the anonymous comment is beyond the scope of this special condition, and is already accounted for and considered in the basic regulatory-compliance process.

Applicability

As discussed above, these special conditions apply to Airbus Model A350–900 airplanes. Should Airbus apply later for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features on Airbus Model A350–900 series 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 A350–900 series airplanes.

In addition to § 25.143, the following requirements apply: Operation of the high-speed limiter during all routine and descent-procedure flight must not impede normal attainment of speeds up to overspeed warning.

Issued in Renton, Washington, on August 15, 2014.

Jeffrey E. Duven,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2014–19822 Filed 8–20–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2013–1001; Special Conditions No. 25–535–SC]

Special Conditions: Airbus Model A350–900 Airplanes; High-Speed Protection System

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for Airbus Model A350–900 airplanes. These airplanes will have a novel or unusual design feature associated with a high-speed protection system that limits nose-down pilot authority at speeds above V_C/M_C, and prevents the airplane from performing the maneuver required under the Code of Federal Regulations. 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 date:* September 22, 2014.

FOR FURTHER INFORMATION CONTACT: Todd Martin, FAA, Airframe/Cabin Safety, ANM–115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98057–3356; telephone (425) 227–1178; facsimile (425) 227–1322.

SUPPLEMENTARY INFORMATION:

Background

On August 25, 2008, Airbus applied for a type certificate for their new Model A350–900 airplane. Later, Airbus requested, and the FAA approved, an extension to the application for FAA type certification to November 15, 2009. The Model A350–900 airplane has a conventional layout with twin wing-mounted Rolls-Royce Trent XWB engines. It features a twin-aisle, 9-abreast, economy-class layout, and accommodates side-by-side placement of LD–3 containers in the cargo compartment. The basic Model A350–900 airplane configuration accommodates 315 passengers in a standard two-class arrangement. The design cruise speed is Mach 0.85 with a maximum take-off weight of 602,000 lbs.

The Model A350–900 airplane, like Airbus Model A320, A330, A340 and A380 series airplanes, has a high-speed protection system that limits nose-down pilot authority at speeds above V_C/M_C, and prevents the airplane from actually performing the maneuver required under § 25.335(b)(1). Special conditions are necessary to address the Model A350–900 airplane high-speed protection system. These special conditions identify various symmetric and non-symmetric maneuvers that will ensure that an appropriate design dive speed, V_D/M_D, is established.

Type Certification Basis

Under Title 14, Code of Federal Regulations (14 CFR) 21.17, Airbus must show that the Model A350–900 airplane meets the applicable provisions of part 25, as amended by Amendments 25–1 through 25–129.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Model A350–900 airplane 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 or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Model A350–900 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 must issue a finding of regulatory adequacy under section 611 of Public Law 92–574, the ''Noise Control Act of 1972.''

The FAA issues special conditions, as defined in 14 CFR 11.19, under § 11.38, and they become part of the type-certification basis under § 21.17(a)(2).

Novel or Unusual Design Features

In addition to the applicable airworthiness regulations and special conditions, the Model A350–900 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 must issue a finding of regulatory adequacy under § 611 of Public Law 92–574, the ''Noise Control Act of 1972.''

The Airbus Model A350–900 airplane will incorporate the following novel or unusual design features:

A high-speed protection system that limits nose-down pilot authority at speeds above V_C/M_C, and prevents the airplane from actually performing the maneuver required under § 25.335(b)(1). The special conditions identify various symmetric and non-symmetric maneuvers that will ensure that an appropriate design dive speed, V_D/M_D, is established.

Discussion

Section 25.335(b)(1) is an analytical envelope condition originally adopted in Part 4b of the Civil Air Regulations to provide an acceptable speed margin between design cruise speed and design dive speed. Flutter-clearance design speeds and airframe design loads are impacted by the design dive speed. While the initial condition for the upset specified in the rule is 1g level flight, protection is afforded for other inadvertent overspeed conditions as well. Section 25.335(b)(1) is intended as a conservative enveloping condition for potential overspeed conditions, including non-symmetric conditions.

To establish that potential overspeed conditions are enveloped, Airbus should demonstrate that any reduced speed margin, based on the high-speed protection system in the Model A350–900 airplane, will not be exceeded in inadvertent, or gust-induced, upsets resulting in initiation of the dive from non-symmetric attitudes; or that the airplane is protected, by the flight-control laws, from getting into non-symmetric upset conditions. The special conditions identify various symmetric and non-symmetric maneuvers that will ensure that an appropriate design dive speed, V_D/M_D, is established.

These special conditions are in lieu of § 25.335(b)(1). Section 25.335(b)(2), which also addresses the design dive speed, is applied separately (Advisory Circular (AC) 25.335–1A provides an acceptable means of compliance to § 25.335(b)(2)). The applicant should conduct a demonstration that includes a comprehensive set of conditions, as described below.

Special conditions (3) and (4) indicate that failures of the high-speed protection system must be improbable and must be annunciated to the pilots. If these two criteria are not met, then the probability that the established dive speed will be exceeded, and the resulting risk to the airplane, is too great. On the other hand, if the high-speed protection system is known to be inoperative, then dispatch of the airplane could be acceptable under an approved minimum-equipment list (MEL) containing language similar to special condition (5). Dispatch under an MEL would require that appropriate reduced operating speeds, V_{MO}/M_{MO}, are provided in the airplane flight manual (AFM), and the cockpit display of those reduced speeds, as well as the overspeed warning for exceeding those speeds, are equivalent to that of the normal airplane with the high-speed protection system operative.

We do not believe that application of the Interaction of Systems and Structures special conditions (docket no. FAA–2013–0894), or the European Aviation Safety Agency (EASA) Certification Specification (CS) 25.302, is appropriate in this case because design dive speed is, in and of itself, part of the design criteria. Stability and control, flight loads, and flutter evaluations all depend on the design dive speed. Therefore, a single design dive speed should be established that will not be exceeded, taking into account the performance of the high-speed protection system as well as its failure modes, failure indications, and accompanying AFM instructions.

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.

Discussion of Comments

Notice of proposed special conditions No. 25–13–35–SC for Airbus Model A350–900 airplanes was published in the **Federal Register** on December 24, 2013 (78 FR 77611). No comments were received and the special conditions are adopted as proposed.

Applicability

As discussed above, these special conditions apply to Airbus Model A350–900 airplanes. Should Airbus apply at a later date for a change to the type certificate to include another airplane series incorporating the same novel or unusual design feature, the special conditions would apply to that series as well.

Conclusion

This action affects only certain novel or unusual design features on the Airbus Model A350–900 series 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 and 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 A350–900 series airplanes.

1. In lieu of compliance with § 25.335(b)(1), if the flight-control system includes functions that act automatically to initiate recovery before the end of the 20-second period specified in § 25.335(b)(1), V_D/M_D must be determined from the greater of the speeds resulting from conditions (a) and (b), below. The speed increase occurring in these maneuvers may be calculated if reliable or conservative aerodynamic data are used.

a. From an initial condition of stabilized flight at V_C/M_C, the airplane is upset so as to travel a new flight path 7.5 degrees below the initial path. Control application, up to full authority, is made to try to maintain this new flight path. Twenty seconds after initiating the upset, manual recovery is made at a load factor of 1.5 g (0.5 acceleration increment), or such greater load factor that is automatically applied by the system with the pilot's pitch control set to neutral. Power, as specified in § 25.175(b)(1)(iv), is assumed until recovery is initiated, at which time power reduction and the use of pilot-controlled drag devices may be used.

b. From a speed below V_C/M_C, with power to maintain stabilized level flight at this speed, the airplane is upset so as to accelerate through V_C/M_C at a flight path 15 degrees below the initial path (or at the steepest nose-down attitude that the system will permit with full control authority, if less than 15 degrees). The pilot's controls may be in the neutral position after reaching V_C/M_C and before recovery is initiated. Recovery may be initiated three seconds after operation of the high-speed warning system by application of a load of 1.5g (0.5 acceleration increment), or such greater load factor that is automatically applied by the system with the pilot's pitch control set to neutral. Power may be reduced simultaneously. All other means of decelerating the airplane, the use of which is authorized up to the highest speed reached in the maneuver, may be used. The interval between successive pilot actions must not be less than one second.

2. The applicant must also demonstrate that the speed margin, established as above, will not be exceeded in inadvertent, or gust-induced, upsets resulting in initiation of the dive from non-symmetric attitudes, unless the airplane is protected by the flight-control laws from getting into non-symmetric upset conditions. The upset maneuvers described in AC 25–7C, Chapter 2, Section 8, Paragraph 32c.(3)(a) and (c), may be used to comply with this requirement.

3. Detected loss of the high-speed protection function must be less than 10^{-3} per flight hour.

4. Failures of the system must be annunciated to the pilots. The *Operating Limitations Section* of the AFM must contain instructions that reduce the maximum operating speeds, V_{max}/M_{max}, to a value that maintains a speed margin between these speeds and

V_D/M_D that is consistent with showing compliance to § 25.335(b), without the benefit of the high-speed protection system.

5. Dispatch of the airplane with the high-speed protection system inoperative is prohibited except under an approved MEL that requires AFM instructions to indicate reduced maximum operating speeds, as described in special condition (4), above. In addition, the cockpit display of the reduced operating speeds, as well as the overspeed warning for exceeding those speeds, must be equivalent to that of the normal airplane with the high-speed protection system operative. Also, it must be shown that no additional hazards are introduced with the high-speed protection system inoperative.

Issued in Renton, Washington, on July 30, 2014.

Jeffrey E. Duven,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2014–19824 Filed 8–20–14; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2013–0908; Special Conditions No. 25–538–SC]

Special Conditions: Airbus Model A350–900 Series Airplane; Airplane Level of Safety Provided by Composite Fuel-Tank Structure: Post-Crash Fire Survivability

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for Airbus Model A350–900 series airplanes. These airplanes will have a novel or unusual design feature associated with the post-crash fire survivability of composite fuel tanks. 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 date:* September 22, 2014.

FOR FURTHER INFORMATION CONTACT: Doug Bryant, Propulsion and Mechanical Systems, ANM–112, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98057–3356; telephone (425) 227–2384; facsimile (425) 227–1320.

SUPPLEMENTARY INFORMATION:

Background

On August 25, 2008, Airbus applied for a type certificate for their new Model A350–900 series airplane. Later, Airbus requested, and the FAA approved, an extension to the application for FAA type certification to November 15, 2009. The Model A350–900 series airplane has a conventional layout with twin wing-mounted Rolls-Royce Trent XWB engines. It features a twin-aisle, 9-abreast, economy-class layout, and accommodates side-by-side placement of LD–3 containers in the cargo compartment. The basic Model A350–900 series airplane configuration accommodates 315 passengers in a standard two-class arrangement. The design cruise speed is Mach 0.85 with a maximum take-off weight of 602,000 lbs.

The Model A350–900 series airplane will be the second large, transport-category airplane certificated with composite wing and fuel-tank structure that may be exposed to the direct effects of post-crash ground, or under-wing, fuel-fed fires. Although the FAA has previously approved fuel tanks made of composite materials located in the horizontal stabilizer of some airplanes, the composite wing structure of the Model A350–900 series airplane will incorporate a new fuel-tank construction into service.

Advisory Circular (AC) 20–107A, *Composite Aircraft Structure,* under the topic of flammability, states:

The existing requirements for flammability and fire protection of aircraft structure attempt to minimize the hazard to the occupants in the event ignition of flammable fluids or vapors occurs. The use of composite structure should not decrease this existing level of safety.

Pertinent to the wing structure, post-crash-fire passenger survivability is dependent on the time available for passenger evacuation prior to fuel-tank breach or structural failure. Structural failure can be a result of degradation in load-carrying capability in the upper or lower wing surface caused by a fuel-fed ground fire. Structural failure can also be a result of over-pressurization caused by ignition of fuel vapors inside the fuel tank.

The inherent capability of aluminum to resist fire has been considered by the FAA in development of the current regulations. Title 14, Code of Federal Regulations (14 CFR) part 25 Chapter 1, Section 1.1, *General Definitions,* defines ''fire resistant'' to mean, with respect to sheet or structural members, the capacity to withstand heat associated with fire at least as well as aluminum alloy does in dimensions appropriate for the purpose for which those materials are used.

Note that aluminum alloy is identified as the performance standard for fire resistance, although no thickness or heat intensities are defined. Based on the performance of aluminum alloy, the definition of ''fire resistance'' was later defined, for testing of other materials in AC 20–135, as the capability to withstand a 2000 °F flame for five minutes.

The FAA has historically issued rules with the assumption that the material of construction for wing and fuselage would be aluminum. As a representative case, 14 CFR 25.963 was issued as a result of a large, fuel-fed fire following the failures of fuel-tank access doors caused by uncontained engine failures. During the subsequent Aviation Rulemaking Advisory Committee (ARAC) harmonization process, the structures group attempted to harmonize § 25.963 regarding the impact-and-fire resistance of the fuel-tank access panels. Discussions between the FAA and the European Aviation Safety Agency (EASA), formerly the European Joint Aviation Authorities (JAA), ensued regarding the need for fire resistance of the fuel-tank access panels. The EASA position was that the FAA requirement for the access panels to be fire resistant, when the surrounding wing structure was not required to be fire resistant, was inconsistent, and that the access panels only needed to be as fire resistant as the surrounding tank structure. The FAA position stated that the fuel-tank access-panel fire-resistance requirement should be retained, and that, long-term, a minimum requirement should be created for the wing skin itself. Both authorities recognized that existing aluminum wing structure provided an acceptable level of safety. Further rulemaking has not yet been pursued.

As with previous Airbus airplane designs with under-wing-mounted engines, the wing tanks and center tanks are located in proximity to the passengers and near the engines. Past experience indicates that post-crash survivability is greatly influenced by the size and intensity of any fire that occurs. The ability of aluminum wing surfaces, wetted by fuel on their interior surface, to withstand post-crash fire conditions, has been demonstrated by tests conducted at the FAA William J.