not supplemental, type certificate for a transport category airplane, but no later than 6 months prior to the requested date of issuance of the type certificate, the applicant must update the proposed certification plan required by § 21.15(d) to include or describe all of the safety critical information set forth in § 21.1(c).

(f) Each applicant for a new or amended, but not supplemental, type certificate for a transport category airplane must, within 3 business days of discovery, disclose to the FAA any information or design or analysis change that would materially alter any prior submission of the safety critical information set forth in § 21.1(c).

5. Amend § 21.113 by revising paragraph (c) and adding paragraphs (c)(1) through (c)(4) to read as follows:

§ 21.113 Requirement for supplemental type certificate.

* * * * *

(c) The application for an STC must be made in the form and manner prescribed by the FAA and must be accompanied by a proposed certification plan. The certification plan must include:

(1) A proposed certification basis;

(2) A proposed compliance checklist that contains means of compliance, and that identifies all deliverables that the applicant anticipates will be necessary to show compliance;

(3) A proposed project schedule, with milestones; and

(4) Any other information necessary to allow the applicant's showings and certifying statement, and the FAA's findings, of compliance to be timely and accurately made.

Issued under authority provided by 49 U.S.C. 106(f), 44701, and 44704 in Washington, DC on January 22, 2024.

Lirio Liu,

Executive Director of Aircraft Certification.

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