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-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 battery installations must have a system to automatically control the charging rate of the battery, to prevent battery overheating or overcharging, and,

a. 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,

b. 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-battery installation, the function of which is required for safe operation of the airplane, must incorporate a monitoring-and-warning feature that provides an indication to the appropriate flight-crew members when 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 (and 26.11), must contain maintenance steps to:

a. Assure that the lithium battery is sufficiently charged at appropriate intervals specified by the battery manufacturer.

b. Ensure the integrity of lithium 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.

The Instructions for Continued Airworthiness maintenance procedures must contain precautions to prevent mishandling of the lithium battery, which could result in short-circuit or other unintentional damage that, in turn, could result in personal injury or property damage.

Note 1: The term ''sufficiently charged'' means that the battery will retain enough of a charge, expressed in ampere-hours, to ensure that the battery cells will not be damaged. A battery cell may be damaged by lowering the charge below a point where the battery's ability to charge and retain a full charge is reduced. This reduction would be greater than the reduction that may result from normal, operational degradation.

Note 2: These special conditions are not intended to replace 14 CFR 25.1353(b) in the certification basis of the Boeing 737–600, –700, –800, and –900 Series airplanes. These special conditions apply only to lithium batteries and their installations. The requirements of 14 CFR 25.1353(b) remain in effect for batteries and battery installations in Boeing 737–600, –700, –800, and –900 Series airplanes that do not use lithium batteries.

Compliance with the requirements of these special conditions must be shown by test, or analysis by the Aircraft Certification Office, or its designees, with the concurrence of the FAA Transport Airplane Directorate.

Issued in Renton, Washington, on March 30, 2009.

Stephen P. Boyd,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E9–7907 Filed 4–7–09; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM402; Special Conditions No. 25–381–SC]

Special Conditions: TTF Aerospace, LLC, Modification to Boeing Model 767–400 Series Airplanes; Aft Lower-Lobe Crew-Rest Module (CRM)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for Boeing Model 767–400 series airplanes. These airplanes, modified by TTF Aerospace, LLC (TTF), will have a novel or unusual design feature associated with an aft, lower-lobe, crew-rest module (CRM). 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 for these special conditions is March 31, 2009. We must receive comments by May 26, 2009.

ADDRESSES: Please mail two copies of your comments to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM–113), Docket No. NM402, 1601 Lind Avenue, SW., Renton, Washington 98057–3356. You may deliver two copies to the Transport Airplane Directorate at the same address. You must mark your comments: Docket No. NM402. You can inspect comments in the Rules Docket weekdays, except federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: John Shelden, FAA, Airframe/Cabin Safety Branch, ANM–115, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington, 98057–3356; telephone (425) 227–2785; facsimile (425) 227–1320.

SUPPLEMENTARY INFORMATION: The FAA has determined that notice and opportunity for prior public comment is impracticable, because these procedures would significantly delay issuance of the design approval and thus delivery of the affected aircraft. In addition, the substance of these special conditions has been subject to the public-comment process in several prior instances with no substantive comments received. The FAA therefore finds 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 may change these special conditions based on the comments we receive.

If you want us to acknowledge receipt of your comments on these special conditions, include with your comments a self-addressed, stamped postcard on which you have written the docket number. We will stamp the date on the postcard and mail it back to you.

Background

On June 20, 2008, TTF Aerospace, LLC, applied for a supplemental type certificate to permit installation of an aft, lower-lobe, crew-rest module (CRM) in Boeing 767–400 series airplanes.

The CRM will be a one-piece, self-contained unit to be installed under the passenger-cabin floor in the aft portion of the aft cargo compartment. It will be attached to the existing cargo-restraint system, and the aft portion of the crew rest will be hard-mounted to the aircraft structure. Occupancy for the CRM will be limited to a maximum of five (5) occupants. An approved seat or berth, able to withstand the maximum flight loads when occupied, will be provided for each occupant permitted in the CRM. The CRM is intended to be occupied only in flight, i.e., not during taxi, takeoff, or landing. A smoke-detection system, manual fire-fighting system, oxygen system, and occupant amenities will be provided.

Two entry/exits between the main-deck area will be required. The floor structure will be modified to provide access for the main-entry hatch and the emergency-access hatch.

Type Certification Basis

Under the provisions of § 21.101, TTF must show that Boeing Model 767–400 series airplanes, with the CRM, continue to meet either:

(1) The applicable provisions of the regulations incorporated by reference in Type Certificate No. A1NM, or

(2) The applicable regulations in effect on the date of TTF's 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 767–400 series airplanes is 14 CFR part 25, as amended by Amendments 25–1 through 25–89. Refer to Type Certificate No. A1NM for a complete description of the certification basis for this model.

According to 14 CFR 21.16, if the Administrator finds that the applicable airworthiness regulations do not contain adequate or appropriate safety standards for the Boeing Model 767–400 series airplanes because of a novel or unusual design feature, the Administrator prescribes special conditions for the airplane.

As defined in 14 CFR 11.19, special conditions are issued in accordance with 14 CFR 11.38 and become part of the type-certification basis in accordance with 14 CFR 21.101.

Special conditions are initially applicable to the model for which they are issued. If the type certificate for that model is amended to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions would also apply to that model. Similarly, if any other model already included on the same type certificate is modified to incorporate the same or similar novel or unusual design feature, the special conditions would apply to that other model under the provisions of 14 CFR 21.101.

In addition to the applicable airworthiness regulations and special conditions, Boeing Model 767–400 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.

Novel or Unusual Design Features

While installation of a CRM is not a new concept for large, transport-category airplanes, each module has unique features based on its design, location, and use. The CRM to be installed on the Boeing Model 767–400 series airplanes is novel in that it will be located below the passenger-cabin floor in the aft portion of the aft cargo compartment.

Because of the novel or unusual features associated with the installation of a CRM, special conditions are considered necessary to provide a level of safety equal to that established by the airworthiness regulations incorporated by reference in the type certificates of these airplanes. These special conditions do not negate the need to address other applicable part 25 regulations.

Operational Evaluations and Approval

These special conditions specify requirements for design approvals (i.e., type-design changes and supplemental type certificates) of CRMs administered by the FAA's Aircraft Certification Service. The FAA's Flight Standards Service, Aircraft Evaluation Group, must evaluate and approve the ''basic suitability'' of the CRM for occupation by crewmembers before the module may be used. If an operator wishes to use a CRM as ''sleeping quarters,'' the module must undergo an additional operational evaluation and approval. The Aircraft Evaluation Group would evaluate the CRM for compliance to §§ 121.485(a) and 121.523(b), with Advisory Circular 121–31, Flight Crew Sleeping Quarters and Rest Facilities, providing one method of compliance to these operational regulations.

To obtain an operational evaluation, the supplemental-type-design holder must contact the Aircraft Evaluation Group within the Flight Standards Service that has operational-approval authority for the project. In this instance, it is the Seattle Aircraft Evaluation Group. The supplemental-type-design holder must request a ''basic suitability'' evaluation or a ''sleeping quarters'' evaluation of the crew-rest module. The supplemental-type-design holder may make this request concurrently with the demonstration of compliance with these special conditions.

The Boeing Model 767–400 Flight Standardization Board Report Appendix will document the results of these evaluations. In discussions with the FAA Principal Operating Inspector, individual operators may refer to these standardized evaluations as the basis for an operational approval, instead of an on-site operational evaluation.

Any change to the approved CRM configuration requires an operational re-evaluation and approval, if the change affects any of the following:

- Procedures for emergency egress of crewmembers,
- Other safety procedures for crewmembers occupying the CRM, or
- Training related to these procedures.

The applicant for any such change is responsible for notifying the Seattle Aircraft Evaluation Group that a new evaluation of the CRM is required.

All instructions for continued airworthiness, including service bulletins, must be submitted to the Seattle Aircraft Evaluation Group for approval before the FAA approves the modification.

Discussion of Special Conditions No. 9 and 12

The following clarifies the intent of Special Condition No. 9 relative to the requirements of § 25.1439(a):

> Amendment 25–38 modified the requirements of § 25.1439(a) by adding, ''In addition, protective breathing equipment must be installed in each isolated separate compartment in the airplane, including upper and lower lobe galleys, in which crewmember occupancy is permitted during flight for the maximum number of crewmembers expected to be in the area during any operation.''

The CRM is an isolated, separate compartment, so § 25.1439(a) is applicable. However, the requirements of § 25.1439(a) for protective breathing equipment in isolated, separate compartments are not appropriate, because the CRM is novel and unusual in terms of the number of occupants.

In 1976, when Amendment 25–38 was adopted, small galleys were the only

isolated, separate compartments that had been certificated. Two crewmembers were the maximum expected to occupy those galleys.

These special conditions address a CRM which can accommodate up to five crewmembers. This number of occupants in an isolated, separate compartment was not envisioned at the time Amendment 25–38 was adopted. It is not appropriate for all occupants to don protective breathing equipment in the event of a fire, because the first action should be for each occupant to leave the confined space, unless that occupant is fighting the fire. Taking the time to don protective breathing equipment would prolong the time for the emergency evacuation of the occupants and possibly interfere with efforts to extinguish the fire.

Regarding Special Condition No. 12, the FAA considers that during the 1-minute smoke-detection time, penetration of a small quantity of smoke from the aft, lower-lobe, CRM into an occupied area of the airplane would be acceptable, given the limitations in these special conditions. The FAA considers that the special conditions place sufficient restrictions on the quantity and type of material allowed in crew carry-on bags that the threat from a fire in the remote CRM would be equivalent to the threat from a fire in the main cabin.

Applicability

As discussed above, these special conditions are applicable to Boeing Model 767–400 series airplanes as modified by TTF to include an aft lower-lobe CRM. If TTF Aerospace applies at a later date for a change to the supplemental type certificate to include another model listed on the same type-certificate data sheet, which incorporates the same or similar novel or unusual design feature, these special conditions would also apply to that model.

Conclusion

This action affects only certain novel or unusual design features on Boeing Model 767–400 series airplanes. It is not a rule of general applicability, and it affects only the applicant which applied to the FAA for approval of these features on the airplane.

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 Boeing Model 767–400 series airplanes, modified by TTF Aerospace.

1. Occupancy of the aft, lower-lobe, crew-rest module (CRM) is limited to the total number of installed bunks and seats in each module. An approved seat or berth, able to withstand the maximum flight loads when occupied for each occupant permitted in the CRM, must be provided. The maximum occupancy in the CRM is five.

(a) There must be appropriate placard(s) displayed in a conspicuous place at each entrance to the CRM to indicate the following:

(1) The maximum number of occupants;

(2) Occupancy is restricted to crewmembers who are trained in evacuation procedures for the CRM;

(3) Occupancy is prohibited during taxi, take-off and landing;

(4) Smoking is prohibited in the CRM;

(5) Hazardous quantities of flammable fluids, explosives, or other dangerous cargo are prohibited in the CRM.

(6) Stowage in the CRM must be limited to emergency equipment, airplane-supplied equipment (e.g., bedding), and crew personal luggage. Cargo or passenger baggage is not allowed.

(b) At least one ashtray must be located conspicuously on or near the side of any entrance to the CRM.

(c) A means must be available to prevent passengers from entering the CRM in the event of an emergency or when no flight attendant is present.

(d) Any door installed between the CRM and the passenger cabin must be designed to be opened quickly from inside the module, even when crowding occurs at each side of the door.

(e) All doors installed in the evacuation routes must be designed to prevent anyone from being trapped inside the module. If a locking mechanism is installed, it must be capable of being unlocked from the outside without the aid of special tools. The lock must not prevent opening from the inside of the module at any time.

2. At least two emergency evacuation routes must be available, each of which can be used by each occupant of the CRM to rapidly evacuate to the main cabin. The exit door/hatch for each route must be able to be closed from the main cabin after evacuation of the CRM. In addition:

(a) The routes must be located with one at each end of the module, or with two having sufficient separation within the module and between the routes to minimize the possibility of an event (either inside or outside the CRM) rendering both routes inoperative.

(b) The routes must minimize the possibility of blockage which might result from fire, mechanical, or structural failure, or from persons standing on top of or against the escape route. If an evacuation route uses an area where normal movement of passengers occurs, it must be demonstrated that passengers would not impede egress to the main deck. If a hatch is installed in an evacuation route, the point at which the evacuation route terminates in the passenger cabin should not be located where normal movement by passengers or crew occurs. Examples include the main aisle, cross aisle, passageway, or galley complex. If it is not possible to avoid such a location, the hatch or door must be capable of being opened when a person, the weight of a 95th percentile male, is standing on the hatch or door. The use of evacuation routes must not depend on any powered device. If low headroom is at or near an evacuation route, provisions must be in place to prevent or to protect occupants of the CRM from head injury.

(c) Emergency-evacuation procedures must be in place, including procedures for the emergency evacuation of an incapacitated occupant from the crew-rest module. All of these procedures must be transmitted to all operators for incorporation into their training programs and appropriate operational manuals.

(d) There must be a limitation, in the Airplane Flight Manual or other suitable means, for training crewmembers in the use of evacuation routes.

3. An incapacitated person, representative of a 95th percentile male, must be capable of being evacuated from the CRM to the passenger-cabin floor. The evacuation must be demonstrated for all evacuation routes. A flight attendant or other crewmember (a total of one assistant within the CRM) may provide assistance in the evacuation. Up to three persons in the main passenger compartment may provide additional assistance. For evacuation routes having stairways, the additional assistants may descend to one-half the elevation change from the main deck to the lower-deck compartment or to the first landing, whichever is higher.

4. The following signs and placards must be provided in the CRM:

(a) At least one exit sign, which meets the requirements of § 25.812(b)(1)(i) at Amendment 25–58, located near each exit. However, the exit sign may have a

reduced background area of no less than 5.3 square inches (excluding the letters), provided that it is installed so that the material surrounding the exit sign is light in color (e.g., white, cream, or light beige). If the material surrounding the exit sign is not light in color, an exit sign with a minimum of a one-inch-wide background border around the letters would also be acceptable.

(b) An appropriate placard located near each exit, defining the location and the operating instructions for each evacuation route;

(c) Placards must be readable from a distance of 30 inches under emergency-lighting conditions; and

(d) The exit handles and placards (see 4.(b) above) for each evacuation route must be illuminated to at least 160 micro-lamberts under emergency-lighting conditions.

5. In the event of failure of the airplane's main power system or of the normal lighting system for the CRM, emergency illumination to the CRM must be automatically provided.

(a) This emergency illumination must be independent of the main lighting system.

(b) The sources of general cabin illumination may be common to both the emergency- and main-lighting systems, if the power supply to the emergency-lighting system is independent of the power supply to the main lighting system.

(c) The illumination level must be sufficient for the occupants of the CRM to locate and transfer to the main passenger-cabin floor by means of each evacuation route.

(d) The illumination level must be sufficient for each occupant of the CRM to locate a deployed oxygen mask, including when privacy curtains, if installed, are in the closed position.

6. Two-way voice communications must be available between crewmembers on the flightdeck and occupants of the CRM. Public-address-system microphones must be located at each flight-attendant seat that is required to be near a floor-level exit in the passenger cabin, per § 25.785(h) at Amendment 25–51. The public-address system must allow two-way voice communications between flight attendants and the occupants of the CRM. However, one microphone may serve more than one exit, if the proximity of the exits allows unassisted verbal communication between seated flight attendants.

7. Manual activation of an aural emergency-alarm system must be available, audible during normal and emergency conditions, to enable crewmembers, on the flight deck and at each pair of required floor-level emergency exits, to alert occupants of the CRM to an emergency situation. Use of a public-address or crew-interphone system is acceptable, provided it has an adequate means of differentiating between normal and emergency communications. The system must be powered, in flight, for at least ten minutes after the shutdown or failure of all engines and auxiliary power units, or the disconnection or failure of all power sources that depend on the continued operation of the engines and auxiliary power units.

8. An indication to fasten seatbelts must be readily detectable by seated or standing occupants of the CRM. In the event no seats are available, at least one means, such as sufficient handholds, must be in place to address anticipated turbulence. Seatbelt-type restraints must be provided for berths and must be compatible for the sleeping attitude during cruise conditions. A placard must be located on each berth requiring that seat belts be fastened when the berth is occupied. If compliance with any of the other requirements of these special conditions is predicated on specific head location, a placard must identify the head position.

9. In lieu of the requirements specified in § 25.1439(a) at Amendment 25–38 that pertain to isolated compartments, and to provide a level of safety equivalent to that which is provided occupants of a small, isolated galley, the following equipment must be provided in the CRM:

(a) At least one approved, hand-held fire extinguisher, appropriate for the kinds of fires likely to occur; and

(b) Protective breathing equipment approved to Technical Standard Order (TSO)–C116 (or equivalent), suitable for fire-fighting for at least two persons. If three or more hand-held fire extinguishers are installed, protective breathing equipment must be available for one person for each hand-held fire extinguisher.

Note: Additional protective breathing equipment and fire extinguishers in specific locations (beyond the minimum numbers prescribed in Special Condition No. 9) may be required as a result of any egress analysis accomplished to satisfy Special Condition No. 2(a).

(c) One flashlight.

10. A smoke- or fire-detection system (or systems) must be installed to monitor each occupiable area within the CRM, including areas partitioned by curtains. Flight tests must be conducted to show compliance with this requirement. Each system (or systems) must provide the following:

(a) A visual indication to the flightdeck within one minute after the start of a fire;

(b) An aural warning in the CRM; and

(c) A warning in the main passenger cabin. This warning must be readily detectable by a flight attendant, taking into consideration the positioning of flight attendants throughout the main passenger compartment during various phases of flight.

11. The CRM must be designed so that fires within the CRM can be controlled without a crewmember entering the module or so that crewmembers equipped for fire fighting have unrestricted access to the module. The time for a crewmember on the main deck to react to the fire alarm, don protective gear (such as protective breathing equipment and gloves), obtain fire-fighting equipment, and gain access to the module must not exceed the time for the module to become smoke-filled, making it difficult to locate the fire source.

12. There must be a means to exclude hazardous quantities of smoke or extinguishing agent, originating in the CRM, from entering any other compartment occupied by crewmembers or passengers. This means must include the time periods during the evacuation of the CRM and, if applicable, when accessing the CRM to manually fight a fire. Smoke entering any other compartment occupied by crewmembers or passengers, when the entrance to the CRM is opened during an emergency evacuation, must dissipate within five minutes after the entrance to the module is closed. Hazardous quantities of smoke may not enter any other compartment occupied by crewmembers or passengers during subsequent access to manually fight a fire in the CRM. (The amount of smoke entrained by a firefighter exiting the module through the access is not considered hazardous). During the 1-minute smoke-detection time, penetration of a small quantity of smoke from the CRM into an occupied area is acceptable. Flight tests must be conducted to show compliance with this requirement.

If a built-in fire extinguishing system is used instead of manual fire fighting, the fire-extinguishing system must be designed so that no hazardous quantities of extinguishing agent enter other compartments occupied by passengers or crew. The system must have adequate capacity to suppress any fire occurring in the CRM, considering the fire threat, the volume of the module, and the ventilation rate.

13. A supplemental oxygen system must be provided, equivalent to that provided for main-deck passengers, for

each seat and berth in the CRM. The system must provide aural and visual signals to warn the CRM occupants to don oxygen masks in the event of decompression. The warning must activate before the cabin-pressure altitude exceeds 15,000 feet, and must sound continuously for a minimum of five minutes or until a reset pushbutton in the CRM is depressed. Procedures for occupants of the CRM to follow, in the event of decompression, must be established. These procedures must be transmitted to the operators for incorporation into their training programs and appropriate operational manuals.

14. The following requirements apply to CRMs that are divided into several sections by curtains or partitions:

(a) To warn sleeping occupants, an aural alert must be in place, that is audible in each section of the CRM, and that accompanies automatic presentation of supplemental-oxygen masks. In each section where seats or berths are not installed, there must be a visual indicator that occupants must don oxygen masks. A minimum of two supplemental oxygen masks is required for each seat or berth. The crewmembers must also be able to manually deploy the oxygen masks from the flightdeck.

(b) A placard must be located adjacent to each curtain that visually divides or separates the CRM into small sections for privacy. The placard must specify that the curtain remains open when the private section it creates is unoccupied.

(c) For each section of the CRM created by a curtain, the following requirements of these special conditions apply, both with the curtain open and with the curtain closed:

(1) Emergency illumination (Special Condition No. 5);

(2) Emergency alarm system (Special Condition No. 7);

(3) Seatbelt-fasten signal (see Special Condition No. 8) or return-to-seat signal, as applicable; and

(4) Smoke- or fire-detection system (Special Condition No. 10).

(d) Crew-rest modules, visually divided to the extent that evacuation could be affected, must contain exit signs that direct occupants to the primary stairway exit. Exit signs must be located in each separate section of the CRM, and that meet the requirements of § 25.812(b)(1)(i) at Amendment 25–58. An exit sign with reduced background area, as described in Special Condition No. 4(a), may be used to meet this requirement.

(e) For sections within a CRM that are created by a partition with a door separating the sections, the following requirements of these special conditions must be met both with the door open and with the door closed:

(1) A secondary evacuation route must be available from each section to the main deck. Alternatively, any door between the sections must preclude anyone from being trapped inside the compartment. The ability to remove an incapacitated occupant from within this area must be considered. A secondary evacuation route from a small room, designed for only one occupant for a short time, such as a changing area or lavatory, is not required. However, the ability to remove an incapacitated occupant from within this area must be considered.

(2) Doors between the sections must be capable of opening when crowded against, even when crowding occurs at each side of the door.

(3) No more than one door may be located between any seat or berth and the primary stairway exit.

(4) Exit signs must be located in each section, and must meet the requirements of § 25.812(b)(1)(i) at Amendment 25–58. These signs must direct occupants to the primary stairway exit. An exit sign with reduced background area, as described in Special Condition No. 4(a), may be used to meet this requirement.

(5) The following Special Conditions apply both with the door open and with the door closed:

- Special Conditions No. 5 (emergency illumination),
- No. 7 (emergency alarm system),
- No. 8 (fasten-seatbelt signal or return-to-seat signal, as applicable) and
- No. 10 (smoke- or fire-detection system)

(6) Special Conditions No. 6 (two-way voice communication) and No. 9 (emergency fire-fighting and protective equipment) apply independently for each separate section, except for lavatories or other small areas that are not occupied for extended periods.

15. Each waste-disposal receptacle must have a built-in fire extinguisher that discharges automatically upon occurrence of a fire in the receptacle.

16. Materials, including finishes or decorative surfaces applied to the materials, must comply with the flammability requirements of § 25.853 at Amendment 25–116, and mattresses must comply with the applicable flammability requirements of § 25.853(c) at Amendment 25–116.

17. All lavatories within the CRM must meet the requirements for a lavatory installed on the main deck, except with regard to Special Condition No.10 for smoke detection.

18. When a CRM is installed or enclosed as a removable module in part of a cargo compartment or is located directly adjacent to a cargo compartment without an intervening cargo compartment wall, the following apply:

(a) Any wall of the module that forms part of the boundary of the reduced cargo compartment, subject to direct flame impingement from a fire in the cargo compartment, and that includes any interface between the module and the airplane structure or systems, must meet the applicable requirements of § 25.855 at Amendment 25–72.

(b) When the CRM is not installed, the fire-protection level of the cargo compartment must comply with the following regulations:

- § 25.855 at Amendment 25–72,
- § 25.857 at Amendment 25–60, and
- § 25.858 at Amendment 25–54.

(c) Use of each emergency-evacuation route must not require occupants of the CRM to enter the cargo compartment to allow them to return to the passenger compartment.

(d) The aural warning in Special Condition No.7 must sound in the CRM in the event of a fire in the cargo compartment.

19. All enclosed stowage compartments within the CRM that are not limited to stowage of emergency equipment or airplane-supplied equipment (e.g., bedding) must meet the design criteria in the table below. As indicated in the table, this special condition does not address enclosed stowage compartments with an interior volume greater than 200 cubic feet.

(Fire protection for such large stowage compartments would necessitate design requirements and operational procedures similar to those for Class C cargo compartments.)

Fire protection features	Stowage compartment interior volumes		
	Less than 25 ft^3	25 ft^3 to 57 ft^3	57 ft^3 to 200 ft^3
Materials of Construction [1]	Yes	Yes	Yes.

Fire protection features	Stowage compartment interior volumes		
	Less than 25 ft[3]	25 ft[3] to 57 ft[3]	57 ft[3] to 200 ft[3]
Detectors[2]	No	Yes	Yes.
Liner[3]	No	No	Yes.
Locating Device[4]	No	Yes	Yes.

[1] Material: The material used to construct each enclosed stowage compartment must at least be fire resistant and must meet the flammability standards for interior components specified in § 25.853. For compartments with an interior volume less than 25 cubic feet, the design must contain a fire likely to occur within the compartment under normal use.

[2] Detectors: Enclosed stowage compartments equal to or exceeding 25 cubic feet in interior volume must have a smoke- or fire-detection system to ensure that a fire can be detected within 1 minute. Flight tests must be conducted to show compliance with this requirement. Each system must provide the following:

(a) A visual indication in the flight deck within 1 minute after the start of a fire;

(b) An aural warning in the CRM; and

(c) A warning in the main passenger compartment. This warning must be readily detectable by a flight attendant, taking into account the location of flight attendants throughout the main passenger compartment during various phases of flight.

[3] Liner: If the material used to construct the stowage compartment meets the flammability requirements of a liner for a Class B cargo compartment, then no liner would be required for enclosed stowage compartments equal to or greater than 25 cubic but less than 57 cubic feet in interior volume. For those enclosed stowage compartments the interior volume of which is equal to or greater than 57 cubic feet, but less than or equal to 200 cubic feet, the liner must meet the requirements of § 25.855 at Amendment 25–72 for a Class B cargo compartment.

[4] Location Detector: Crew-rest areas that contain enclosed stowage compartments interior volumes of which exceed 25 cubic feet, and that are located away from one central location, such as the entry to the CRM or a common area within the CRM, would require additional fire-protection devices to assist the firefighter in determining the location of a fire.

Issued in Renton, Washington, on March 31, 2009.

Stephen P. Boyd,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E9–7901 Filed 4–7–09; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. NM395; Special Conditions No. 25–379–SC]

Special Conditions: Dassault Falcon 2000 Series Airplanes; Aircell Airborne Satcom Equipment Consisting of a Wireless Handset and Associated Base Station, With Lithium Battery Installations

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the Dassault Falcon 2000 series airplanes. These airplanes, as modified by Aircell LLC, will have a novel or unusual design feature associated with the Aircell airborne satcom equipment (ASE) which use lithium 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: *Effective Date:* May 8, 2009.

FOR FURTHER INFORMATION CONTACT: Nazih Khaouly, FAA, Airplane and Flight Crew Interface Branch, 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:

Background

On March 15, 2007, Aircell LLC, applied for a type design change to an existing STC (ST01388WI–D), to install additional equipment on Dassault Falcon 2000 series airplanes. This installation adds components to the existing airplane installation to include a low power Wi-Fi handset containing a single cell lithium polymer rechargeable battery. The battery identified for application in this design is a low capacity, single cell lithium polymer rechargeable battery, with a nominal capacity of 1400mAh and a nominal voltage of 3.7V. The battery has a weight of 26.5 grams. The battery has been Underwriters Laboratories, Inc. (UL) tested and qualified by DO–160E in the Aircell handset (P12857). The design is supported by a System Safety Assessment/Functional Hazard Assessment (SSA/FHA) analysis. The Aircell Wi-Fi handset, which is a component of the Aircell ASE, consists of a wireless handset and associated base station (cradle and charging unit), both with protective circuits and fuse devices which provide multiple levels of redundant protection from hazards, such as overcharging or discharging. The lithium battery is installed in the handset.

A lithium 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 is issuing these special conditions to require that (1) all characteristics of the lithium batteries and their installations that could affect safe operation of the Dassault Falcon 2000 are addressed, and (2) appropriate continued airworthiness instructions, which include maintenance requirements, are established to ensure the availability of electrical power from the batteries when needed. At present, there is limited experience with use of rechargeable lithium 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 batteries. These problems include overcharging, over-discharging, and flammability of cell components.

1. Overcharging

In general, lithium 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