Applicability

As discussed above, these special conditions apply to the 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 the Model A350–900 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 airplanes.

In lieu of § 25.361(b), the following special conditions apply:

1. For turbine-engine installations, the engine mounts, pylons, and adjacent supporting airframe structure must be designed to withstand 1g level flight loads acting simultaneously with the maximum limit torque loads imposed by each of the following:

a. Sudden engine deceleration due to a malfunction that could result in a temporary loss of power or thrust, and

b. the maximum acceleration of the engine.

2. For auxiliary power-unit installations, the power-unit mounts and adjacent supporting airframe structure must be designed to withstand 1g level flight loads acting simultaneously with the maximum limit torque loads imposed by each of the following:

a. Sudden auxiliary power-unit deceleration due to malfunction or structural failure, and

b. the maximum acceleration of the power unit.

3. For engine-supporting structure, an ultimate loading condition must be considered that combines 1g flight loads with the transient dynamic loads resulting from:

a. The loss of any fan, compressor, or turbine blade, and separately

b. where applicable to a specific engine design, any other engine structural failure that results in higher loads.

4. The ultimate loads developed from the conditions specified in special conditions 3.a. and 3.b. are to be multiplied by a factor of 1.0 when applied to engine mounts and pylons, and multiplied by a factor of 1.25 when applied to adjacent supporting airframe structure.

5. The airplane must be capable of continued safe flight considering the aerodynamic effects on controllability due to any permanent deformation that results from the conditions specified in special condition 3.

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

John P. Piccola, Jr.,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2014–18657 Filed 8–6–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2013–0903; Special Conditions No. 25–525–SC]

Special Conditions: Airbus Model A350–900 Series Airplane; Side-Stick Controllers

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 side-stick controllers for pitch and roll control, instead of conventional wheels and columns. 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 8, 2014.

FOR FURTHER INFORMATION CONTACT: Loran Haworth, FAA, Airplane and Flight Interface Branch, ANM–111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98057–3356; telephone (425) 227–1133; facsimile (425) 227–1320.

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 Airbus Model A350–900 airplane, like its predecessors the Model A320, A330, A340 and A380 airplanes, will use side-stick controllers for pitch and roll control. Regulatory requirements pertaining to conventional wheel and column controls, such as pilot strength and controllability, are not directly applicable for the side stick. In addition, pilot-control authority may be uncertain because the side sticks are not mechanically interconnected as with conventional wheel and column controls.

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 14 CFR part 25, as amended by Amendments 25–1 through 25–129.

The FAA has determined that Airbus Model A350–900 airplanes must comply with §§ 25.143, 25.145(b), 25.175(b), 25.671, and 25.1329(a).

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 Airbus Model A350–900 airplane because of a novel or unusual design feature, special conditions are prescribed under § 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 Airbus 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

The Airbus Model A350–900 airplane will incorporate the following novel or unusual design features: side-stick controllers for pitch and roll control, in place of conventional wheel and column controls.

Discussion

Current FAA regulations do not specifically address the use of side-stick controllers for pitch and roll control. The unique features of the side stick must therefore be demonstrated through flight and simulator tests to have suitable handling and control characteristics when considering the following:

1. The handling-qualities tasks and requirements of the A350 Special Conditions and other 14 CFR part 25 requirements for stability, control, and maneuverability, including the effects of turbulence.

2. General ergonomics: Armrest comfort and support, local freedom of movement, displacement angle suitability, and axis harmony.

3. Inadvertent input in turbulence.

4. Inadvertent pitch-roll crosstalk.

The Handling Qualities Rating Method (HQRM) of Appendix 5 of the Flight Test Guide, AC 25–7C, may be used to show compliance.

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. 25–13–26–SC for Airbus Model A350–900 airplanes was published in the **Federal Register** on November 8, 2013 (78 FR 67077). 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 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 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 airplanes.

Side-Stick Controllers

1. Pilot strength: In lieu of the ''strength of pilots'' limits shown in § 25.143(c) for pitch and roll, and in lieu of the specific pitch-force requirement of §§ 25.145(b) and 25.175(d), it must be shown that the temporary and maximum prolonged force levels for the side-stick controllers are suitable for all expected operating conditions and configurations, whether normal or non-normal.

2. Pilot-control authority: The electronic side-stick-controller coupling design must provide for corrective and/or overriding control inputs by either pilot with no unsafe characteristics. Annunciation of the controller status must be provided, and must not be confusing to the flightcrew.

3. Pilot control: It must be shown by flight tests that the use of side-stick controllers does not produce unsuitable pilot-in-the-loop control characteristics when considering precision path control/tasks and turbulence. In addition, pitch and roll control force and displacement sensitivity must be compatible, so that normal inputs on one control axis will not cause significant unintentional inputs on the other.

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

John P. Piccola, Jr.,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2013–0905; Special Conditions No. 25–531–SC]

Special Conditions: Airbus Model A350–900 Airplane; Flight-Envelope Protection, Normal Load-Factor (G) Limiting

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 flight-control system that prevents the pilot from inadvertently or intentionally exceeding the positive or negative airplane limit load factor. 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 8, 2014.

FOR FURTHER INFORMATION CONTACT: Joe Jacobsen, FAA, Airplane and Flightcrew Interface Branch, ANM–111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington 98057–3356; telephone (425) 227–2011; facsimile (425) 227–1320.

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 normal load-factor limit on Airbus Model A350–900 airplanes is