Discussion

Section 25.701(a) requires that, unless the airplane has safe-flight characteristics with the flaps or slats retracted on one side and extended on the other, flap and slat surfaces must be synchronized by either a mechanical interconnection or any equivalent means that has the same integrity. Synchronization is interpreted to mean that flap movement is symmetrical throughout the full range of flap motion. Because the lateral-trim function intentionally creates asymmetric flap motions, the flap-system installation of the Model A350–900 airplane does not meet the requirement of § 25.701(a) and (d).

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. 25–13–22–SC for Airbus Model A350–900 airplanes was published in the **Federal Register** on January 8, 2014 (79 FR 1339). 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 the 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:

Lateral-Trim Function Through Differential Flap Setting

Current airworthiness standards, specifically § 25.701, do not contain adequate safety standards for this airplane design. In lieu of the requirements of § 25.701(a) and (d) for the lateral-trim function, the following special condition are issued:

1. Airbus must demonstrate that an unsafe condition is not created by using the flaps asymmetrically.

2. The degree of acceptable asymmetry must be defined and justified for all flight phases with respect to:

a. Section 25.701(b) and (c), with the worst-case asymmetric flap configurations, and

b. Providing equivalent protection against excess asymmetry in the same manner as § 25.701 provides to systems that are synchronized, or use another equivalent means to prevent asymmetry.

3. This lateral-trim function is a flight-control system and therefore must be shown to comply with both general system requirements as well as general flight-control requirements. Therefore, the function must be demonstrated not to have significant latent failures, where practicable.

Issued in Renton, Washington, on July 9, 2014.

Jeffrey E. Duven,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2014–17578 Filed 7–24–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2013–0892; Special Conditions No. 25–537–SC]

Special Conditions: Airbus A350–900 Airplane; Crashworthiness, Emergency Landing Conditions

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for Airbus Model A350–900 airplanes. These airplanes have a novel or unusual design feature associated with crashworthiness of carbon-fiber-reinforced plastic used in the construction of the fuselage. 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:* August 25, 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) 227–1320.

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.

Changes in the structural behavior of the Airbus Model A350–900 airplane, compared to currently certificated designs, could degrade the survivability of the Model A350–900 airplane occupants in crash conditions that are within the limits of survivability for other designs.

The airworthiness regulations specify no aircraft-level survivable crash condition, and metallic aircraft have not been designed specifically against survivable impact conditions. However, the structural behavior of previously certificated aircraft in a survivable crash event, and the associated limits, are considered generally acceptable. It is therefore reasonable to expect that a design using new materials, such as the Model A350–900 airplanes use, should be assessed to ensure that the material meets the currently accepted level of safety.

The FAA and industry have collected a significant amount of experimental data, as well as data from crashes of transport-category airplanes, that show a high occupant-survival rate at vertical-descent velocities up to 30 ft/sec. Based on this information, the FAA finds it appropriate and necessary for an

assessment of the Model A350–900 airplane to span a range of airplane vertical-descent speeds up to 30 ft/sec.

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.

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 § 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 § 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 incorporates the following novel or unusual design feature: A fuselage fabricated with a combination of carbon-fiber-reinforced plastic (CFRP) and metallic structure. This is a novel and unusual design feature for a large transport airplane. Structure fabricated from CFRP may behave differently than metallic structure in crash conditions because of differences in material ductility, stiffness, failure modes, and energy-absorption characteristics. Therefore, the impact-response characteristics of the Model A350–900 airplane must be evaluated to ensure that its survivable crashworthiness characteristics provide at least the same level of safety as those of a similarly sized airplane constructed from traditional metallic materials.

No existing regulations adequately address this potential difference in impact-response characteristics for what are considered survivable crash conditions. The special conditions are necessary to ensure a level of safety equivalent to that provided by 14 CFR part 25.

Discussion

Factors in crash survivability are:

- Retention of items of mass,
- maintenance of occupant emergency egress paths,
- maintenance of acceptable acceleration and loads experienced by the occupants, and
- maintenance of a survivable volume.

To provide the same level of safety as exists with conventional airplane construction, Airbus should show that the Model A350–900 airplane has sufficient crashworthiness capabilities under foreseeable survivable impact events. To show this, Airbus should evaluate the impact-response characteristics of the Model A350–900 airplane to ensure that its crashworthiness characteristics are not significantly different from those of a similarly sized airplane built from traditional metallic materials.

In their evaluation of the Model A350–900 airplane response to an impact event, Airbus should demonstrate that the structural behavior is similar to that expected from a metallic airframe of a size similar to the Model A350–900, or incorporate mitigating design features that provide a similar level of safety.

Airbus should demonstrate, either through analysis using validated analytical tools or by direct-test evidence, that the crash dynamics of the Model A350–900 fuselage structure provides a level of occupant protection consistent with previously certificated large transport-category airplanes.

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. 25–13–21–SC for the Airbus Model A350–900 airplane was published in the **Federal Register** on January 8, 2014 (79 FR 1337). 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 the Airbus Model A350–900 airplane. 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.

The Airbus Model A350–900 airplane must provide an equivalent level of occupant safety and survivability, to that provided by previously certificated wide-body transport-category airplanes of similar size, under foreseeable survivable impact events for the following four criteria. To demonstrate an equivalent level of occupant safety and survivability, the applicant must demonstrate that Model A350–900 airplanes meet the following criteria for a range of airplane vertical-descent velocities up to 30 ft/sec.

1. Retention of Items of Mass

The occupants, i.e., passengers, flight attendants, and flightcrew, must be protected during the impact event from release of seats, overhead bins, and other items of mass, due to the impact loads and resultant structural deformation of the supporting airframe and floor structures. The applicant must show that loads, due to the impact event and resultant structural deformation of the supporting airframe and floor structure at the interface of the airplane structure to seats, overhead bins, and other items of mass, are comparable to those of previously certificated wide-body transports of similar size for the range of descent velocities stated above. The attachments of these items need not be designed for static emergency-landing loads in excess of those defined in § 25.561 if impact-response characteristics of the Airbus Model A350–900 airplane yields load factors at the attach points that are comparable to those for a previously certificated wide-body transport-category airplane.

2. Maintenance of Acceptable Acceleration and Loads Experienced by the Occupants

The applicant must show that the impact response characteristics of the Airbus Model A350–900 airplane, specifically the vertical acceleration levels experienced at the seat/floor interface, and loads experienced by the occupants during the impact events, are consistent with those found in § 25.562(b), or with levels expected for a previously certificated wide-body transport-category airplane for the conditions stated above.

3. Maintenance of a Survivable Volume

For the conditions stated above, the applicant must show that all areas of the airplane occupied for takeoff and landing provide a survivable volume comparable to that of previously certificated wide-body transport-category airplanes of similar size during and after the impact event. This means that structural deformation will not result in infringement of the occupants' normal living space, so that passenger survivability will not be significantly affected.

4. Maintenance of Occupant Emergency Egress Paths

The evacuation of occupants must be comparable to that from a previously certificated wide-body transport-category airplane of similar size. To show this, the applicant must show that the suitability of the egress paths, as determined following the vertical-impact events, is comparable to the suitability of the egress paths of a comparable, certificated, wide-body transport-category airplane, as determined following the same vertical-impact events.

Issued in Renton, Washington, on July 9, 2014.

Jeffrey E. Duven,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2014–17574 Filed 7–24–14; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA–2013–0910; Special Conditions No. 25–534–SC]

Special Conditions: Airbus Model A350–900 Airplanes; Isolation or Protection of the Aircraft Electronic System Security From Unauthorized Internal Access

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 airplane electronic system security protection or isolation from unauthorized internal access. 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:* August 25, 2014.

FOR FURTHER INFORMATION CONTACT: Varun Khanna, FAA, Airplane and Flightcrew Interface Branch, ANM–111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98057–3356; telephone (425) 227–1298; 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.

Contemporary transport-category airplanes have both safety-related and non-safety-related electronic system networks for many operational functions. However, electronic system network security considerations and functions have played a relatively minor role in the certification of such systems because of the isolation, protection mechanisms, and limited connectivity between the different networks.

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.

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 § 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, 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

The Airbus Model A350–900 airplane will incorporate the following novel or unusual design feature: An electronics network system architecture that is novel or unusual for commercial transport airplanes, and that introduces potential security risks and vulnerabilities not addressed in current regulations and airplane-level or system-level safety assessment methods.

Discussion

The Airbus Model A350–900 airplane architecture is novel or unusual for commercial transport airplanes because it allows connection to previously isolated data networks connected to systems that perform functions required