

This annex to the EASA TCDS IM.A.035 was created to publish selected special conditions / deviations / equivalent safety findings that are part of the applicable certification basis:

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<b>SPECIAL CONDITION</b>	<b>D-GEN02 PTC: Heat Release and Smoke Density</b>
APPLICABILITY:	Boeing B737 NG, B747-400/-400F, B767-200/-300/-400ER, B777-200/-200LR/-300/-300ER
REQUIREMENTS:	CS25.853(d), Appendix F Part IV & V, Part 21 §21A.16B
ADVISORY MATERIAL:	N/A

1. Except as provided in paragraph 3 of these special conditions, compliance with JAR25 appendix F, parts IV and V, heat release and smoke emission, is required for setas that incorporate non-traditional, large, non-metallic panels that may either be a single component or multiple components in a concentrated area in their design.
2. The applicant may designate up to and including 0.13935 m<sup>2</sup> (1.5 square feet) of non-traditional, non-metallic panel material per seat place that does not have to comply with special condition Number 1, above. A triple seat assembly may have a total of 0.41805 m<sup>2</sup> (4.5 square feet) excluded on any portion of the assembly (e.g. outboard seat place 0.0929 m<sup>2</sup> (1 square foot) middle 0.0929 m<sup>2</sup> (1 square foot) and inboard 0.23225 m<sup>2</sup> (2.5 square feet))
3. Seats do not have to meet the test requirements of JAR25 appendix F, parts IV and V, when installed in compartments that are not otherwise required to meet these requirements. Examples include:
  - a. Airplanes with passenger capacities of 19 or less and
  - b. Airplanes exempted from smoke and heat release requirements
4. Only airplanes associated with new seat certification programs applied for after the effective date of these special conditions [January 19<sup>th</sup>, 2011] will be affected by the requirements in these special conditions. This special conditions is not applicable to :
  - a. The existing airplane fleet and follow-on deliveries of airplanes with previously certified interiors,
  - b. For minor layout changes and major layout changes of already certified versions that
    - ◆ Do not affect seat design
    - ◆ Do not introduce changes to seat design that affect panels that could be defined as "non-traditional, large non-metallic panels".

<b>SPECIAL CONDITION</b>	<b>D-02: Access to Class E Cargo Compartment in Flight</b>
APPLICABILITY:	B767-300F
REQUIREMENTS:	JAR 25.855, 25.857, 25.1309, 25.1439, 25.1443
ADVISORY MATERIAL:	Interpretative Material to SC D-02

*Special Conditions SC D-02*

1. *Portable oxygen equipment, readily accessible in the courier compartment, must be provided for the maximum number of supernumeraries allowed to access the class E cargo compartment in-flight. The equipment shall meet JAR 25.1439 (b) and JAR 25.1443 (e).*
2. *Occupants, accessing the Class E cargo compartment, must be trained in the use of portable oxygen equipment.*
3. *Number of occupants, accessing the Class E cargo compartment at the same time, is restricted to the number of readily available portable oxygen equipment.*
4. *Aural and visual means, readily detectable from any accessible location in the Class E cargo compartment, must be provided to warn any occupant who may be present in the Class E cargo compartment when to don the oxygen equipment and /or when a return to seat is required.*
5. *A means or a procedure must be provided to allow each flight crew to access, from his/her seat, when the Class E cargo compartment is occupied.*
6. *The AFM must include clear instructions:*
  - a. *To define fire fighting procedures in the Class E cargo compartment in particular for the case of fire while the cargo compartment is being accessed,*
  - b. *to require that portable oxygen equipment be carried by an occupant each time the cargo compartment is accessed.*
7. *Placards must be installed on each in-flight access door instructing that:*
  - a. *Smoking is not allowed at all time during access.*
  - b. *Door must be kept closed (except during the actual in-flight access period).*
  - c. *Portable oxygen equipment be carried each time the cargo compartment is accessed by an occupant.*

Interpretative (substantive) Material to SC D-02

1. Seats for a maximum of 4 non-crew (supernumerary) occupants (1 observer seat and 3 courier compartment seats) are provided. By procedure and placarding, access to the main deck cargo compartment in flight is limited to one (1) occupant at a time. The 767-300F design includes portable oxygen equipment that will allow 1 person to access the cargo area at a time. The portable oxygen equipment is readily accessible in the courier compartment area, and is located on the rigid barrier adjacent and below the seat nearest the cargo compartment access door.

The portable oxygen equipment provided for cargo area access is a 4.25 cu ft portable bottle and a "yellow" TSO C64a passenger-style mask connected to it meeting the requirements of JAR 25.1443 (c). This equipment is required to be carried by a person accessing cargo compartment per preflight briefing, AFM requirements and placard instructions. This equipment does not meet JAR 25.1439 (b) and JAR 25.1443 (e) as noted in item 1) above, but instead meets JAR 25.1443 (c). Boeing and FAA documented their agreement to the 767-300F design and procedures for the, "Accessible Class E Cargo Compartment" in the requirements specified by the FAA IP C-1 dated 25 May 1995.

The equipment provides supplemental oxygen to the occupant to allow him/her to return to their seat. It is not intended that the occupant fight a fire in the class E cargo compartment.

A portable breathing equipment (PBE/smoke hood) meeting the requirements of JAR 25.1439 (b) and TSO-C116 is provided in the extended flight deck and installed on the flight compartment sidewall stowage container. This equipment is consistent with the requirements for and is intended for use in fighting fires only within the extended flight deck/courier compartment and not in the class E cargo compartment. The PBE may be used only by one of the flight crew.

4. The AFM contains requirements specifying that, a supernumerary/courier compartment occupant accessing the main deck cargo area will be provided a special briefing prior to flight, which includes instructions in use of the portable oxygen equipment.
5. For the 767-300F, the number of occupants accessing the cargo compartment in flight is limited by AFM procedure and placarding to a single person and the available oxygen equipment provided is consistent (one set of portable oxygen equipment is provided).
4. The 767-300F design incorporates an alert system for an occupant who may access the main deck cargo area. This alert is readily detectable from any accessible location in the Class E cargo compartment and is designed to warn the occupant who may be present in the Class E cargo compartment when he/she must don their oxygen equipment and return to his/her seat.

The main deck cargo access alert system utilizes the cargo lighting system. The alert system is manually activated by the flight crew and initiates a flashing mode of the cargo lighting should they get a Main Deck Smoke message or should they get a Loss of Cabin Pressure warning. The alert system causes one-half (every other one) of the overhead cargo lights to flash for a duration of 10 seconds. An FAA test demonstration of the alert system was performed during the initial FAA aircraft certification activity and proven to be effective. The alert system meets the original requirements specified by the 767-300F FAA IP C-1 dated 25 May 1995.

The cargo area occupant is instructed to immediately don his/her portable oxygen mask and return to his/her seat in the pre-flight briefing. The alert system may also be used by the flight crew during turbulence or other emergency conditions that require the cargo area occupant to return to his/her seat.

5. The AFM includes the requirement for a flight crew pre-flight briefing of the supernumeraries relative to emergency equipment, including procedures of access (ingress and egress) to the Class E cargo compartment, and of emergency procedures including the visual alerting signals. The AFM also includes the flight crew procedures related to the operation of the Class E alerting system. The operators will be responsible to develop an FAA/EASA-approved training plan that satisfies the AFM requirements for carriage of supernumeraries.
6. The 767-300F AFM Procedures, including preflight briefing instructions, and Courier compartment placards at the cargo access door specify that portable oxygen equipment must be carried when accessing the cargo compartment. The cargo area alert warns the occupant to don portable oxygen equipment and immediately return to his/her seat as instructed in the pre-flight briefing. It is not the intent that the occupant entering the main deck cargo area in flight will fight fires in the class E compartment.
7. The 767-300F design includes placards provided to comply with conditions a., b. and c. above. There is a placard specifying access to the cargo compartment is limited to one occupant. A separate placard on the door instructs the occupant to carry a portable oxygen bottle when entering the cargo compartment and specifies that no smoking is allowed in the cargo compartment.

The placard requirements initially proposed in the FAA IP C-1 were updated and FAA accepted prior to delivery of the aircraft and are currently as follows:

Placard BAC29PPS64337 reads:

"Cargo compartment access limited to one occupant"

Placard BAC29PPS64338 reads:

"Access to be used only to inspect cargo

Carry portable oxygen bottle when entering cargo compartment

No smoking in the cargo compartment

Keep door closed except during entrance and egress

In the event of smoke or cargo fire, do not open"

<b>EQUIVALENT SAFETY FINDING</b>	<b>D-03: Improved Flammability Standards for Thermal / Acoustic Insulation Materials</b>
APPLICABILITY:	Boeing B767-300F
REQUIREMENTS:	JAR 25.853(b) at change 13
ADVISORY MATERIAL:	-

*The thermal/acoustic insulation material that meets FAR 25.856(a) at Amendment 111 can be considered equivalently safe for the purposes of showing compliance with JAR 25.853(b) at change 13. Once compliance with FAR 25.856(a) has been shown, it is not necessary to test in accordance with JAR 25.853(b) at change 13, and these requirements can be substantiated based on equivalent safety.*

<b>SPECIAL CONDITION</b>	<b>D-04: Courier Compartment</b>
APPLICABILITY:	Boeing B767-300F
REQUIREMENTS:	JAR 25.857(e) at change 13
ADVISORY MATERIAL:	-

*1. Categories of occupants accepted in the courier compartment*

*The approved AFM must contain an operating limitation restricting the total courier compartment occupancy to four persons who are:*

*(i)- Included in one of the following categories:*

- a- a crew member*
- b- an employee of the operator*
- c- an inspector or any other authorised representative of the Authorities*
- d- any person determined by the operator, for the particular flight on which carried, to be necessary for*
  - 1- safety of flight*
  - 2- safe handling of animals*
  - 3- security of valuable or confidential cargo*
  - 4- preservation of fragile or perishable cargo*
  - 5- operation of special equipment for loading or unloading cargo*
  - 6- loading or unloading of oversized cargo*
  - 7- safe handling of hazardous material*
- e- a person travelling to or from an assignment by the operator involving a function described in § (d)*
- f- other categories of persons authorized by Operational Authorities of the Operator*

*(ii)- Briefed by a flight crew member prior to each flight*

- on use of emergency escape means (door opening, slide release)*
- on location and usage of oxygen equipment (automatic and portable) and procedures to be followed in case of depressurization*
- on usage of two-way communication system between flight deck and cargo compartments*
- on applicable passenger briefing items required by National Authority regulations*

*(iii)- Physically able to accomplish the necessary emergency procedures*

*2. Amend JAR 25 as follows:*

*Note: Modifications of existing JAR 25 change 13 paragraphs are made apparent by strikethrough and underlined text and can be seen in EASA position am.*

*JAR 25.857(e) is modified to read:*

*(e) Class E.*

*A Class E cargo compartment is one in which -*

- (1) Reserved.*
- (2) There is a separate approved smoke or fire detector system to give warning at the pilot or flight engineer station;*
- (3) There are means to shut off the ventilating airflow to, or within, the compartment, and the controls for these means are accessible to the flight crew in the crew compartment;*
- (4) There are means to exclude hazardous quantities of smoke, flames, or noxious gases, from occupied compartments; and*
- (5) The required emergency exits are accessible under any cargo loading condition.*

<b>SPECIAL CONDITION</b>	<b>H-01: Enhanced airworthiness programme for aeroplane systems – ICA on EWIS</b>
APPLICABILITY:	Boeing B717, B727, B737, B747, B757, B767, B777, DC-10, MD11, DC-8, DC-9, MD80, MD90 (all FAR26.11 affected models)
REQUIREMENTS:	Part 21A.16B(a)(3), 21A.3B(c)(1), CS25.1529 & Appendix H
ADVISORY MATERIAL:	AMC 25 Subpart H

Add to: **Appendix H Instructions for Continued Airworthiness**

### **H25.5 Electrical Wiring Interconnection Systems Instructions for Continued Airworthiness**

The applicant must prepare Instructions for Continued Airworthiness (ICA) applicable to Electrical Wiring Interconnection System (EWIS) as defined below that include the following:

Maintenance and inspection requirements for the EWIS developed with the use of an enhanced zonal analysis procedure (EZAP) that includes:

- a. Identification of each zone of the aeroplane.
- b. Identification of each zone that contains EWIS.
- c. Identification of each zone containing EWIS that also contains combustible materials.
- d. Identification of each zone in which EWIS is in close proximity to both primary and back-up hydraulic, mechanical, or electrical flight controls and lines.
- e. Identification of –
  - Tasks, and the intervals for performing those tasks, that will reduce the likelihood of ignition sources and accumulation of combustible material, and
  - Procedures, and the intervals for performing those procedures, that will effectively clean the EWIS components of combustible material if there is not an effective task to reduce the likelihood of combustible material accumulation.
- f. Instructions for protections and caution information that will minimize contamination and accidental damage to EWIS, as applicable, during the performance of maintenance, alteration, or repairs.

The ICA must be in the form of a document appropriate for the information to be provided, and they must be easily recognizable as EWIS ICA.

For the purpose of this Appendix H25.5, the following EWIS definition applies:

- (a) Electrical wiring interconnection system (EWIS) means any wire, wiring device, or combination of these, including termination devices, installed in any area of the aeroplane for the purpose of transmitting electrical energy, including data and signals between two or more intended termination points. Except as provided for in subparagraph (c) of this paragraph, this includes:
  - (1) Wires and cables.
  - (2) Bus bars.



*Special Condition H-01 continued*

- (3) The termination point on electrical devices, including those on relays, interrupters, switches, contactors, terminal blocks, and circuit breakers and other circuit protection devices.
  - (4) Connectors, including feed-through connectors.
  - (5) Connector accessories.
  - (6) Electrical grounding and bonding devices and their associated connections.
  - (7) Electrical splices.
  - (8) Materials used to provide additional protection for wires, including wire insulation, wire sleeving, and conduits that have electrical termination for the purpose of bonding.
  - (9) Shields or braids.
  - (10) Clamps and other devices used to route and support the wire bundle.
  - (11) Cable tie devices.
  - (12) Labels or other means of identification.
  - (13) Pressure seals.
- (b) The definition in subparagraph (a) of this paragraph covers EWIS components inside shelves, panels, racks, junction boxes, distribution panels, and back-planes of equipment racks, including, but not limited to, circuit board back-planes, wire integration units and external wiring of equipment.
- (c) Except for the equipment indicated in subparagraph (b) of this paragraph, EWIS components inside the following equipment, and the external connectors that are part of that equipment, are excluded from the definition in subparagraph (a) of this paragraph:
- (1) Electrical equipment or avionics that is qualified to environmental conditions and testing procedures when those conditions and procedures are -
    - (i) Appropriate for the intended function and operating environment, and
    - (ii) Acceptable to the Agency.
  - (2) Portable electrical devices that are not part of the type design of the aeroplane. This includes personal entertainment devices and laptop computers.
  - (3) Fibre optics.

<b>SPECIAL CONDITION</b>	<b>S-02: Class E Cargo Compartment Essential System Fire Protection</b>
APPLICABILITY:	Boeing B767-300F
REQUIREMENTS:	JAR 25. Appendix F, Part III, 25.1309
ADVISORY MATERIAL:	-

*Special Condition SC S-02*

*Cockpit voice and flight data recorders, windows and other systems or equipment within the Class E cargo compartments shown to be essential for continuing a safe flight and landing according to 25.1309 must be adequately protected against fire. If protective covers are used they must meet the requirements of Appendix F, Part III.*

-- END --