the airplane and occupants. Previously certified non-rechargeable lithium battery installations, as used in this paragraph, are those installations approved for certification projects applied for on or before the effective date of these special conditions. A cosmetic change is a change in appearance only, and does not change any function or safety characteristic of the battery installation. These special conditions are also not applicable to unchanged, previously certified non-rechargeable lithium battery installations that are affected by a change in a manner that improves the safety of its installation. The FAA determined that these exclusions are in the public interest because the need to meet all of the special conditions might otherwise deter these design changes that improve safety.

Conclusion

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

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and record keeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 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 Dassault Model Falcon 5X airplane.

Non-Rechargeable Lithium Battery Installations

In lieu of § 25.1353(b)(1) through (4) at Amendment 25–123, each non-rechargeable lithium battery installation must:

1. Be designed to maintain safe cell temperatures and pressures under all foreseeable operating conditions to prevent fire and explosion.

2. Be designed to prevent the occurrence of self-sustaining, uncontrollable increases in temperature or pressure.

3. Not emit explosive or toxic gases, either in normal operation or as a result of its failure, that may accumulate in hazardous quantities within the airplane.

4. Meet the requirements of § 25.863.

5. Not damage surrounding structure or adjacent systems, equipment, or electrical wiring from corrosive fluids or gases that may escape in such a way as to cause a major or more severe failure condition.

6. Have provisions to prevent any hazardous effect on airplane structure or systems caused by the maximum amount of heat it can generate due to any failure of it or its individual cells.

7. Have a failure sensing and warning system to alert the flightcrew if its failure affects safe operation of the airplane.

8. Have a means for the flightcrew or maintenance personnel to determine the battery charge state if the battery's function is required for safe operation of the airplane.

Note: A battery system consists of the battery and any protective, monitoring, and alerting circuitry or hardware inside or outside of the battery. It also includes vents (where necessary) and packaging. For the purpose of these special conditions, a ''battery'' and ''battery system'' are referred to as a battery.

Issued in Renton, Washington, on January 9, 2018.

Victor Wicklund,

Manager, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service.

[FR Doc. 2018–00548 Filed 1–12–18; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2017–0482; Special Conditions No. 25–709–SC]

Special Conditions: Airbus Model A330–841 and A330–941 New Engine Option (A330neo) Airplanes; Use of High-Incidence Protection and Alpha-Floor Systems

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Airbus Model A330–841 and A330–941 New Engine Option (A330neo) airplanes. These airplanes will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport-category airplanes. This design feature is a high-incidence protection system that limits the angle of attack (AOA) at which the airplane can be flown during normal low-speed operations, and that the flightcrew cannot override. 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: This action is effective on Airbus on January 16, 2018. Send your comments by March 2, 2018.

ADDRESSES: Send comments identified by docket number FAA–2017–0482 using any of the following methods:

- *Federal eRegulations Portal:* Go to *http://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 SE, 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 SE, 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.

Privacy: The FAA will post all comments it receives, without change, to *http://www.regulations.gov/,* including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477–19478).

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

FOR FURTHER INFORMATION CONTACT: Joe Jacobsen, FAA, Airplane and Flight Crew Interface Section, AIR–671, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service, 1601 Lind Avenue SW, Renton, Washington 98057–3356; telephone 425–227–2011; facsimile 425–227–1320.

SUPPLEMENTARY INFORMATION: These special conditions are derived from special conditions of the same topic for the Airbus Model A380 airplane (Special Conditions No. 25–316–SC). The substance of these special conditions has been published in the **Federal Register** for public comment in several prior instances. The FAA therefore finds it unnecessary to delay the effective date, and finds that good cause exists for making these special conditions effective upon publication in the **Federal Register**.

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive by the closing date for comments. We may change these special conditions based on the comments we receive.

Background

On January 20, 2015, Airbus applied for an amendment to Type Certificate no. A46NM to include the new Model A330–841 and A330–941 New Engine Option airplanes, collectively marketed as Model A330neo airplanes. These airplanes, which are derivatives of the Model A330–200 and A330–300 airplanes currently approved under Type Certificate No. A46NM, are wide-body, jet-engine airplanes with a maximum takeoff weight of 533,519 pounds, and a passenger capacity of 257 (A330–841); or a maximum takeoff weight of 535,503 pounds, and a passenger capacity of 287 (A330–941).

Type Certification Basis

Under the provisions of § 21.101, Airbus must show that the Model A330neo airplanes meet the applicable provisions of the regulations listed in Type Certificate No. A46NM, or the applicable regulations in effect on the date of application for the change except for earlier amendments as agreed upon by the FAA.

For the high-incidence protection system, Airbus will not meet the latest standards, as outlined in the Airbus Model A350 airplane special conditions (Special Conditions No. 25–517–SC). However, in accordance with § 21.101, Airbus has agreed to meet improved standards relative to the original Airbus Model A330 airplane certification basis corresponding to Airbus Model A380 airplane standards.

If the Administrator finds that the applicable airworthiness regulations (*i.e.,* title 14, Code of Federal Regulations (14 CFR) part 25) do not contain adequate or appropriate safety standards for Model A330neo 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 Model A330neo airplanes 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 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.101.

Novel or Unusual Design Features

The Airbus Model A330neo airplanes will incorporate the following novel or unusual design features:

A high-incidence protection system that limits the angle of attack at which the airplane can be flown during normal low-speed operations, and that the flightcrew cannot override.

Discussion

The application of this high-incidence protection system, which limits the airplane's AOA, impacts the longitudinal airplane handling characteristics. In addition, 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.

The high-incidence protection system prevents the airplane from stalling and, therefore, the stall-warning system is not needed during normal flight conditions. If there is a failure of this system that is not shown to be extremely improbable, the flight characteristics at the AOA for lift coefficient CL_{max} (an airspeed calculated from a variety of factors; see item 1.f. in these special conditions) must be suitable in the traditional sense, and stall warning must be provided in a conventional manner.

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.

Applicability

As discussed above, these special conditions are applicable to the Airbus Model A330–841 and A330–941 (A330neo) airplanes. 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.

Conclusion

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

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 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 Airbus Model A330–841 and A330–941 (A330neo) airplanes.

1. Definitions: The following definitions apply for terminology that does not appear in 14 CFR part 25:

a. High-Incidence Protection System: A system that operates directly and automatically on the airplane's flying controls to limit the maximum incidence that can be attained to a value below that at which an aerodynamic stall would occur.

b. Alpha-Floor System: A system that automatically increases thrust on the operating engines when incidence increases through a particular value.

c. Alpha limit: The maximum steady incidence at which the airplane stabilizes with the high-incidence protection system operating and the longitudinal control held on its aft stop.

d. V_{min}: The minimum steady flight speed, for the airplane configuration under consideration and with the high-incidence protection system operating, is the final, stabilized, calibrated

airspeed obtained when the airplane is decelerated at an entry rate not exceeding 1 knot per second until the longitudinal pilot controller is on its stop.

e. $V_{min}1g$: V_{min} corrected to 1g conditions. It 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 AOA not greater than that determined for V_{min}.

f. V_{CLmax}: An airspeed calculated from a variety of factors including load factor normal to the flight path at V_{CLmax}, airplane gross weight, aerodynamic reference wing area, and dynamic pressure.

2. Capability and Reliability of the High-Incidence Protection System: These special conditions are in lieu of 14 CFR 25.103, 25.145, 25.201, 25.203, 25.207, and 25.1323, provided that 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:

a. It must not be possible during pilot-induced maneuvers to encounter a stall, and handling characteristics must be acceptable, as required by condition 5 of these special conditions.

b. The airplane must be protected against stalling due to the effects of wind shears and gusts at low speeds, as required by condition 6 of these special conditions.

c. The ability of the high-incidence protection system to accommodate any reduction in stalling incidence resulting from residual ice must be verified.

d. The reliability of the system and the effects of failures must be acceptable in accordance with § 25.1309 and the associated policy.

3. Minimum Steady Flight Speed and Reference Stall Speed: In lieu of § 25.103, the following requirements apply:

a. V_{min}: The minimum steady flight speed, for the airplane configuration under consideration and with the high-incidence protection system operating, is the final, stabilized, calibrated airspeed obtained when the airplane is decelerated at an entry rate not exceeding 1 knot per second until the longitudinal control is on its stop.

b. The minimum steady flight speed, V_{min}, must be determined with:

i. The high-incidence protection system operating normally.

ii. Idle thrust.

iii. Alpha-Floor System inhibited.

iv. All combinations of flap settings and landing gear positions.

v. The weight used when V_{SR} is being used as a factor to determine compliance with a required performance standard.

vi. The most unfavorable center of gravity (CG) allowable, and

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

c. $V_{min}1g$: V_{min} corrected to 1g conditions. It is the minimum calibrated airspeed at which the airplane can develop a lift force normal to the flight path and equal to the weight of the airplane when at an AOA not greater than that determined for V_{min}. $V_{min}1g$ is defined as follows:

$$V\,\min 1g = \frac{V\,\min}{\sqrt{n_{zw}}}$$

Where

n_{zw} = load factor normal to the flight path at V_{min}

d. The Reference Stall Speed, V_{SR}, is a calibrated airspeed defined by the applicant. V_{SR} may not be less than a 1g stall speed. V_{SR} is expressed as:

$$V_{SR} \geq \frac{V_{CL\,MAX}}{\sqrt{n_{zw}}}$$

Where

V_{CLmax} = Calibrated airspeed obtained when the load-factor-corrected lift coefficient

$$\left(\frac{n_{zw}W}{qS}\right)$$

is first a maximum during the maneuver prescribed in condition (3)(e)(viii) of these special conditions.

n_{zw} = Load factor normal to the flight path at V_{CLmax}

W = Airplane gross weight;

S = Aerodynamic reference wing area; and

q = Dynamic pressure.

Note: Unless AOA protection-system (stall warning and stall identification) production tolerances are acceptably small, so as to produce insignificant changes in performance determinations, the flight-test settings for stall warning and stall identification should be set at the low AOA tolerance limit; high AOA tolerance limits should be used for characteristics evaluations.

e. V_{CLmax} must be determined with the following conditions:

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_{SR} is being used.

iii. The weight used when V_{SR} is being used as a factor to determine compliance with a required performance standard.

iv. The CG 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_{SR} and not greater than 1.3 V_{SR}.

vi. The Alpha-Floor System inhibited.

vii. The high-incidence protection system adjusted to a high enough incidence to allow full development of the 1g stall.

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

f. The flight characteristics at the AOA for CL_{max} must be suitable in the traditional sense at forward (FWD) and aft (AFT) CG in straight and turning flight at IDLE power. Although for a normal production Electronic Flight Control System (EFCS) and steady full aft stick, this AOA for CL_{max} cannot be achieved. The AOA can be obtained momentarily under dynamic circumstances, and deliberately in a steady-state sense, with some EFCS failure conditions.

4. Stall Warning:

In lieu of § 25.207, the following requirements apply:

a. *Normal Operation:* If the items in condition 2, above, are satisfied, equivalent safety to the intent of § 25.207, Stall Warning, must be considered to have been met without provision of an additional, unique warning device.

b. *Failure Cases:* Following failures of the high-incidence protection system not shown to be extremely improbable, if the system no longer satisfies items in conditions 2. a., b., and c., stall warning must be provided in accordance with § 25.207. The stall warning should prevent inadvertent stall in the following conditions:

i. Power off straight stall approaches to a speed 5 percent below the warning onset.

ii. Turning-flight stall approaches at entry rates up to 3 knots per second when recovery is initiated not less than 1 second after the warning onset.

5. Handling Characteristics at High Incidence:

a. High-Incidence Handling Demonstrations: In lieu of § 25.201, the following requirements apply:

i. Maneuvers to the limit of the longitudinal control, in the nose-up direction, must be demonstrated in

straight flight and in 30-degree banked turns with:

1. The high-incidence protection system operating normally.

2. Initial power condition of:

a. Power off

b. The power necessary to maintain level flight at 1.5 V_{SR1}, where V_{SR1} is the reference stall speed with the flaps in the approach position, the landing gear retracted, and the maximum landing weight. The flap position to be used in determining this power setting is that position in which the stall speed, V_{SR1}, does not exceed 110 percent of the stall speed, V_{SR0}, with the flaps in the most extended landing position.

3. Alpha-Floor System operating normally, unless more severe conditions are achieved with Alpha floor inhibited.

4. Flaps, landing gear, and deceleration devices in any likely combination of positions.

5. Representative weights within the range for which certification is requested, and

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

b. The following procedures must be used to show compliance with these special conditions:

i. 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.

ii. The longitudinal control must be maintained at its stop until the airplane has reached a stabilized flight condition, and must then be recovered by normal recovery techniques.

iii. The requirements for turning-flight maneuver demonstrations must also be met with accelerated rates of entry to the incidence limit, up to the maximum rate achievable.

c. Characteristics in High Incidence Maneuvers: In lieu of § 25.203, the following requirements apply:

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:

1. There must not be any abnormal airplane nose-up pitching.

2. There must not be any 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 its stop, would be acceptable. Any reduction of pitch attitude associated with stabilizing the incidence at the Alpha limit should be achieved smoothly and at a low pitch rate, such that it is not likely to be mistaken for natural-stall identification.

3. There must not be any uncommanded lateral or directional motion, and the pilot must retain good lateral and directional control by conventional use of the cockpit controllers throughout the maneuver.

4. The airplane must not exhibit buffeting of a magnitude and severity that would act as a deterrent to completing the maneuver specified in § 25.201(a), as amended by this special condition.

ii. In maneuvers with increased rates of deceleration, some degradation of characteristics, associated with a transient excursion beyond the stabilized Alpha limit, is acceptable. However, the airplane must not exhibit dangerous characteristics or characteristics that would deter the pilot from holding the longitudinal controller on its stop for a period of time appropriate to the maneuvers.

iii. It must always be possible to reduce incidence by conventional use of the controller.

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 significantly slower than can be achieved on conventionally controlled transport airplanes.

6. 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 and icing conditions.

7. Alpha Floor: The Alpha-floor setting must be such that the airplane can be flown at normal landing operational speed, and maneuvered up to bank angles consistent with the flight phase (including the maneuver capabilities specified in § 25.143(g)), without triggering Alpha floor. In addition, there must be no Alpha-floor triggering unless appropriate when the airplane is flown in usual operational maneuvers and in turbulence.

8. Proof of Compliance: Change § 25.21 as follows:

Section 25.21(b)—The flying qualities must be evaluated at the most unfavorable CG position.

9. For §§ 25.145(a), 25.145(a), and 25.145(b)(6), the following requirements apply:

a. Section 25.145(a)—It must be possible, at any point between the trim speed prescribed in § 25.103(b)(7) as amended by this special condition and V_{min}, to pitch the nose downward so that the acceleration to this selected trim speed is prompt with—

b. Section 25.145(a)(1)—The airplane trimmed at the trim speed prescribed in § 25.103(b)(7) as amended by this special condition.

c. Section 25.145(b)(6)—With power off, flaps extended and the airplane trimmed at 1.3 V_{SR1}, obtain and maintain airspeeds between V_{min} and either $1.6V_{SR1}$ or V_{FE}, whichever is lower.

10. In lieu of § 25.1323(d), the following requirement applies:

(d) From 1.23 VSR to V_{min}, the IAS must change perceptibly with CAS and in the same sense, and at speeds below V_{min} speed the IAS must not change in an incorrect sense.

Issued in Renton, Washington, on January 9, 2018.

Victor Wicklund,

Manager, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service.

[FR Doc. 2018–00546 Filed 1–12–18; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2015–4279; Special Conditions No. 25–612–SC]

Special Conditions: Gulfstream Aerospace Corporation, Gulfstream GVI Airplane; Non-Rechargeable Lithium Battery Installations

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; correction.

SUMMARY: This document corrects errors that appeared in Docket No. FAA–2015–4279, Special Conditions No. 25–612–SC, which was published in the **Federal Register** on April 22, 2016. The errors are incorrect title 14, Code of Federal Regulations section citations in two locations in the final special conditions document.

DATES: The effective date of this correction is January 16, 2018.

FOR FURTHER INFORMATION CONTACT: Nazih Khaouly, Airplane and Flight Crew Interface Section, AIR–671, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service, 1601 Lind Avenue SW, Renton, Washington 98057–3356;