

that it has not taken voluntary actions and does not currently have such voluntary actions planned for the future on its website on April 15 annually and maintain it thereafter. Each Bank shall ensure that reports are accessible to persons with disabilities.

(f) *Additional requirements and guidance.* FHFA may require additional information to be included in reports through other FHFA authorities, such as an order under 12 U.S.C. 4514. From time to time, FHFA may issue public guidance on reports.

**§§ 1293.33–1293.40 [Reserved]**

**Sandra L. Thompson,**

*Director, Federal Housing Finance Agency.*

[FR Doc. 2024–09559 Filed 5–15–24; 8:45 am]

**BILLING CODE 8070–01–P**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 25**

[Docket No. No. FAA–2021–1032; Special Conditions No. 25–854–SC]

**Special Conditions: Airbus Model A321neo XLR Airplanes; Flight Envelope Protection, Icing and Non-Icing Conditions; High Incidence Protection**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Airbus Model A321neo XLR airplane. This airplane will have a novel or unusual design feature when compared to the state of technology envisioned in the applicable airworthiness standards for transport category airplanes. This design feature is flight-envelope protections, in icing and non-icing conditions, that use high-incidence protection and an alpha-floor system to automatically advance throttles when the airplane angle of attack reaches a predetermined value. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** Effective June 17, 2024.

**FOR FURTHER INFORMATION CONTACT:** Troy Brown, Performance and Environment Unit, AIR–621A, Technical Policy Branch, Policy and Standards Division,

Aircraft Certification Service, Federal Aviation Administration, 1801 S Airport Rd., Wichita, KS 67209–2190; telephone and fax 405–666–1050; email *troy.a.brown@faa.gov*.

**SUPPLEMENTARY INFORMATION:**

**Background**

On September 16, 2019, Airbus applied for an amendment to Type Certificate No. A28NM to include the new Model A321neo XLR airplane. These airplanes are twin-engine, transport-category airplanes with seating for 244 passengers, and a maximum take-off weight of 222,000 pounds.

**Type Certification Basis**

Under the provisions of 14 CFR 21.101, Airbus must show that the Model A321neo XLR airplane meets the applicable provisions of the regulations listed in Type Certificate No. A28NM, or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (e.g., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Airbus Model A321neo XLR airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Airbus Model A321neo XLR airplane must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in § 11.19, in accordance with § 11.38, and they become part of the type certification basis under 14 CFR 21.101.

**Novel or Unusual Design Feature**

The Airbus Model A321neo XLR airplane will incorporate the following novel or unusual design feature:

Flight-envelope protections, in icing and non-icing conditions, that use high-incidence protection and an alpha-floor function to automatically advance throttles when the airplane angle of attack (AoA) reaches a predetermined value.

**Discussion**

The current airworthiness standards do not contain adequate safety standards for the high-incidence protection system and the alpha-floor system for the Airbus Model A321neo XLR series airplanes. This is because the FAA's current standards were designed for more traditional electronic flight control systems (EFCS), which involve less advanced envelope protections, such as stick shakers and pushers. These special conditions address the more advanced flight envelope protections, including icing and non-icing conditions, that are part of the EFCS design of the A321neo XLR airplane.

The high-incidence protection system prevents the airplane from stalling and, therefore, the stall warning system is not needed during normal flight conditions. However, during failure conditions which are not shown to be extremely improbable, the requirements of §§ 25.203 and 25.207 apply, although slightly modified by these conditions. If there are failures not shown to be extremely improbable, the flight characteristics at the angle-of-attack for  $C_{LMAX}$  must be suitable in the traditional sense, and stall warning must be provided in a conventional manner. These special conditions address the need for modification during icing conditions and non-icing conditions.

The alpha-floor function automatically advances the throttles on the operating engines under flight circumstances of low speed if the airplane reaches a predetermined high AoA. This function is intended to provide increased climb capability.

These special conditions address this novel or unusual design feature on the Airbus Model A321neo XLR and contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**Discussion of Comments**

The FAA issued Notice of Special Conditions No. 25–23–03–SC for the Airbus Model A321neo XLR airplane. They were published in the **Federal Register** on November 3, 2023 (88 FR 75513). The FAA received comments from Airbus Commercial Aircraft

(Airbus) and The Boeing Company (Boeing).

Boeing requested that the FAA add statements to sections (e)(1)(ii)(B) and (C) of the proposed special conditions regarding the demonstration of satisfactory lateral control at the aft stop and the consideration of rapid application of go-around power or thrust. Boeing requested these changes for consistency with the proposed regulatory material for § 25.202(d)(2) and (4) in the Flight Test Harmonization Working Group Phase 2 Rev A Final Report<sup>1</sup> (FTHWG Report). The FAA does not agree to this change. The FAA has previously published special conditions on this subject. The terms of those special conditions were consistent with the terms of these special conditions, and the FAA finds that they provide an adequate level of safety, *i.e.*, a level equivalent to the standards that, absent these special conditions, would otherwise be applicable.

Boeing recommended the FAA add “and emergency” to the proposed special conditions regarding the alpha-floor setting not interfering with normal maneuvering because this change would be consistent with proposed regulatory material for § 25.144(a) in the FTHWG Report. The FAA declines to make this change. This special condition only addresses the alpha-floor setting in normal maneuvering. The general limiting special conditions<sup>2</sup> for the A321neo XLR already include requirements for normal and emergency operations of all flight envelope protection functions, which include the alpha-floor function.

Boeing requested the FAA revise the deceleration rate in icing conditions in section (e)(1)(ii)(C)(2) of the proposed special conditions to 3 knots per second because this change would be consistent with the Airbus Model A350–900 Special Conditions No. 25–517–SC part I section 5.1(b)(3)(ii) and the proposed regulatory material for § 25.202(d)(4) in the FTHWG Report. The FAA does not concur with Boeing’s request because this change would not be appropriate for the design of the A321neo XLR. The XLR EFCS architecture is based on a previously certified architecture for the Airbus Model A321neo ACF. The A321neo ACF used a deceleration rate in icing conditions of 2 knots per second; therefore, using the same requirement for the A321neo XLR is

appropriate and provides an adequate (equivalent) level of safety.

Boeing requested the FAA revise section (e)(2)(i)(D) of the proposed special conditions related to buffeting to have the same requirement for icing and non-icing conditions, which Boeing said would also be consistent with 25–517–SC part II section 3(a)(2)(i) and the proposed regulatory material for 25.105(a)(2)(iii) in the FTHWG Report. Boeing stated that the requirement for icing conditions appears to indicate that buffet of a deterrent magnitude and severity would be acceptable for demonstration. The FAA does not concur with Boeing’s request. The FAA does not intend the buffeting requirement for icing conditions to allow deterrent buffet. The wording of these special conditions is appropriate because the magnitude of the buffet can be a driver in setting the protections while still requiring the airplane be free from excessive vibration and buffet. Therefore, these special conditions provide an adequate level of safety.

Boeing requested that the FAA remove all notes under section (j) of the proposed special conditions; the notes mention a tolerance for take-off and climb-out speeds in icing. Boeing stated that the tolerance in the notes appears to expand the allowable degradation in performance prior to calculating the icing effect and that the removal of the notes would align with previously released special conditions on this topic, such as 25–517–SC, and the recommendations in the FTHWG Report. The FAA does not concur with Boeing’s request. The A321neo XLR is a derivative of an airplane (A321neo ACF) initially certified with tolerances to account for ice effect on performance along the take-off path as well as at landing. In particular, it was not needed to account for icing if the ice effect on  $V_{min}1g$  was less than 5%/5kt. To reflect the intent of § 25.21(g) on airplanes for which § 25.21(g) is not applicable, Airbus has proposed a standard for the A321neo XLR consisting of the removal of the tolerance at landing and a reduced tolerance to 2.5%/2.5kt for take-off path. Airbus considers that the requirements of these special conditions provide an adequate level of safety based on the in-service performance of previous A321 models, and the FAA concurs.

Airbus, the applicant, requested the FAA revise the special condition that the FAA proposed would apply in lieu of § 25.121(d)(2)(ii). Airbus provided updated wording that replaced the text presented in the notice with text inspired by the FTHWG report recommendations. Airbus stated that

this text is comparable in intent to the text proposed by FAA in the notice but with an improved clarity thanks to a more modern wording, anticipating the future implementation of the FTHWG recommendations. The FAA concurs with this rationale and has modified the final special condition accordingly.

Boeing commented that the formatting of the proposed special conditions related to § 25.121 could lead to confusion as to which regulations were being addressed due to missing paragraph numbers. The FAA concurs and has updated the format of the final special conditions to clarify.

### Applicability

As discussed above, these special conditions are applicable to the Airbus Model A321neo XLR airplane. Should Airbus apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well.

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the **Federal Register**. However, as the certification date for the Airbus Model A321neo XLR is imminent, the FAA finds that good cause exists to make these special conditions effective upon publication.

### Conclusion

This action affects only certain novel or unusual design features on one model A321neo XLR airplane. It is not a rule of general applicability.

### List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

### Authority Citation

The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(f), 106(g), 40113, 44701, 44702, 44704.

### The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the Airbus Model A321neo XLR airplane.

In the following paragraphs, “In icing conditions” means with the ice accretions, relevant for the flight phase, as defined in part 25, appendix C.

### (a) Definitions

These special conditions address a novel or unusual design feature of the Airbus A321neo XLR and use

<sup>1</sup> [https://www.faa.gov/regulations\\_policies/rulemaking/committees/documents/media/09%20-%20FTHWG\\_Final\\_Report\\_Phase\\_2\\_RevA\\_Apr\\_2017.pdf](https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/09%20-%20FTHWG_Final_Report_Phase_2_RevA_Apr_2017.pdf).

<sup>2</sup> 88 FR 12133 (Feb. 27, 2023).

terminology that does not appear in part 25. For the purpose of these special conditions, the following terms describe certain aspects of this novel or unusual design feature:

*High-Incidence Protection System Angle-of-Attack Limiting Function*

A system that operates directly and automatically on the airplane's flying controls to limit the maximum AoA that can be attained to a value below that at which an aerodynamic stall would occur.

*Alpha-Floor System*

A system that automatically increases thrust on the operating engines when AoA increases through a particular value.

*Alpha Limit*

The maximum angle of attack at which the airplane stabilizes with the high-incidence protection system operating and the longitudinal control held on its aft stop.

*V<sub>CLmax</sub>*

An airspeed calculated from a variety of factors, including load factor normal to the flight path at V<sub>CLmax</sub>, airplane gross weight, aerodynamic reference wing area, and dynamic pressure.

*V<sub>min</sub>*

The minimum steady flight speed in the airplane configuration under consideration with the high-incidence protection system operating.

*V<sub>min1g</sub>*

V<sub>min</sub> corrected to 1g conditions. This is the minimum calibrated airspeed at

which the airplane can develop a lift force normal to the flight path and equal to its weight when at an angle of attack not greater than that determined for V<sub>min</sub>.

**(b) Capability and Reliability of the High-Incidence Protection System**

Acceptable capability and reliability of the high-incidence protection system can be established by flight test, simulation, and analysis, as appropriate. The capability and reliability required are as follows:

(1) It must not be possible, during pilot-induced maneuvers, to encounter a stall; and handling characteristics must be acceptable, as required by section (e) of these Special Conditions.

(2) The airplane must be protected against stalling due to the effects of wind-shears and gusts at low speeds as required by section (f) of these Special Conditions.

(3) The ability of the high-incidence protection system to accommodate any reduction in stalling incidence must be verified in icing conditions.

(4) The high-incidence protection system must be provided in each abnormal configuration of the high-lift devices that are likely to be used in-flight following system failures.

(5) The reliability of the system and the effects of failures must be acceptable in accordance with § 25.1309.

**(c) Minimum Steady Flight Speed and Reference Stall Speed**

In lieu of § 25.103, "Stall speed", the following requirements apply:

(1) The minimum steady flight speed, V<sub>min</sub>, is the final stabilized calibrated

airspeed obtained when the airplane is decelerated until the longitudinal control is on its stop in such a way that the entry rate does not exceed 1 knot per second.

(2) The minimum steady flight speed, V<sub>min</sub>, must be determined in icing and non-icing conditions with:

(i) The high-incidence protection system operating normally;

(ii) Idle thrust and alpha-floor system inhibited;

(iii) All combinations of flaps setting and landing gear position for which V<sub>min</sub> is required to be determined;

(iv) The weight used when the reference stall speed, V<sub>SR</sub>, is being used as a factor to determine compliance with a required performance standard;

(v) The most unfavorable center of gravity allowable; and

(vi) The airplane trimmed for straight flight at a speed achievable by the automatic trim system.

(3) The 1g minimum steady flight speed, V<sub>min1g</sub>, is the minimum calibrated airspeed at which the airplane can develop a lift force normal to the flight path and equal to its weight, while at an angle of attack not greater than that at which the minimum steady flight speed of condition 3(a), above, was determined. It must be determined in icing and non-icing conditions.

(4) The reference stall speed, V<sub>SR</sub>, is a calibrated airspeed the applicant defines. V<sub>SR</sub> may not be less than a 1g stall speed. V<sub>SR</sub> must be determined in non-icing conditions and expressed as:

$$V_{SR} \geq \frac{V_{CLMAX}}{\sqrt{n_{zw}}}$$

Where:

V<sub>CLmax</sub> = the calibrated airspeed obtained when the load factor corrected lift coefficient (n<sub>zw</sub> W/qS) is first a maximum during the maneuver prescribed in condition (c)(5)(viii) of these Special Conditions;

n<sub>zw</sub> = Load factor normal to the flight path at V<sub>CLmax</sub>;

W = Airplane gross weight;

S = Aerodynamic reference wing area; and

q = Dynamic pressure.

(5) V<sub>CLmax</sub> is determined in non-icing conditions with:

(i) Engines idling, or, if that resultant thrust causes an appreciable decrease in stall speed, not more than zero thrust at the stall speed;

(ii) The airplane in other respects (such as flaps and landing gear) in the condition existing in the test or performance standard in which V<sub>SR</sub> is being used;

(iii) The weight used when V<sub>SR</sub> is being used as a factor to determine compliance with a required performance standard;

(iv) The center of gravity position that results in the highest value of reference stall speed;

(v) The airplane trimmed for straight flight at a speed achievable by the automatic trim system, but not less than 1.13 V<sub>SR</sub> and not greater than 1.3 V<sub>SR</sub>;

(vi) Alpha-floor system inhibited; and

(vii) The high-incidence protection system adjusted, at the option of the applicant, to allow higher incidence than is possible with the normal production system.

(viii) Starting from the stabilized trim condition, apply the longitudinal control to decelerate the airplane so that the speed reduction does not exceed 1 knot per second.

**(d) Stall Warning**

In lieu of § 25.207, the following requirements apply:

*(1) Normal Operation*

If the design meets all conditions of section (b) of these special conditions,

then the airplane need not provide stall warning during normal operation. The conditions of Part I, section 2 provide a level of safety equal to the intent of § 25.207, "Stall warning," so the provision of an additional, unique warning device for normal operations is not required.

*(2) High-Incidence Protection System Failure*

(i) In non-icing conditions, for any failures of the high-incidence protection system that the applicant cannot show to be extremely improbable, such that the capability of the system no longer satisfies conditions (b)(1), (2), and (3) of these Special Conditions, stall warning must be provided in accordance with § 25.207(a), (b), and (f).

(ii) In icing conditions, after a failure leading to the loss of the high-incidence protection system, a safety margin not less than 3 percent or 3 knots between stall warning and stall must be maintained.

**(e) Handling Characteristics at High Incidence**

*(1) High Incidence Handling Demonstrations*

In lieu of § 25.201, High-incidence handling demonstration in icing and non-icing conditions:

(i) Maneuvers to the limit of the longitudinal control, in the nose-up sense, must be demonstrated in straight flight and in 30-degree banked turns with:

(A) The high-incidence protection system operating normally;

(B) Initial power conditions of:

(1) Power off; and

(2) The power necessary to maintain level flight at  $1.5 V_{SR1}$ , where  $V_{SR1}$  is the reference stall speed with flaps in approach position, the landing gear retracted, and maximum landing weight;

(C) Alpha-floor system operating normally unless more severe conditions are achieved with inhibited alpha floor;

(D) Flaps, landing gear, and deceleration devices in any likely combination of position;

(E) Representative weights within the range for which certification is requested; and

(F) The airplane trimmed for straight flight at a speed achievable by the automatic trim system.

(ii) The following procedures must be used to show compliance in non-icing and icing conditions:

(A) Starting at a speed sufficiently above the minimum steady flight speed to ensure that a steady rate of speed reduction can be established, apply the

longitudinal control so that the speed reduction does not exceed 1 knot per second until the control reaches the stop.

(B) The longitudinal control must be maintained at the stop until the airplane has reached a stabilized flight condition, and must then be recovered through normal recovery techniques.

(C) Maneuvers with increased deceleration rates:

(1) In non-icing conditions, the requirements must also be met with increased rates of entry to the incidence limit, up to the maximum rate achievable.

(2) In icing conditions, with the anti-ice system working normally, the requirements must also be met with increased rates of entry to the incidence limit up to 2 knots per second.

(D) Maneuvers with ice accretion prior to operation of the normal anti-ice system: With the ice accretion prior to operation of the normal anti-ice system, the requirement must also be met in deceleration at 1 knot per second up to full back stick maintained for at least 3 seconds before normal recovery is performed (requirement to be met with and without alpha floor operating).

*(2) Characteristics in High-Incidence Maneuvers*

In lieu of § 25.203, Characteristics in High Incidence.

In icing and non-icing conditions:

(i) Throughout maneuvers with a rate of deceleration of not more than 1 knot per second, both in straight flight and in 30-degree banked turns, the airplane's characteristics must be as follows:

(A) The airplane must not exhibit abnormal nose-up pitching.

(B) The airplane must not exhibit uncommanded nose-down pitching, which would be indicative of stall. However, reasonable attitude changes associated with stabilizing the incidence at alpha limit, as the longitudinal control reaches the stop, would be acceptable.

(C) The airplane must not exhibit uncommanded lateral or directional motion, and the pilot must retain good lateral and directional control through conventional use of the controls, throughout the maneuver.

(D) Buffeting:

(1) In non-icing conditions, the airplane must not exhibit buffeting of a magnitude and severity that would act as a deterrent from completing the maneuver specified in condition (e)(1)(i) of these Special Conditions.

(2) In icing conditions, the airplane may exhibit buffeting of a stronger magnitude and severity than in non-icing conditions, provided that the

airplane is demonstrated to be free from excessive vibration and buffeting over the range of speeds adequate for normal operation.

(ii) In maneuvers with increased rates of deceleration, some degradation of characteristics is acceptable, associated with a transient excursion beyond the stabilized alpha limit. However, the airplane must not exhibit dangerous characteristics, nor characteristics that would deter the pilot from holding the longitudinal control on the stop for a period of time appropriate to the maneuver.

(iii) The pilot must always be able to reduce incidence through conventional use of the controls.

(iv) The rate at which the airplane can be maneuvered from trim speeds associated with scheduled operating speeds such as  $V_2$  and  $V_{ref}$ , up to alpha limit, must not be unduly damped or be significantly slower than can be achieved on conventionally controlled transport airplanes.

*(3) Characteristics up to  $V_{CLmax}$*

Maneuvers with a rate of deceleration of not more than 1 knot per second, up to the angle of attack at which  $V_{CLmax}$  was obtained as defined in section (c) of these Special Conditions, must be demonstrated in straight flight and in 30-degree banked turns with:

(i) The high-incidence protection system deactivated or adjusted, at the option of the applicant, to allow higher incidence than is possible with the normal production system,

(ii) Alpha-floor system inhibited,

(iii) Engines idling,

(iv) Flaps and landing gear in any likely combination of positions, and

(v) The airplane trimmed for straight flight at a speed achievable by the automatic trim system.

During such maneuvers, the airplane must not exhibit dangerous characteristics and the pilot must always be able to reduce angle of attack by conventional use of the controls. The pilot must retain good lateral and directional control, by conventional use of the controls, throughout the maneuver.

**(f) Atmospheric Disturbances**

Operation of the high-incidence protection system must not adversely affect airplane control during expected levels of atmospheric disturbances, nor impede the application of recovery procedures in case of wind shear. This must be demonstrated in non-icing conditions only, and must allow for drawing conclusion for icing conditions without further demonstration.

**(g) Alpha Floor**

In icing and non-icing conditions, the alpha-floor setting must be such that the airplane can be flown at the speeds and bank angles specified in § 25.143(h). The applicant also must show that the alpha-floor setting does not interfere with normal maneuvering of the airplane. In addition, the airplane must exhibit no alpha-floor triggering unless appropriate when the airplane is flown in usual operational maneuvers and in turbulence.

**(h) Proof of Compliance**

In addition to the requirements in § 25.21(b), the following requirement applies:

The flying qualities will be evaluated at the most unfavorable center-of-gravity (CG) position.

**(i) Speed Associated With Other Requirements**

The design must meet the following modified requirements:

(1) Section 25.145(a):  $V_{min}$  in lieu of “stall identification.”

(2) Section 25.145(b):  $V_{min}$  in lieu of  $V_{sw}$ .

(3) Section 25.1323(d): “From 1.23  $V_{SR}$  to  $V_{min}$ ” in lieu of “1.23  $V_{SR}$  to stall warning speed” and “speeds below  $V_{min}$ ” in lieu of “speeds below stall warning.”

**(j) Performance in Icing Conditions****(1) Take-Off**

In lieu of compliance with § 25.105(a)(2)(i), the following special conditions apply:

(a) In icing conditions, if in the configuration used in showing compliance with § 25.121(b), and with the most critical of the “Take-off Ice” accretion(s) defined in 14 CFR part 25, appendix C:

(i) The  $V_2$  speed scheduled in non-icing conditions does not provide the maneuvering capability specified in § 25.143(h) for the take-off configuration.

**Note:** This requirement does not apply if the  $V_{min}1g$  is increased in icing conditions, with the “Take-off Ice” accretion defined in 14 CFR part 25, appendix C, by less than 2.5 knots or 2.5 percent, whichever is greater.

**(2) Climb: One-Engine Inoperative**

In lieu of compliance with § 25.121(b)(2)(ii)(A), the following special conditions apply:

(a) In icing conditions, with the most critical of the take-off ice accretion(s) defined in 14 CFR part 25, appendix C, if in the configuration used to show compliance with § 25.121(b) with this take-off ice accretion:

(i) The  $V_2$  speed scheduled in non-icing conditions does not provide the

maneuvering capability specified in § 25.143(h), for the take-off configuration.

**Note:** This requirement does not apply if the  $V_{min}1g$  is increased in icing conditions, with the “Take-off Ice” accretion defined in 14 CFR part 25, appendix C, by less than 2.5 knots or 2.5 percent, whichever is greater.

In lieu of compliance with § 25.121(c)(2)(ii)(A) and (B), the following special conditions apply:

(b) In icing conditions, with the most critical of the final take-off ice accretion(s) defined in 14 CFR part 25, appendix C, if in the configuration used to show compliance with § 25.121(b)

with the take-off ice accretion used to show compliance with § 25.111(c)(5)(i):

(i) The  $V_{FTO}$  (final take-off speed) scheduled in non-icing conditions does not provide the maneuvering capability, specified in § 25.143(h), for the en-route configuration.

**Note:** This requirement does not apply if the  $V_{min}1g$  is increased in icing conditions, with the “Final Take-off Ice” accretion defined in 14 CFR part 25, appendix C, by less than 2.5 knots or 2.5 percent, whichever is greater.

(ii) The degradation of the gradient of climb, determined in accordance with § 25.121(b), with the take-off ice accretion used in showing compliance with § 25.111(c)(5)(i), is greater than one-half of the applicable actual-to-net take-off flight path gradient reduction defined in § 25.115(b).

In lieu of compliance with 25.121(d)(2)(ii), the following special conditions apply:

(c) In icing conditions, with the most critical of the approach ice accretion(s) defined in 14 CFR part 25, appendix C, as applicable,

(i) The climb speed selected for non-icing conditions may be used if the climb speed for icing conditions, computed in accordance with § 25.121(d)(3), does not exceed that for non-icing conditions by more than the greater of 3 knots CAS or 3 percent; or,

(ii) The climb speed established with normal landing procedures, but not more than 1.4  $V_{SR}$  ( $V_{SR}$  determined in non-icing conditions), may be used if in a configuration corresponding to the normal all-engines-operating procedure where the  $V_{min}1g$  for this configuration does not exceed 110 percent of the  $V_{min}1g$  for the related all-engines-operating landing configuration in icing conditions.

(3) *En-Route Flight Paths*

In lieu of compliance with 25.123(b)(2)(i), the following special conditions apply:

(a) In icing conditions with the most critical of the en-route ice accretion(s)

defined in 14 CFR part 25, appendix C, if:

(i) The  $V_{FTO}$  speed scheduled in non-icing conditions does not provide the maneuvering capability, specified in § 25.143(h), for the en-route configuration.

Issued in Kansas City, Missouri, on May 10, 2024.

**Patrick R. Mullen,**

*Manager, Technical Innovation Policy Branch, Policy and Innovation Division, Aircraft Certification Service.*

[FR Doc. 2024–10646 Filed 5–15–24; 8:45 am]

**BILLING CODE 4910–13–P**

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. FAA–2023–2137; Project Identifier MCAI–2022–01389–T; Amendment 39–22737; AD 2024–08–04]

**RIN 2120–AA64**

**Airworthiness Directives; De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all De Havilland Aircraft of Canada Limited Model DHC–8–401 and –402 airplanes. This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary. This AD requires revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective June 20, 2024.

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA–2023–2137; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.