Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM–135, Notice No. SC–96–8–NM]

Special Conditions: Boeing Model 767–27C, Airborne Warning and Control System Modification (AWACS) Airplanes; Liquid Oxygen

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: This notice proposes special conditions for Boeing Model 767–27C airplanes, modified by installation of an Airborne Warning and Control System (AWACS). These airplanes will be equipped with an oxygen system utilizing liquid oxygen for storage to allow extended, unpressurized operations. The applicable regulations do not contain adequate or appropriate safety standards for the design and installation of oxygen systems utilizing liquid oxygen for storage. This notice contains the additional safety standards that the Administrator considers necessary to ensure that the design and installation of the oxygen system utilizing liquid oxygen for storage is such that a level of safety equivalent to that established by the airworthiness standards for transport category airplanes is provided.

DATES: Comments must be received on or before December 23, 1996.

ADDRESSES: Comments on this proposal may be mailed in duplicate to: Federal Aviation Administration, Office of the Assistant Chief Counsel, Attention: Rules Docket (ANM–7), Docket No. NM–135, 1601 Lind Avenue SW, Renton, Washington 98055–4056; or delivered in duplicate to the Office of the Assistant Chief Counsel at the above address. Comments must be marked: Docket No. NM–135. Comments may be inspected in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4:00 p.m.

FOR FURTHER INFORMATION CONTACT: William Schroeder, FAA, Standardization Branch, ANM–113, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW, Renton, Washington 98055–4056; telephone (206) 227–2148.

SUPPLEMENTARY INFORMATION:

Comments invited

Interested persons are invited to participate in the making of these proposed special conditions by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket or notice number and be submitted in duplicate to the address specified above. All communications received on or before the closing date for comments will be considered by the Administrator before further rulemaking action is taken on this proposal. The proposals contained in this notice may be changed in light of the comments received. All comments received will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested parties. A report summarizing each substantive public contact with FAA personnel concerning this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket No. NM–135.'' The postcard will be date stamped and returned to the commenter.

Background

On May 25, 1993, Boeing Commercial Airplane Group-Wichita Division, applied for a supplemental type certificate (STC) to modify Boeing Model 767–27C airplanes to an Airborne Warning and Control System (AWACS) configuration. The AWACS modification includes installation of equipment consoles, seats for console operators, a liquid oxygen (LOX) system (liquid oxygen converter, valves, evaporating coils, lines, regulators, indicators, fittings, etc.), and a radome on the top of the airplane. Boeing will modify the aft lower lobe with hydraulics for the AWACS antenna drive unit, high-powered radio frequency units for the AWACS radar, and other AWACS hardware. Boeing has designed the LOX installation to allow extended unpressurized operation at 25,000 feet. The FAA will approve the performance of the oxygen system during certification testing.

There are no specific regulations that address the design and installation of oxygen systems that utilize liquid oxygen. Existing requirements, such as §§ 25.1309, 25.1441 (b) & (c), 25.1451, and 25.1453 in the Boeing Model 767–27C original type certification basis, applicable to this modification, provide some design standards for crew and medical oxygen system installations. However, the FAA must specify additional standards for systems utilizing liquid oxygen to ensure that an acceptable level of safety is maintained.

Supplemental Type Certification Basis

Under the provisions of §§ 21.101 (a) and (b), Boeing Commercial Airplane Group must show that the modified Model 767–27C continues to meet the applicable provisions of the regulations incorporated by reference in Type Certificate (TC) No. A1NM, or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the ''original type certification basis.'' The regulations incorporated by reference in TC A1NM are basically as follows: Part 25 of the FAR, as amended by Amendments 25–1 through 25–37, plus certain later amended sections as specified in Type Certificate Data Sheet A1NM. In addition, the certification basis includes certain special conditions, exemptions and optional requirements that are not relevant to these special conditions. Also, the modified Model 767–27C must continue to comply with the fuel venting and exhaust emission requirements of part 34 (previously Special Aviation Regulation 27), and the noise certification requirements of part 36 in effect on the date the STC is issued.

If the Administrator finds that the applicable airworthiness regulations (i.e., part 25, as amended and applicable) do not contain adequate or appropriate safety standards for the modified Model 767–27C because of a novel or unusual design feature, special

conditions are prescribed under the provisions of § 21.16.

Special conditions, as appropriate, are issued in accordance with § 11.49 of the FAR after public notice, as required by § 11.28 and § 11.29(b), and become part of the type certification basis in accordance with § 21.101(b)(2).

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplement type certificate to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, the special conditions would apply to the other model under the provisions of § 21.101(a)(1).

Discussion

There are no specific regulations that address the design and installation of oxygen systems that utilize liquid oxygen for storage. Existing requirements, such as §§ 25.1309, 25.1441 (b) and (c), 25.1451, and 25.1453 of the Boeing 767–200 series certification basis applicable to this STC project, provide some design standards appropriate for oxygen system installations. However, additional design standards for oxygen systems utilizing liquid oxygen are needed to supplement the existing applicable requirements. The quantity of liquid oxygen involved in this installation and the potential for unsafe conditions that may result when the oxygen content of an enclosed area becomes too high because of system leaks, malfunction, or damage from external sources, make it necessary to assure adequate safety standards are applied to the design and installation of the system in Boeing Model 767–27C airplanes.

To ensure that a level of safety is achieved for modified Boeing Model 767–27C airplanes, utilizing liquid oxygen as a storage medium for an oxygen system, equivalent to that intended by the regulations incorporated by reference, special conditions are needed which require those oxygen systems to be designed and installed to preclude or minimize the existence of unsafe conditions that can result from system leaks, malfunction, installation, or damage from external sources.

Application by Boeing for approval of oxygen systems utilizing liquid oxygen as a storage medium installed in transport airplanes, and the unsafe conditions that can exist when the oxygen content of an enclosed area becomes too high because of system leaks, malfunction, installation or damage from external sources, make development and application of appropriate additional design and installation standards necessary.

As discussed above, these special conditions are applicable initially to the Boeing Model 767–27C airplane. Should Boeing Commercial Airplane Group 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, under the provisions of § 21.101(a)(1).

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 and affects only the applicant who applied to the FAA for approval of these features on the airplane.

List of Subjects in 14 CFR Part 25

Air transportation, Aircraft, Aviation safety, Safety.

The authority citation for these special conditions continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for Boeing Model 767–27C airplanes modified to an AWACS configuration.

a. The liquid oxygen converter and other oxygen equipment shall not be installed where baggage, cargo, or loose equipment are stored (unless items are stored within an appropriate container which is secured or restrained by acceptable means).

b. The liquid oxygen converter shall be located in the aircraft so that there is no risk of damage due to an uncontained rotor or fan blade failure.

c. The liquid oxygen system and associated gaseous oxygen distribution lines should be designed and located to minimize the hazard from uncontained rotor debris.

d. The flight deck oxygen system shall meet the supply requirements of Part 121 after the distribution line has been served by a rotor fragment.

e. The pressure relief values on the liquid oxygen converters shall be vented overboard through a drain in the bottom of the aircraft. Means must be provided to prevent hydrocarbon fluid migration from impinging upon the vent outlet of the liquid oxygen system.

f. The system shall include provisions to ensure complete conversion of the liquid oxygen to gaseous oxygen.

g. If multiple converters are used and manifolded together, check valves shall be installed so that a leak in one converter will not allow leakage of oxygen from any other converter.

h. Flexible hoses shall be used for the aircraft systems connections to shock-mounted converters, where movement relative to the aircraft may occur.

i. Condensation from system components or lines shall be collected by drip pans, shields, or other suitable collection means and drained overboard through a drain fitting separate from the liquid oxygen vent fitting, as specified in (e) above.

j. Oxygen system components shall be burst pressure tested to 3.0 times, and proof pressure tested to 1.5 times, the maximum normal operating pressure. Compliance with the requirement for burst testing may be shown by analysis, or a combination of analysis and test.

k. Oxygen system components shall be electrically bonded to the aircraft structure.

l. All gaseous or liquid oxygen connections located in close proximity to an ignition source shall be shrouded and vented overboard using the system specified in (e) above.

m. A means will be provided to indicate the quantity of oxygen in the converter and oxygen availability to the flightcrews.

Issue in Renton, Washington, on November 13, 1996.

James V. Devany,

Acting Manager, Transport Airplane Directorate; Aircraft Certification Service, ANM–100.

[FR Doc. 96–29822 Filed 11–20–96; 8:45 am]

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14 CFR Part 39

[Docket No. 92–CE–41–AD]

RIN 2120–AA64

Airworthiness Directives: Louis L'Hotellier, S.A., Ball and Swivel Joint Quick Connectors

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes to adopt a new airworthiness directive (AD) that would apply to Louis L'Hotellier S.A. (L'Hotellier) ball and swivel joint quick connectors installed on gliders and sailplanes that are not equipped with a ''Uerling'' sleeve or an LS-safety sleeve. These connectors allow the operator of the gliders and sailplanes to quickly connect and disconnect the control systems during assembly and disassembly for storage