Special Conditions: GDC Technics, Boeing Model 777–300ER Series Airplane; Lower Lobe Crew Rest Compartment

These special conditions are issued for the Boeing Model 777–300ER series airplane. This airplane, as modified by GDC Technics, will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. This design feature is a lower lobe crew rest (LLCR) compartment located under the passenger cabin floor of the Boeing Model 777–300ER series airplane. 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: This action is effective on GDC Technics, on March 25, 2020. Send comments on or before May 11, 2020.

ADDRESSES: Send comments identified by Docket No. FAA–2020–0223 using any of the methods:
- Federal eRegulations Portal: Go to http://www.regulations.gov/ and follow the online instructions for sending your comments electronically.
- Hand Delivery or Courier: Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at 202–493–2251.
- Privacy: The FAA will post all comments it receives, without change, to http://www.regulations.gov/, including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT’s complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477–19478).

Agency: Federal Aviation Administration (FAA), DOT.

Action: Final special conditions; request for comments.

Summary: These special conditions are issued for the Boeing Model 777–300ER series airplane. This airplane, as modified by GDC Technics, will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. This design feature is a lower lobe crew rest (LLCR) compartment located under the passenger cabin floor of the Boeing Model 777–300ER series airplane. 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.

Deborah J. Beverage, Director, Policy and Program Development, 2200 S. 216th Street, Des Moines, IA 50310; phone: 515–515–7500; email: Shannon.Lennon@faa.gov.

Supplementary Information: The substance of these special conditions previously has been published in the Federal Register for public comment. These special conditions have 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. Therefore, the FAA has determined that prior public notice and comment are unnecessary, and finds that, for the same reason, good cause exists for adopting these special conditions upon publication in the Federal Register.

Comments Invited

The FAA invites 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.

The FAA will consider all comments received by the closing date for comments. The FAA may change these special conditions based on the comments received.

Background

On April 25, 2016, GDC Technics applied for a supplemental type certificate for a LLCR compartment in the Boeing Model 777–300ER series airplane. The Boeing Model 777–300ER series airplane is a twin-engine, transport category airplane, with capacity for 550 passengers, and a maximum takeoff weight of 775,000 pounds.

The LLCR is located under the passenger cabin floor in the aft cargo compartment of Boeing Model 777–300ER series airplanes. Occupancy for the LLCR compartment is limited to a maximum of six (6) occupants. The LLCR will only be occupied in flight, i.e., not during taxi, takeoff, or landing. Six berths are able to withstand the maximum flight loads when the LLCR compartment is at maximum capacity. New components for smoke detection system, oxygen system, emergency lighting system and manual firefighting system (fire extinguisher) will be installed and integrated into existing systems.
Main access to the LLCR compartment is gained via fixed stairs through a hatch in the floor of the main deck. The hatch is hidden from cabin passengers by a full size cabinet. Secondary emergency egress is provided via an additional hatch located forward of the main entrance.

Type Certification Basis

Under the provisions of title 14, Code of Federal Regulations (14 CFR) 21.101, GDC Technics must show that the Boeing Model 777–300ER series airplane, as changed, continues to meet the applicable provisions of the regulations listed in Type Certificate No. T00001SE, or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (e.g., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Boeing Model 777–300ER series airplane because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16. Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Boeing Model 777–300ER series airplane must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34, and the noise certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.101.

Novel or Unusual Design Features

The Boeing Model 777–300ER series airplane will incorporate the following novel or unusual design features:

A LLCR compartment located under the passenger cabin floor of the Boeing Model 777–300ER series airplane.

Discussion

While the installation of a crew rest compartment is not a new concept for large transport category airplanes, each crew rest compartment has unique features based on design, location, and use on the airplane. The LLCR compartment is novel in that it will be located below the passenger cabin floor in the aft cargo compartment of the Boeing Model 777–300ER series airplane. Due to the novel or unusual features associated with the installation of a LLCR compartment, 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, as applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature.

Most of these special conditions come from § 25.819, but more stringent standards for fire protection and emergency egress are required because of design features and location of the LLCR compartment. The applicant should note that the FAA considers smoke or fire detection and fire suppression systems (including airflow management features that prevent hazardous quantities of smoke or fire extinguishing agent from entering any other compartment occupied by crewmembers or passengers) for crew rest compartments complex in terms of paragraph 6d of Advisory Circular (AC) 25.1309–1A, “System Design and Analysis,” dated June 21, 1988. In addition, the FAA considers failure of the crew rest compartment fire protection system (i.e., smoke or fire detection and fire suppression systems), in conjunction with a crew rest fire, to be a catastrophic event. Based on the “Depth of Analysis Flowchart” shown in figure 2 of AC 25.1309–1A, the depth of analysis should include both qualitative and quantitative assessments. Refer to paragraphs 8d, 9, and 10 of AC 25.1309–1A. Note that flammable fluids, explosives, or other dangerous cargo are prohibited from being carried in the crew rest areas.

The requirements to enable crewmembers’ quick entry to the crew rest compartment, and to locate a fire source, inherently places limits on the amount of baggage that may be carried and the size of the crew rest area. The FAA considers that the crew rest area must be limited to the stowage of crew personal luggage and must not be used for the stowage of cargo or passenger baggage. The design of such a system to include cargo or passenger baggage would require additional requirements to ensure safe operation.

Furthermore, the addition of galley equipment or a kitchenette incorporating a heat source (e.g., cook tops, microwaves, coffee pots, etc.), other than a conventional lavatory or kitchenette hot water heater within the LLCR compartment as defined in the “Novel or Unusual Design Features” section, may require additional special conditions to be considered. A hot water heater is acceptable without need for special conditions.

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

In 1976, when amendment 25–38 was adopted, small galleys were the only isolated compartments that had been certificated. Two crewmembers were the maximum expected to occupy those galleys. This crew rest compartment can accommodate up to six crewmembers. This large number of occupants in an isolated compartment was not envisioned at the time amendment 25–38 was adopted. It is not appropriate for all occupants to don PBEs in the event of a fire because the first action should be to leave the confined space unless the occupant is fighting the fire. Taking the time to don the PBE would prolong the time for the emergency evacuation of the occupants and possibly interfere with efforts to extinguish the fire. These special conditions therefore provide procedures that establish a level of safety equivalent to the PBE requirements.

Operational Evaluations and Approval

These special conditions outline requirements for flightcrew and cabin crew rest compartment design approvals (e.g., type design change or supplemental type certificate) administered by the FAA’s Aircraft Certification Service. Prior to operational use of a flight (cabin) crew rest compartment, the FAA’s Flight Standards Service must evaluate the flight (cabin) crew sleeping quarters and rest facilities for operational suitability. Refer to §§ 91.1061(b)(1), 121.485(a), 121.523(b), and 135.269(b)(5).

Compliance with these special conditions does not ensure that the applicant has demonstrated compliance.
with the requirements of 14 CFR part 91, 121, or 135.

To obtain an operational evaluation, the type design holder must contact the appropriate Aircraft Evaluation Group (AEG) in the Flight Standards Service and request an evaluation for operational suitability of the flightcrew sleeping quarters in their crew rest facility. Results of these evaluations should be documented and appended to the applicable Flight Standardization Board Report. Individual operators may reference these standardized evaluations in discussions with their FAA Principal Operating Inspector as the basis for an operational approval, in lieu of an on-site operational evaluation.

Any changes to the approved flight (cabin) crew rest compartment configuration that affect crewmember emergency egress, or any other procedures affecting the safety of the occupying crewmembers and related training requires a re-evaluation and approval. In the event of any design change that affects egress, safety procedures, or training, the applicant is responsible for notifying the FAA’s AEG that a new crew rest facility evaluation is required.

All instructions for continued airworthiness (ICAs) will be submitted to the Seattle AEG for approval acceptance, including service bulletins, before issuance of the FAA modification approval.

These special conditions are similar to Special Conditions No. 25–752–SC, except the maximum occupancy is 6 rather than 10 occupants, and the supplemental oxygen requirements have been expanded to include destination areas. The conditions provide an appropriate level of safety for the occupancy limit as only the size of the compartment volume will change to accommodate the occupants, but all other requirements for safety, fire suppression, and emergency evacuation will remain the same.

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.

Applicability

As discussed above, these special conditions are applicable to the Boeing Model 777–300ER series airplane, as modified by GDC Technics. Should GDC Technics apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. T00001SE to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

Conclusion

This action affects only a certain novel or unusual design feature on one model series of airplanes, as modified by GDC Technics. 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

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

Authority Citation

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(f), 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 Boeing Model 777–300ER series airplanes, as modified by GDC Technics.

1. Occupancy of the LLCR compartment is limited to the total number of installed bunks and seats in each compartment. For each occupant permitted in the LLCR compartment, there must be an approved seat or berth able to withstand the maximum flight load when occupied. The maximum occupancy in the LLCR compartment is six (6).

a. There must be appropriate placards displayed in a conspicuous place at each entrance to the LLCR compartment indicating the following information:

   (1) The maximum number of occupants allowed;
   (2) That occupancy is restricted to crewmembers who are trained in the evacuation procedures for the LLCR compartment;
   (3) That occupancy is prohibited during taxi, take-off, and landing;
   (4) That smoking is prohibited in the LLCR compartment; and
   (5) That the LLCR compartment is limited to the stowage of personal luggage of crewmembers and must not be used for the stowage of cargo or passenger baggage.

b. There must be at least one ashtray located conspicuously on or near the entry side of any entrance to the LLCR compartment.

c. There must be at least one ashtray located on or near the entry side of any entrance to the LLCR compartment.

d. There must be a means to prevent passengers from entering the LLCR compartment in an emergency or when no flight attendant is present.

e. For all doors installed in the evacuation routes, there must be a means to preclude anyone from being trapped inside a compartment. 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 compartment at any time.

2. There must be at least two emergency evacuation routes, which could be used by each occupant of the LLCR compartment to rapidly evacuate to the main cabin and could be closed from the main passenger cabin after evacuation.

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

   b. The routes must be designed to 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 utilizes 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, such as in a main aisle, cross aisle, passageway, or galley complex. If such a location cannot be avoided, special consideration must be taken to ensure that the hatch or door can be opened when a person who is the weight of a 95th percentile male is standing on the hatch or door. The use of evacuation routes must not be dependent upon any powered device. If there is low headroom at or near an evacuation route, provision must be made to prevent or to protect occupants of the LLCR compartment from head injury.

   c. Emergency evacuation procedures, including the emergency evacuation of an incapacitated crewmember from the LLCR compartment, must be established. All of these procedures must be transmitted to the operator for incorporation into its training programs and appropriate operational manuals.
d. There must be a limitation in the Airplane Flight Manual or other suitable means requiring that crewmembers be trained in the use of evacuation routes.

3. There must be a means for the evacuation of an incapacitated person (representative of a 95th percentile male) from the LLCR compartment to the passenger cabin floor.
   a. The evacuation must be demonstrated for all evacuation routes. A flight attendant or crew member (a total of one assistant within the LLCR compartment) may provide assistance in the evacuation. Up to three persons in the main passenger compartment may provide additional assistance.
   b. For evacuation routes having stairs, the additional assistants may descend down to one-half the elevation change from the main deck to the LLCR compartment, or to the first landing, whichever is higher.

4. The following signs and placards must be provided in the LLCR compartment:
   a. At least one exit sign, which meets the requirements of §25.812(b)(1)(i) must be located near each exit.
      However, a sign with reduced background area of no less than 5.3 square inches (excluding the letters) may be utilized, provided that it is installed such that the material surrounding the exit sign is light in color (e.g., white, cream, light beige). If the material surrounding the exit sign is not light in color, a sign with a minimum of a one-inch-wide background border around the letters would also be acceptable.
   b. An appropriate placard that defines the location and the operating instructions for each evacuation route must be located near each exit;
   c. Placards must be readable from a distance of 30 inches under emergency lighting conditions; and
   d. The exit handles and the placards with the evacuation path operating instructions must be illuminated to at least 160 micro lamberts under emergency lighting conditions.

5. There must be a means for emergency illumination to be automatically provided for the LLCR compartment in the event of failure of the main power system of the airplane, or of the normal lighting system of the LLCR compartment.
   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 the 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 LLCR compartment to locate and transfer to the main passenger cabin floor by means of each evacuation route.
   d. The illumination level must be sufficient to locate a deployed oxygen mask with the privacy curtains in the closed position for each occupant of the LLCR compartment.

6. There must be means for two-way voice communications between crewmembers on the flightdeck and crewmembers in the LLCR compartment. Section 25.785(h) requires flight attendant seats near required floor level emergency exits. Each such exit seat on the aircraft must have a public address microphone that allows two-way voice communications between flight attendants and crewmembers in the LLCR compartment. One microphone may serve more than one such exit seat, provided the proximity of the exits allows unassisted verbal communications between seated flight attendants.

7. There must be a means for manual activation of an aural emergency alarm system, audible during normal and emergency conditions, to enable crewmembers on the flightdeck and at each pair of required floor-level emergency exits to alert crewmembers in the LLCR compartment of an emergency. Use of a public address or crew interphone system will be acceptable, provided an adequate means of differentiating between normal and emergency communications is incorporated. The system must be powered in flight for at least ten minutes after the shutdown or failure of all engines and auxiliary power units (APU), or the disconnection or failure of all power sources which are dependent on the continued operation of the engines and APUs.

8. There must be a means—readily detectable by seated or standing occupants of the LLCR compartment—which indicates when seat belts should be fastened. If there are no seats, at least one means, such as sufficient handholds, must be provided to cover anticipated turbulence. Seat-belt-type restraints must be provided for berths and must be compatible for the sleeping attitude during cruise conditions. There must be a placard on each berth requiring that seat belts must be fastened when the berth is occupied. If compliance of the other requirements of these special conditions is predicated on specific head location, there must be a placard identifying the head position.

9. To provide a level of safety equivalent to that provided to occupants of a small isolated galley—in lieu of the requirements specified in §25.1439(a) at amendment 25–38 that pertain to isolated compartments—the following equipment must be provided in the LLCR compartment:
   a. At least one approved hand-held fire extinguisher appropriate for the kinds of fires likely to occur;
   b. Two portable PBE units approved to Technical Standard Order (TSO)—C116 or equivalent, which are suitable for firefighting or one PBE for each hand-held fire extinguisher, whichever is greater; and
   c. One flashlight.

Note: Additional PBEs and fire extinguishers in specific locations, beyond the minimum numbers prescribed in condition 9, may be required as a result of any egress analysis accomplished to satisfy condition 2(a).

10. A smoke-or-fire detection system or systems must be provided that monitors each occupiable area within the LLCR compartment, including those areas partitioned by curtains. Flight tests must be conducted to show compliance with this requirement. Each smoke-or-fire detection system 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 LLCR compartment; 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 LLCR compartment must be designed such that fires within it can be controlled without a crewmember having to enter the compartment, or be designed such that crewmembers equipped for firefighting have unrestricted access to the compartment. The time for a crewmember on the main deck to react to the fire alarm, to don the firefighting equipment, and to gain access must not exceed the time for the compartment to become smoke-filled, making it difficult to locate the source of the fire.

12. There must be a means provided to exclude hazardous quantities of smoke or extinguishing agent originating in the LLCR compartment from entering any other compartment occupied by crewmembers or passengers. This means must include...
must be established. These procedures
crewmembers in the LLCR compartment
is depressed. Procedures for
push button in the LLCR compartment
minimum of five minutes or until a reset
warning must sound continuously for a
altitude exceeds 15,000 feet. The aural
decompression. The warning must
oxygen masks in the event of

system must provide an aural and visual
(application of required
expected to be in the destination area
(considering the fire threat, the volume
of the compartment, and the ventilation
rate.
13. For each seat and berth in the
LLCR compartment, there must be a
supplemental oxygen system equivalent
to that provided for main deck
passengers. If a destination area (such as
a changing area) is provided, there must
be an oxygen mask readily available for
each occupant who can reasonably be
expected to be in the destination area
(with the maximum number of required
masks within the destination area being
limited to the placarded maximum
occupancy of the destination area). The
system must provide an aural and visual
warning to alert the occupants of the
LLCR compartment of the need to don
oxygen masks in the event of
decompression. The warning must
activate before the cabin pressure
altitude exceeds 15,000 feet. The aural
warning must sound continuously for a
minimum of five minutes or until a reset
push button in the LLCR compartment
depressed. Procedures for
crewmembers in the LLCR compartment
to follow in the event of decompression
must be established. These procedures
must be transmitted to the operator for
incorporation into their training

programs and appropriate operational
manuals.
14. The following requirements apply
to LLCR compartments that are divided
into several sections by the installation of
curtains or doors:
   a. To warn crewmembers who may be
      sleeping, there must be an aural alert
      that accompanies automatic
      presentation of supplemental oxygen
      masks. The alert must be audible in
      each section of the LLCR compartment.
      A visual indicator that occupants must
      don an oxygen mask is required in each
      section where seats or berths are not
      installed. A minimum of two
      supplemental oxygen masks are
      required for each seat or berth. There
      must also be a means to manually
deploy the oxygen masks from the
flightdeck.
   b. A placard is required adjacent to
each curtain that visually divides or
separates the LLCR compartment into
small sections for privacy purposes. The
placard must indicate that the curtain is
to remain open when the private section
it creates is unoccupied.
   c. For each section of the LLCR
compartment created by the installation
of a curtain, the following requirements
of these special conditions must be met
with the curtain open and with the
curtain closed:
      (1) Emergency illumination (condition
          5);
      (2) Aural emergency alarm (condition
          7);
      (3) Fasten-seat-belt signal or return-to-
      seat signal as applicable (condition 8);
      and
      (4) Smoke or fire detection system
      (condition 10).
   d. Crew rest compartments visually
divided to the extent that evacuation
could be affected must have exit signs
that direct occupants to the primary
stairway exit. The exit signs must be
provided in each separate section of the
LLCR compartment, and must meet the
requirements of § 25.812(b)(1)(i). An exit
sign with reduced background area as
described in condition 4(a), may be used
to meet this requirement.
   e. For sections within an LLCR
compartment that are created by the
installation of a partition with a door
separating the sections, the following
requirements of these special conditions
must be met with the door open and
with the door closed:
      (1) There must be a secondary
evacuation route from each section to
the main deck, or it must be shown that
any door between the sections has been
designed to preclude anyone from being
trapped inside the compartment.
Removal of an incapacitated
crewmember from this area must be
considered. A secondary evacuation
route from a small room designed for
only one occupant for a short period of
time, such as a changing area or
lavatory, is not required. However,
removal of an incapacitated occupant
from this area must be considered.
   (2) Any door between the sections
must be shown to be openable when
crowded against, even when crowding
occurs at each side of the door.
   (3) There may be no more than one
door between any seat or berth and the
primary stairway exit.
   (4) There must be exit signs in each
section meeting the requirements of
§ 25.812(b)(1)(i), that direct occupants to
the primary stairway exit. An exit sign
with reduced background area, as
described in condition 4(a), may be used
to meet this requirement.
   (5) Condition 5 (emergency
illumination), 7 (aural emergency
alarm), 8 (fasten seat belt signal or
return to seat signal as applicable) and
10 (smoke and fire detection) must be
met both with the door open and the
door closed.
   (6) Condition 6 (two-way voice
communication) and 9 (PBE and other
equipment) must be met independently
for each separate section, except in
lavatories or other small areas that are
not intended to be occupied for
extended periods of time.
15. Where a waste disposal receptacle
is fitted, it must be equipped with a
built-in fire extinguisher designed to
discharge 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 standards of § 25.853(a).
Mattresses must comply with the
flammability standards of § 25.853(c).
17. A lavatory within the LLCR
compartment must meet the same
requirements as a lavatory installed on
the main deck, except with regard
condition 10 for smoke detection.
18. When a LLCR compartment 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
conditions apply:
   a. Any wall of the LLCR compartment,
which forms part of the boundary of the
reduced cargo compartment and is
subject to direct flame impingement
from a fire in the cargo compartment
and any interface item between the
LLCR compartment and the airplane
structure or systems, must meet the
applicable requirements of § 25.855.
   b. Means must be provided to ensure
that the fire protection level of the cargo
compartment meets the applicable requirements of §§ 25.855, 25.857, and 25.858 when the LLCR compartment is not installed.

c. Use of each emergency evacuation route must not require occupants of the LLCR compartment to enter the cargo compartment to return to the passenger compartment.

d. The aural emergency alarm specified in condition 7 must sound in the LLCR compartment in the event of a fire in the cargo compartment.

19. Means must be provided to prevent access into the Class C cargo compartment—whether or not the LLCR compartment is installed—during all airplane flight operations and to ensure that the maintenance door is closed and secured during all airplane flight operations.

20. All enclosed stowage compartments within the LLCR compartment that are not limited to stowage of emergency equipment or airplane supplied equipment (i.e., bedding), must meet the design criteria in the table below. As indicated in the table below, enclosed stowage compartments larger than 200 ft³ in interior volume are not addressed by this special condition. The in-flight accessibility of very large enclosed stowage compartments, and the subsequent impact on the crewmembers’ ability to effectively reach any part of the compartment with the contents of a hand fire extinguisher, will require additional fire protection considerations similar to those required for inaccessible compartments such as Class C cargo compartments.

<table>
<thead>
<tr>
<th>Fire protection features</th>
<th>Stowage compartment interior volumes</th>
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<tbody>
<tr>
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<td>Less than 25 ft³</td>
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<tr>
<td>Materials of construction</td>
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<tr>
<td>Detectors 1</td>
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<tr>
<td>Liner 2</td>
<td>No</td>
</tr>
<tr>
<td>Locating device 3</td>
<td>No</td>
</tr>
</tbody>
</table>

1 Material: The material used to construct each enclosed stowage compartment must at least be fire resistant and must meet the flammability standards established for interior components per the requirements of § 25.853. For compartments less than 25 ft³ in interior volume, the design must ensure the ability to contain a fire likely to occur within the compartment under normal use.

2 Detectors: Enclosed stowage compartments equal to or exceeding 25 ft³ in interior volume must be provided with a smoke or fire detection system to ensure that a fire can be detected within a one-minute detection time. Flight tests must be conducted to show compliance with this requirement. Each system (or systems) must provide:

a. A visual indication in the flightdeck within one minute after the start of a fire;

b. An aural warning in the LLCR compartment; 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.

3 Liner: If it can be shown that the material used to construct the stowage compartment meets the flammability requirements of a liner for a Class B cargo compartment, no liner would be required for enclosed stowage compartments equal to or greater than 25 ft³ but less than 57 ft³ in interior volume. For all enclosed stowage compartments equal to or greater than 57 ft³ but less than or equal to 200 ft³ in interior volume, a liner must be provided that meets the requirements of § 25.855 for a Class B cargo compartment.

4 Location Detector: LLCR compartments which contain enclosed stowage compartments with an interior volume exceeding 25 ft³ and which are located away from one central location such as the entry to the LLCR compartment or a common area within the LLCR compartment would require additional fire protection features or devices to assist the firefighter in determining the location of a fire.

Issued in Des Moines, Washington, on March 17, 2020.

James E. Wilborn,
Acting Manager, Transport Standards Branch, Policy and Innovation Division, Aircraft Certification Service.

[FR Doc. 2020–06625 Filed 3–24–20; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration

14 CFR Part 121

[Docket No.: FAA–2020–0289; Amdt. No. 121–383]

RIN 2120–AL62

Oxygen Mask Requirement: Supplemental Oxygen for Emergency Descent and for First Aid; Turbine Engine Powered Airplanes With Pressurized Cabins

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This action amends the oxygen mask requirement for circumstances in which a single pilot is at the aircraft controls. This action applies to all certificate holders who conduct domestic, flag, and supplemental operations. This action responds to a statutory mandate that requires the FAA to increase the flight level threshold at which the FAA requires use of an oxygen mask by the remaining pilot at the aircraft controls when the other pilot at the controls leaves the control station.

DATES: This final rule is effective on March 23, 2020.


SUPPLEMENTARY INFORMATION:

I. Executive Summary

This final rule addresses section 579 of the Federal Aviation Administration Reauthorization Act of 2018, Public Law 115–254 (Oct. 5, 2018), ("FAARA 2018"), which requires the FAA to issue a final regulation revising §121.333(c)(3) of title 14, Code of Federal Regulations (14 CFR), to apply only to flight altitudes above flight level 410. Such an amendment would increase the flight level threshold from flight level 250 to flight level 410 (i.e., a flight altitude of 41,000 feet), at which the FAA requires a pilot at the controls to put on and use the required oxygen mask while the other pilot leaves his or her control station. As a result, by this action, the FAA amends 14 CFR 121.333(c)(3) to replace the current flight altitude threshold of flight level 250 with flight level 410.

1 As further explained in Section III of this final rule, the FAA defines “flight level” in 14 CFR 1.1 as a level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Flight levels are stated in three digits that represent hundreds of feet. For example, flight level 250 represents a barometric altimeter indication of 25,000 feet.