Applicability

As discussed above, these special conditions are applicable to the Airbus A380–800 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 features, these special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features of the Airbus A380–800 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 the Airbus A380–800 airplane.

In lieu of the requirements of 14 CFR 25.1353(c)(1) through (c)(4), the following special conditions apply:

Lithium-ion batteries on the Airbus Model 380–800 airplane must be designed and installed as follows:

(1) Safe cell temperatures and pressures must be maintained during any foreseeable charging or discharging condition and during any failure of the charging or battery monitoring system not shown to be extremely remote. The lithium ion battery installation must preclude explosion in the event of those failures.

(2) Design of the lithium ion batteries must preclude the occurrence of self-sustaining, uncontrolled increases in temperature or pressure.

(3) No explosive or toxic gasses emitted by any lithium ion battery in normal operation or as the result of any failure of the battery charging system, monitoring system, or battery installation—not shown to be extremely remote—may accumulate in hazardous quantities within the airplane.

(4) Installations of lithium ion batteries must meet the requirements of 14 CFR 25.863(a) through (d).

(5) No corrosive fluids or gasses that may escape from any lithium ion battery may damage surrounding structure or any adjacent systems, equipment or electrical wiring of the airplane in such a way as to cause a major or more severe failure condition, in accordance with 14 CFR 25.1309 (b) and applicable regulatory guidance.

(6) Each lithium ion battery installation must have provisions to prevent any hazardous effect on structure or essential systems caused by the maximum amount of heat the battery can generate during a short circuit of the battery or of its individual cells.

(7) Lithium ion battery installations must have a system to control the charging rate of the battery automatically, so as to prevent battery overheating or overcharging, and,

(i) A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition, or,

(ii) A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

(8) Any lithium ion battery installation whose function is required for safe operation of the airplane must incorporate a monitoring and warning feature that will provide an indication to the appropriate flight crewmembers, whenever the state-of-charge of the batteries has fallen below levels considered acceptable for dispatch of the airplane.

(9) The Instructions for Continued Airworthiness, required by 14 CFR 25.1529, must contain maintenance requirements for measurements of battery capacity at appropriate intervals to ensure that batteries whose function is required for safe operation of the airplane will perform their intended function as long as the battery is installed in the airplane. The Instructions for Continued Airworthiness must also contain procedures for the maintenance of lithium ion batteries in spares storage to prevent the replacement of batteries whose function is required for safe operation of the airplane with batteries that have experienced degraded charge retention ability or other damage due to prolonged storage at a low state of charge.

Note: These special conditions are not intended to replace 14 CFR 25.1353(c) in the certification basis of the Airbus A380–800 airplane. The special conditions apply only to lithium ion batteries and their installations. The requirements of 14 CFR 25.1353(c) remain in effect for batteries and battery installations of the Airbus A380–800 airplane that do not utilize lithium ion batteries.

Issued in Renton, Washington, on November 30, 2006.

Kevin Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6–21188 Filed 12–12–06; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM313; Special Conditions No. 25–340–SC]

Special Conditions: Airbus Model A380–800 Airplane; Fire Protection

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the Airbus A380–800 airplane, which has novel and unusual design features, such as a full-length, double deck passenger cabin and electrical equipment bays distributed throughout the airplane. For these design features, the applicable airworthiness regulations do not contain adequate or appropriate safety standards regarding fire protection. 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. Additional special conditions will be issued for other novel or unusual design features of the Airbus Model A380–800 airplane.

DATES: *Effective Date:* The effective date of these special conditions is November 30, 2006.

FOR FURTHER INFORMATION CONTACT: Holly Thorson, FAA, International Branch, ANM–116, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone (425) 227–1357; facsimile (425) 227–1149.

SUPPLEMENTARY INFORMATION:

Background

Airbus applied for FAA certification/validation of the provisionally-designated Model A3XX–100 in its letter AI/L 810.0223/98, dated August 12, 1998, to the FAA. Application for certification by the Joint Aviation Authorities (JAA) of Europe had been made on January 16, 1998, reference AI/L 810.0019/98. In its letter to the FAA, Airbus requested an extension to the 5-

year period for type certification in accordance with 14 CFR 21.17(c).

The request was for an extension to a 7-year period, using the date of the initial application letter to the JAA as the reference date. The reason given by Airbus for the request for extension is related to the technical challenges, complexity, and the number of new and novel features on the airplane. On November 12, 1998, the Manager, Aircraft Engineering Division, AIR–100, granted Airbus' request for the 7-year period, based on the date of application to the JAA.

In its letter AI/LE–A 828.0040/99 Issue 3, dated July 20, 2001, Airbus stated that its target date for type certification of the Model A380–800 has been moved from May 2005, to January 2006, to match the delivery date of the first production airplane. In a subsequent letter (AI/L 810.0223/98 issue 3, dated January 7, 2006), Airbus stated that its target date for type certification is October 2, 2006. In accordance with 14 CFR 21.17(d)(2), Airbus chose a new application date of December 20, 1999, and requested that the 7-year certification period which had already been approved be continued. The FAA has reviewed the part 25 certification basis for the Model A380–800 airplane, and no changes are required based on the new application date.

The Model A380–800 airplane will be an all-new, four-engine jet transport airplane with a full double-deck, two-aisle cabin. The maximum takeoff weight will be 1.235 million pounds with a typical three-class layout of 555 passengers.

Type Certification Basis

Under the provisions of 14 CFR 21.17, Airbus must show that the Model A380–800 airplane meets the applicable provisions of 14 CFR part 25, as amended by Amendments 25–1 through 25–98. If the Administrator finds that the applicable airworthiness regulations do not contain adequate or appropriate safety standards for the Airbus A380–800 airplane because of novel or unusual design features, special conditions are prescribed under the provisions of 14 CFR 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Airbus Model A380–800 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. In addition, the FAA must issue a finding of regulatory adequacy pursuant to section 611 of Public Law 93–574, the ''Noise Control Act of 1972.''

Special conditions, as defined in 14 CFR 11.19, are issued in accordance with 14 CFR 11.38 and become part of the type certification basis in accordance with 14 CFR 21.17(a)(2).

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 the provisions of 14 CFR 21.101.

Discussion of Novel or Unusual Design Features

The Airbus Model A380–800 airplane has novel or unusual design features relative to airplanes previously certificated under 14 CFR part 25. These design features include full-length passenger cabins on the main deck and the upper deck and electrical equipment bays that are distributed throughout the airplane—on the main deck and upper deck as well as in the lower lobe.

Generally, transport category airplanes have one or two electrical equipment bays located in the lower lobe, adjacent to pressure regulator/outflow valves. If there were a fire in an electrical equipment bay, any smoke would be drawn toward the outflow valves and be discharged from the airplane without entering occupied areas. In the Airbus Model A380–800, the electrical equipment bays are distributed throughout the airplane. Only those equipment bays located in the lower lobe of the airplane are adjacent to pressure regulator/outflow valves.

For this combination of electrical equipment bays distributed throughout the airplane and a double deck passenger cabin, the applicable airworthiness regulations do not contain adequate or appropriate safety standards regarding fire protection. Based upon its review of incidents of smoke in the passenger cabin, the FAA determined that an airplane with electrical equipment bays located below, on, and above the main deck of a double deck airplane presents a greater risk of smoke penetration than older designs with equipment bays only in the lower lobe adjacent to pressure regulator/outflow valves.

In the event of a fire, airplanes with older designs rely upon ''trial and error'' to determine whether the source of fire or smoke is in the electrical equipment bay. Typically, this involves the pilots following a procedure in the Airplane Flight Manual. It may involve shutting down power to the avionics equipment in one electrical equipment bay and reconfiguring the airplane's environmental control system (*e.g.*, shutting down the recirculation fan) to see whether the amount of smoke in the flightdeck or passenger compartment is reduced or eliminated. If these actions do not eliminate the smoke, the flight crew may turn the power back on in the one electrical equipment bay, shut it off in the other equipment bay, and reconfigure the environmental control system again to see whether the smoke is now reduced or eliminated.

This approach may be acceptable for airplanes with no more than two electrical equipment bays, both located in the lower lobe. In that case, there are only two options: a fire in an electrical equipment bay is in either one or the other. However, for an airplane with electrical equipment bays located below, on, and above decks, this approach is not sufficient, because—in the time it takes to determine the source of smoke—a fire could spread and the quantity of smoke could increase significantly.

Furthermore, the ''trial and error'' approach raises concern over the lack of informational awareness that a flight crew would have should smoke penetration occur. Many factors—including the airflow pattern, configuration changes in the environmental control system, potential leak paths, and location of outflow/regulator valves—would make it difficult to identify a smoke source, especially during flight or system transients, such as climbing/descending or changes in ventilation.

Current regulations (§ 25.857) require that cargo compartments have a means to exclude hazardous quantities of smoke or fire extinguishing agent from penetrating into occupied areas of the airplane. However, there are no requirements that address the following:

- Preventing hazardous quantities of smoke or extinguishing agent originating from the electrical equipment bays from penetrating into occupied areas of the airplane;
- Installing smoke or fire detectors in electrical equipment bays; or
- Preventing hazardous quantities of smoke or extinguishing agent originating on one deck from spreading to the other deck.

The FAA believes that smoke detectors are needed in all electrical equipment bays on the A380 to ensure that the flightcrew can make an informed decision as to the source of smoke and can shut down the specific electrical equipment bay from which the smoke is coming.

These special conditions, therefore, require that there be a smoke or fire detection system in each electrical equipment bay. They also include requirements to prevent propagation of hazardous quantities of smoke or fire extinguishing agent between or throughout the passenger cabins on the main deck and the upper deck.

Discussion of Comments

Notice of Proposed Special Conditions No. 25–05–08–SC, pertaining to fire protection for the Airbus A380 airplane, was published in the **Federal Register** on August 9, 2005 (70 FR 46108). A comment was received from the Boeing Company.

Requested change 1: Boeing states that two conditions must be met in order to issue Special Conditions and that neither one is met in this case. Specifically, Boeing says that the distributed electrical equipment bays are not a novel or unusual design feature, because ''There have been remote electrical equipment bays on many previously certificated airplane models, and similar Special Conditions have not been required.'' In addition, Boeing states that the current regulations are adequate to ensure that remote electrical equipment bays are safe. Boeing concludes, therefore, that the proposed Special Conditions are neither necessary nor justified.

FAA response: The FAA does not agree. As stated above in the *Discussion of Novel or Unusual Design Features,* the FAA finds that both conditions required for issuance of a special condition are met: previous part 25 rulemaking did not envision distributed electrical equipment bays on passenger decks, and new standards are necessary to maintain the level of safety of part 25. The FAA requested that Boeing provide further corroboration of its comment that ''There have been remote electrical equipment bays on many previously certificated airplane models, and similar Special Conditions have not been required.'' Our review of the information provided by Boeing indicates that the specific design features incorporated into certain Boeing models are not the same as those on the Airbus A380. Specifically, the A380 has multiple electrical equipment bays distributed throughout the lower lobe and on and above the main deck, whereas Boeing airplanes have at most two electrical equipment bays, both located in the lower lobe.

Historically, electrical equipment bays have been located in the lower lobe, adjacent to pressure regulator/outflow valves such that any smoke in the equipment bay would be drawn toward the outflow valves and leave the airplane without entering occupied areas. The presence of electrical equipment bays on and above the main deck presents a special challenge in the event of a fire and creates uncertainty as to whether smoke will penetrate into occupied areas of the airplane.

To summarize, the FAA believes that it is appropriate to impose these special conditions for the A380–800 because:

(1) The A380–800 is a large, double deck airplane with multiple electrical equipment bays distributed throughout, *i.e.*, lower lobe, main deck, and upper deck.

(2) The A380–800 has electrical equipment bays located above the lower lobe and not adjacent to pressure regulator/outflow valves.

(3) The A380–800 has more than two electrical equipment bays.

(4) The A380–800 has electrical equipment bays located on or above passenger decks or the flight deck.

(5) An airplane with this combination of electrical equipment bays and passenger decks presents a greater risk of smoke penetration than older designs with equipment bays only in the lower lobe, adjacent to pressure regulator/outflow valves.

(6) For this combination of design features, the applicable airworthiness regulations do not contain adequate or appropriate safety standards regarding fire protection.

(7) All electrical equipment bays on the A380 should contain smoke or fire detectors to ensure that in the event of a fire in one equipment bay the flight crew has sufficient situational information to enable them to shut down the correct electrical equipment bay.

Requested change 2: Boeing objects to applying the proposed Special Conditions ''to all [electrical] equipment bays, not just the remote equipment bay(s) that the FAA has determined to be novel and inadequately covered by the existing regulations. Applying this Special Condition to the main equipment bay appears to be a form of general rulemaking via Special Condition.''

FAA response: The FAA does not agree. We contacted the Boeing Company regarding its comment and asked for clarification. It appears that Boeing's comment was focused on multiple electrical equipment bays located in the lower lobe and not the distributed electrical equipment bays in the A380 design. However, it is not only the remote electrical equipment bays which are a novel or unusual design feature. It is the combination of electrical equipment bays distributed on the main deck, the upper deck, and the lower lobe along with full-length passenger cabins on the main deck and the upper deck. This combination raises the possibility that smoke from a fire in an electrical equipment bay will penetrate into the flightdeck or into one or both passenger cabins. As noted above, the presence of smoke detectors in these equipment bays will ensure that the flight crew has sufficient situational information to enable them to shut down the correct electrical equipment bay and to prevent hazardous quantities of smoke from entering the flight deck or passenger cabins.

Based on the fact that the electrical distribution center on the A380 includes electrical equipment bays in locations where fire and smoke are more hazardous to passengers, we believe that this special condition should apply not only to electrical equipment bays on the passenger decks, but to all electrical equipment bays. To do otherwise would not protect the entire electrical distribution system when such protection could be accomplished readily.

Requested change 3: Finally, Boeing comments that the proposed Special Conditions add requirements for detecting smoke and fire and for preventing penetration of smoke and that such requirements have previously been associated with fire protection for cargo compartments, but not for electrical equipment bays. According to the commenter,

> There have been many issues raised with the smoke quantities and test methods for these tests, especially for cargo compartment tests. None of these discussions have included equipment bays as the location of the test, or the materials in the equipment bay as the fuel of the fire. Therefore, there is no agreement as to the detailed test procedures for the proposed equipment bay detection tests.

FAA response: This comment pertains to how Airbus will show compliance with the requirements to install a smoke or fire detection system in each electrical equipment bay and to prevent smoke originating from the electrical equipment bays from penetrating between or throughout passenger cabins on the main deck and the upper deck. We have discussed these issues with Airbus and with specialists within the European Aviation Safety Agency and have established appropriate test criteria through the issue paper process.

Clarification

The FAA has revised the text in the *Discussion of Novel or Unusual Design Features* to clarify that the special conditions apply to propagation of

smoke or extinguishing agents between or throughout the main deck and upper deck passenger cabins. Similarly, we have revised the text of Special Condition a.2.(c) to clarify that smoke from a source below the main deck must not rise above armrest height on the main deck.

Applicability

As discussed above, these special conditions are applicable to the Airbus A380–800 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 features, these special conditions would apply to that model as well under the provisions of § 21.101.

Conclusion

This action affects only certain novel or unusual design features of the Airbus A380–800 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 the Airbus A380–800 airplane.

a. Requirements to prevent propagation of smoke or extinguishing agents between or throughout main deck and upper deck passenger cabins:

1. To prevent such propagation, the following must be demonstrated:

(a) Means to prevent hazardous quantities of smoke or extinguishing agent originating from the electrical equipment bays from incapacitating passengers and crew, and

(b) Means to prevent hazardous quantities of smoke or extinguishing agent originating from one deck from propagating to the other deck via vents, stairways, and joints in the floor/ceiling.

2. A ''small quantity'' of smoke may enter an occupied area only under the following conditions:

(a) The smoke enters occupied areas during system transients [1] from below deck sources. No sustained smoke penetration beyond that from environmental control system transients is permitted.

(b) Penetration of the small quantity of smoke is a dynamic event, involving either dissipation or mobility. Dissipation is rapid dilution of the smoke by ventilation air, and mobility is rapid movement of the smoke into and out of the occupied area. In no case, should there be formation of a light haze indicative of stagnant airflow, as this would indicate that the ventilation system is failing to meet the requirements of § 25.831(b).

(c) The smoke from a smoke source below the main deck must not rise above armrest height on the main deck.

(d) The smoke from a source on the same deck or above the deck must dissipate rapidly via dilution with fresh air and be evacuated from the airplane. A procedure must be included in the Airplane Flight Manual to evacuate smoke from the occupied areas of the airplane. In order to demonstrate that the quantity of smoke is small, a flight test must be conducted which simulates the emergency procedures used in the event of a fire during flight, including the use of V_{mo}/M_{mo} descent profiles and a simulated landing, if such conditions are specified in the emergency procedure.

b. Requirement for fire detection in electrical equipment bays:

A smoke or fire detection system that complies with 14 CFR 25.858(c) and (d) must be provided for each electrical equipment bay. Each system must provide a visual indication to the flight deck within one minute after the start of a fire in an electrical equipment bay. Airplane tests must be conducted to show compliance with this requirement, and the performance of the smoke or fire detection system must be shown, in accordance with Advisory Circular 25–9A or by other means acceptable to the FAA.

Issued in Renton, Washington, on November 30, 2006.

Kevin Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6–21191 Filed 12–12–06; 8:45 am]

BILLING CODE 4910–13–P

[1] Transient airflow conditions may cause air pressure differences between compartments, before the ventilation and pressurization system is reconfigured. Additional transients occur during changes to system configurations such as pack shut-down, fan shut-down, or changes in cabin altitude; transition in bleed source change, such as from intermediate stage to high stage bleed air; and cabin pressurization ''fly-through'' during descent may reduce air conditioning inflow. Similarly, in the event of a fire, a small quantity of smoke that penetrates into an occupied area before the ventilation system is reconfigured would be acceptable under certain conditions described within this special condition.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2006–25270; Airspace Docket No. 06–ASO–9]

Establishment of Class D Airspace; Eastman, GA; Correction

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Correcting amendment.

SUMMARY: This document contains a correction to the final rule (FAA–2006–25270; 06–ASO–9), which was published in the **Federal Register** on November 30, 2006 (71 FR 69191), establishing Class D airspace at Eastman, GA. This action corrects the effective date of the Class D airspace.

DATES: *Effective Date:* December 13, 2006.

FOR FURTHER INFORMATION CONTACT: Mark D. Ward, Group Manager, System Support, Eastern Service Center, Federal Aviation Administration, P.O. Box 20636, Atlanta, Georgia 30320; telephone (404) 305–5627.

SUPPLEMENTARY INFORMATION:

Background

Federal Register Document 06–9232, Docket No. FAA–2006–252760; Airspace Docket 06–ASO–9, published on November 30, 2006 (71 FR 69191), establishes Class D airspace at Eastman, GA. This action corrects the published docket.

Designations for Class D airspace are published in Paragraph 5000 of FAA Order 7400.9P, dated September 1, 2006, and effective September 15, 2006, which is incorporated by reference in 14 CFR 71.1. The Class D airspace designation listed in this document will be published subsequently in the Order.

Need for Correction

As published, the final rule contains an error, which incorrectly states the effective date of the Class D airspace. Accordingly, pursuant to the authority delegated to me, the effective date for the establishment of Class D airspace at Eastman, GA, incorporated by reference at § 71.1, 14 CFR 71.1, and published in the **Federal Register** on November 30, 2006 (71 FR 69191), is corrected by making the following correcting amendment.

List of Subjects in 14 CFR Part 71

Airspace, incorporation by reference, Navigation (air).

■ In consideration of the foregoing, the Federal Aviation Administration