

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 25**

[Docket No. NM387; Special Conditions No. 25-366-SC]

**Special Conditions: Boeing Model 767-200, -300, and -300F Series Airplanes; Satellite Communication System With Lithium Ion Battery Installation**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions; request for comments.

**SUMMARY:** These special conditions are issued for Boeing Model 767-200, -300, and -300F series airplanes. These airplanes as modified by ABX Air Inc. will have a novel or unusual design feature associated with a satellite communication system which uses lithium ion battery technology. 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:** The effective date of these special conditions is January 25, 2008. We must receive your comments by March 10, 2008.

**ADDRESSES:** You must mail two copies of your comments to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM-113), Docket No. NM387, 1601 Lind Avenue, SW., Renton, Washington 98057-3356. You may deliver two copies to the Transport Airplane Directorate at the above address. You must mark your comments: Docket No. NM387. You can inspect comments in the Rules Docket weekdays, except federal holidays, between 7:30 a.m. and 7 p.m.

**FOR FURTHER INFORMATION CONTACT:** Nazih Khaouly, FAA, Airplane and Flight Crew Interface, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2432; facsimile (425) 227-1149.

**SUPPLEMENTARY INFORMATION:** The FAA has determined that notice and opportunity for prior public comment on these special conditions are unnecessary because the substance of these special conditions has previously been subject to the public comment

process. While we received comments on the previously-proposed special conditions and carefully reviewed them, we determined that no changes were needed to the special conditions, as proposed. In addition, notice and opportunity for prior public comment are impracticable because these procedures would significantly delay issuance of the design approval and thus delivery of the affected aircraft. Therefore, the FAA finds that it is unnecessary to provide an additional opportunity to comment and that good cause exists for making these special conditions effective upon issuance.

**Comments Invited**

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive as well as a report summarizing each substantive public contact with FAA personnel about these special conditions. You can inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except federal holidays.

We will consider all comments we receive by the closing date for comments. We will consider comments filed late, if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

If you want us to let you know we received your comments on these special conditions, send us a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

**Background**

On July 5, 2007, ABX Air, Inc. of Wilmington, Ohio applied for a supplemental type certificate to install a satellite communication system on Boeing Model 767-200, -300, and -300F series airplanes. The satellite communication system contains the following equipment:

- *Wingspeed Corporation* Aircraft Communication Unit,
- *Sensor Systems* GPS/Iridium Antennae,
- Satellite Phone Handset,
- *DAC International* Class II GEN-X Electronic Flight Bag System, and

- *RITEC* Airborne Printer

At present, there is limited experience with use of rechargeable lithium ion batteries in applications involving commercial aviation. However, other users of this technology, ranging from wireless telephone manufacturers to the electric vehicle industry, have noted safety problems with lithium ion batteries. These problems include overcharging, over-discharging, and flammability of cell components.

**1. Overcharging**

In general, lithium ion batteries are significantly more susceptible to internal failures that can result in self-sustaining increases in temperature and pressure (i.e., thermal runaway) than their nickel-cadmium or lead-acid counterparts. This is especially true for overcharging that causes heating and destabilization of the components of the cell, leading to the formation (by plating) of highly unstable metallic lithium. The metallic lithium can ignite, resulting in a self-sustaining fire or explosion. Finally, the severity of thermal runaway due to overcharging increases with increasing battery capacity due to the higher amount of electrolyte in large batteries.

**2. Over-Discharging**

Discharge of some types of lithium ion batteries beyond a certain voltage (typically 2.4 volts) can cause corrosion of the electrodes of the cell, resulting in loss of battery capacity that cannot be reversed by recharging. This loss of capacity may not be detected by the simple voltage measurements commonly available to flight crews as a means of checking battery status—a problem shared with nickel-cadmium batteries.

**3. Flammability of Cell Components**

Unlike nickel-cadmium and lead-acid batteries, some types of lithium ion batteries use liquid electrolytes that are flammable. The electrolyte can serve as a source of fuel for an external fire, if there is a breach of the battery container.

These problems experienced by users of lithium ion batteries raise concern about the use of these batteries in commercial aviation. Accordingly, the proposed use of lithium ion batteries in a satellite communication system on Boeing Model 767-200, -300, and -300F series airplanes has prompted the FAA to review the adequacy of existing regulations in 14 CFR 25. Our review indicates that the existing regulations do not adequately address several failure, operational, and maintenance characteristics of lithium ion batteries

that could affect the safety and reliability of lithium ion battery installations.

The intent of these special conditions is to establish appropriate airworthiness standards for lithium ion batteries in Boeing Model 767-200, -300, and -300F series airplanes modified by ABX Air Inc. and to ensure, as required by 14 CFR 25.601, that these battery installations are not hazardous or unreliable. Accordingly, these special conditions include the following requirements:

- Those provisions of 14 CFR 25.1353 which are applicable to lithium ion batteries.

- The flammable fluid fire protection provisions of 14 CFR 25.863.

In the past, this regulation was not applied to batteries of transport category airplanes, since the electrolytes used in lead-acid and nickel-cadmium batteries are not flammable.

- New requirements to address the hazards of overcharging and over-discharging that are unique to lithium batteries.

- New Instructions for Continuous Airworthiness that include maintenance requirements to ensure that batteries used as spares are maintained in an appropriate state of charge.

#### Type Certification Basis

Under the provisions of 14 CFR 21.101, ABX Air, Inc. must show that the Boeing Model 767-200, -300 and -300F series airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate 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 certification basis for Boeing Model 767-200, -300, and -300F series airplanes includes applicable sections of 14 CFR part 25, effective July 30, 1982, as amended by Amendments 25-1 through 25-45, except for portions of Amendment 25.38. In addition, the certification basis includes certain special conditions, exemptions, equivalent levels of safety, or later amended sections of the applicable part 25 that are not relevant to these special conditions.

If the Administrator finds that the applicable airworthiness regulations (i.e., part 25, as amended) do not contain adequate or appropriate safety standards for Boeing Model 767-200, -300, and -300F series airplanes because of a novel or unusual design

feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Boeing Model 767-200, -300, and -300F series airplanes 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 issues special conditions, as defined in 14 CFR 11.19, under 14 CFR 11.38, and they become part of the type certification basis in accordance with § 21.101.

Special conditions are initially applicable to the models for which they are issued. Should ABX Air, Inc. apply for a supplemental type certificate to modify any other model included on Type Certificate No. A1NM to incorporate the same or similar novel or unusual design feature, these special conditions would also apply to the other model.

#### Novel or Unusual Design Features

The Boeing Model 767-200, -300, and 300F series airplanes—as modified by ABX Air Inc. to include a satellite communication system which uses lithium ion battery technology—will incorporate a novel or unusual design feature. Because of rapid improvements in airplane technology, 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.

The satellite communication system will include a lithium ion battery installation. Large, high capacity, rechargeable lithium ion batteries are a novel or unusual design feature in transport category airplanes. This type of battery has certain failure, operational, and maintenance characteristics that differ significantly from those of the nickel-cadmium and lead-acid rechargeable batteries currently approved for installation on large transport category airplanes. The FAA issues these special conditions to require that (1) all characteristics of the lithium ion battery and its installation that could affect safe operation of the satellite communication system are addressed, and (2) appropriate maintenance requirements are established to ensure that electrical power is available from the batteries when it is needed.

#### Applicability

As discussed above, these special conditions are applicable to the Boeing Model 767-200, -300, and -300F series airplanes as modified by ABX Air Inc. Should ABX Air, Inc. apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A1NM to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

#### Conclusion

This action affects only certain novel or unusual design features of the Boeing Model 767-200, -300, and 300F series airplanes as modified by ABX Air Inc. It is not a rule of general applicability and affects only the applicant which applied to the FAA for approval of these features on the airplane.

The substance of these special conditions has been subjected to the notice and comment period in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. For this reason and because a delay would significantly affect the certification of the airplane which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable and that good cause exists for adopting these special conditions upon issuance. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comments described above.

#### 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

The FAA proposes the following special conditions as part of the type certification basis for Boeing Model 767-200, -300, and 300F series airplanes modified by ABX Air Inc. in lieu of the requirements of 14 CFR 25.1353(c)(1) through (c)(4), Amendment 25-113.

Lithium ion batteries and battery installations on Boeing 767-200, -300, and -300F series airplanes 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 gases 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 which is 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 gases 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 to assure that the lithium ion battery is sufficiently charged at appropriate intervals specified by the battery manufacturer to ensure that batteries whose function is required for safe operation of the airplane will not degrade below specified ampere-hour levels sufficient to power the electronic flight bag (EFB) applications that are required for continued safe flight and landing. 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. Precautions should be included in the Instructions for Continued Airworthiness maintenance instructions to prevent mishandling of the lithium ion battery which could result in short-circuit or other unintentional damage that could result in personal injury or property damage.

**Note 1:** The term, "sufficiently charged" means the charge that is applied to rechargeable lithium ion batteries, which diminishes during the life of batteries with respect to the retentive capacity of the batteries to deliver available power—where capacity is the total quantity of electricity of a cell or battery, expressed in ampere-hours. Battery life is influenced by its internal chemical reaction and by other factors, such as temperature, shock, the number of recharges, etc.

**Note 2:** These special conditions are not intended to replace 14 CFR 25.1353(c), Amendment 25-113 in the certification basis of the ABX, Air Inc supplemental type certificate. These special conditions apply only to lithium ion batteries and their installations. The requirements of 14 CFR 25.1353(c), Amendment 25-113 remain in effect for batteries and battery installations on the ABX Air supplemental type certificate that do not use lithium ion batteries.

Compliance with the requirements of this Special Condition must be shown by test or analysis, with the concurrence of the Chicago Aircraft Certification Office.

Issued in Renton, Washington, on January 25, 2008.

**Ali Bahrami,**

*Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. E8-2224 Filed 2-6-08; 8:45 am]

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## SECURITIES AND EXCHANGE COMMISSION

### 17 CFR Part 200

[Release No. 34-57262]

#### Delegation of Authority to the Director of the Division of Corporation Finance

**AGENCY:** Securities and Exchange Commission.

**ACTION:** Final rule.

**SUMMARY:** The Securities and Exchange Commission is amending its Rules of Organization and Program Management to delegate its authority to the Director of the Division of Corporation Finance to grant or deny exemptions pursuant to Section 36 of the Securities Exchange Act of 1934 from the requirement for registrants in connection with an annual meeting of security holders to furnish an annual report to security holders that contains audited financial statements as required by rules under the Exchange Act under certain limited circumstances. The delegation of authority is intended to conserve Commission resources by permitting the staff to review and act on exemptive applications under Section 36 when appropriate.

**DATES:** *Effective Date:* February 7, 2008.

**FOR FURTHER INFORMATION CONTACT:** Celeste M. Murphy, Special Counsel, at (202) 551-3440, Office of Mergers and Acquisitions, Division of Corporation Finance, Securities and Exchange Commission, 100 F Street, NE., Washington, DC 20549-3628.

**SUPPLEMENTARY INFORMATION:** The Commission today announces an amendment to its Organization and Program Management Rules governing Delegations of Authority to the Director of the Division of Corporation Finance.<sup>1</sup> The amendment adds to Rule 30-1 a new paragraph (e)(18) authorizing the Director to grant or deny exemptions from the requirements of Rule 14a-3(b) and Rule 14c-3(a) under the Exchange Act, pursuant to Section 36 of the Exchange Act, for audited financial statements to be included in the annual report to be furnished to security holders in connection with an annual meeting of security holders.

A number of companies have faced the dilemma of being required to hold a meeting of security holders when they are unable to deliver current audited financial statements. These companies may be compelled to hold meetings of their security holders pursuant to the provisions of certain state corporation

<sup>1</sup> 17 CFR 200.30-1.