Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET
ANNEX 1

UK.TC.A.00086

for

Boeing 767

Type Certificate Holder

The Boeing Company

767 Logan Ave N
Renton
WA 98057-0000
USA

Model(s): 767-200
767-300
767-300F
(767-300BCF)
767-400ER

Issue: 1

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This annex was created to make public non-proprietary data contained in Special Conditions that are part of the applicable Certification Basis as recorded in UK TCDS UK.TC.A.00086.

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Special Conditions

D-GEN02 PTC: Heat Release and Smoke Density

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
None.

Special Condition D-GEN02 PTC: Heat Release and Smoke Density

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 set as 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^2 (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^2 (4.5 square feet) excluded on any portion of the assembly (e.g. outboard seat place0.0929 m^2 (1 square foot) middle 0.0929 m^2 (1 square foot) and inboard 0.23225 m^2 (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 19th, 2011] will be affected by therequirements 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 versionsthat
      - 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”.

D-02: Access to Class E Cargo Compartment in Flight

Applicability
Boeing B737-300F

Requirements

JAR 25.855, 25.857, 25.1309, 25.1439, 25.1443

Advisory Material
Interpretative Material to SC D-02.

Special Condition D-02: Access to Class E Cargo Compartment in Flight
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 accessedby 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 ECargo 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 themain 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 andreturn 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 cargolighting 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 tobe effective. The alert system meets the original requirements specified by the 767-300FFAA 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 bythe 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 acceptedprior 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"

D-04: Courier Compartment

Applicability
Boeing B767-300F

Requirements
JAR 25.857(e) at change 13

Advisory Material
None.

Special Condition D-04: Courier Compartment

1. Categories of occupants accepted in the courier compartment

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

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

   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 outsized 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 theOperator

   (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 incase 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.

F-GEN-11 Non-rechargeable Lithium Battery Installations

Applicability
Boeing B767

Requirements
JAR/ CS 25.601, 25.863, 25.1353(c)

Advisory Material
None.

Special Condition F-GEN-11: Non-rechargeable Lithium Battery Installations

Note: The current requirements governing the installation of batteries in Large Aeroplanes are covered under (CS) 25.1353(c). Requirements from (CS) 25.1353(c) are essentially unchanged from initial JAR code and do not adequately address several failure, operational, and maintenance characteristics of Li-Batteries that could affect safety and reliability of those battery installations.

In lieu of the requirements of CS 25.1353(c) (1) through (c)(4), non-rechargeable Lithium batteries and battery installations must comply with the following:

1. Be designed so that safe cell temperatures and pressures are maintained under all foreseeable operating conditions to preclude fire and explosion.
2. Be designed to preclude the occurrence of self-sustaining, uncontrolled increases in temperature or pressure.
3. Not emit explosive or toxic gases in normal operation, or as a result of its failure, that may accumulate in hazardous quantities within the airplane.
4. Must meet the requirements of CS 25.863(a) through (d).
5. Not damage surrounding structure or adjacent systems, equipment or electrical wiring of the airplane from corrosive fluids or gases that may escape and that may cause a major or more severe failure condition.
6. Have provisions to prevent any hazardous effect on airplane structure or essential systems caused by the maximum amount of heat it can generate due to any failure of it or its individual cells.
7. Have a means to detect its failure and alert the flight crew in case its failure affects safe operation of the aircraft.
8. Have a means for the flight crew or maintenance personnel to determine the battery charge state if its function is required for safe operation of the airplane.

Note 1: A battery system consists of the battery and any protective, monitoring and alerting circuitry or hardware inside or outside of the battery. It also includes vents (where necessary) and packaging. For the purpose of this special condition, a battery and battery system are referred to as a battery.

Note 2: This Special Condition applies in lieu of 25.1353(c)(1) through (c)(4) to non-rechargeable lithium battery installations as follows:

- To all changed installation (new battery part number or new environment) except if the design change can be considered cosmetic. A cosmetic change is a change in appearance only, and does not change any function or safety characteristic of the battery installation.
- To all relocated lithium batteries, except if the relocation is demonstrated to improve the safety of the airplane and of the occupants, leading to a change that provides a substantial fire safety improvement
- To all existing non-rechargeable lithium battery installations affected by a design change, even if the battery or battery installation itself does not change.(e.g. change in ambient temperature or pressure environment in which the battery operates, change on the electrical load on a battery). Except if the design change

improves the safety of the non-rechargeable lithium battery installation.

Applicants, who intend to justify that this Special Condition is not applicable, shall generate the evidence that the proposed design meets the above criteria in this note 2. This evidence shall include a detailed assessment of the battery installation on the baseline aircraft and the improvement due to the proposed change considering a battery thermal runaway failure for both installations. The assessment should:

- Consider the battery thermal runaway effects of heat, explosive energy, projecting debris and toxic gases.
- Address the proximity of the battery to occupants, critical systems and equipment, structure, and any other installations that could be a hazard if exposed to a battery thermal runaway (e.g., oxygen bottles/lines, fuel lines).

The above exceptions are limited to changes/relocations to baseline aircraft installations approved for certification projects for which the special condition was not applicable.

Section 25.1353(c)(1) through (c)(4) will remain in effect for other battery installations.

Note 3: For Very Small Non-rechargeable Lithium Batteries (equal or less than 2 Watt-hour of energy), an acceptable MoC with this Special Conditions is showing these batteries compliant with Underwriters Laboratories (UL) 1642 or UL 2054

Note 4: For the purpose of SCs 7 and 8, “safe operation of the airplane” is defined as continued safe flight and landing following failures or other non-normal conditions. The following are examples of devices with batteries that are not required for continued safe flight and landing of the airplane: emergency locator transmitters, underwater locator beacons, seat belt air bag initiators and flashlights. A backup flight instrument with a non-rechargeable lithium battery is an example that would be required for safe operation of the airplane.

Note 5: Minimum Operational Performance Standards (MOPS) for Non–Rechargeable Lithium Batteries DO-227A + risk assessment at A/C level (limited to SC 3, 4, 5 & 6) is an acceptable MoC to the SC’s 1 to 6 contained in this CRI. Alternative Means of Compliance can be proposed by the applicant to show compliance with the SC’s included in this CRI and agreed by EASA in a case by case basis.

For AmSafe NexGen Electronic Module Assemblies, the guidance included in document TAPP-25.1353-1, which is attached in Appendix of the present CRI, shall be considered an acceptable MoC to SC’s 1 to 6 in this CRI.

Appendix – Transport Airplane Position Paper TAPP-25.1353-1

Subject: Installed Non-Rechargeable Lithium Batteries Means of Compliance for AmSafe NexGen Electronic Module Assemblies

Reference No. TAPP-25.1353-1

Regulatory Ref.: 14 CFR 25.863, 25.1301, 25.1309, 25.1322, 25.1353, 25.1529, 25.1709, 25.1729; Special Conditions Nos. 25-713-SC, 25-707-SC, 25-687-SC and 25-683-SC

National Policy Ref.: AC 25.1309-1A, ARAC Recommended AC 25.1309-Arsenal, AC 25.1322-1, AC 25.1701-1, Policy Statement No. PS-ANM100-00-113-1034

Statement of Issue:

The FAA issued many special conditions (e.g., Special Conditions Nos. 25-713-SC, 25-707-SC, 25-687-SC and 25-683-SC) with the same wording for non-rechargeable lithium battery installations on transport category airplanes. This Transport Airplane Position Paper provides an acceptable means of compliance with these special conditions, and certain title 14, Code of Federal Regulations (14 CFR) part 25 requirements, for installations with non-rechargeable lithium batteries in AmSafe NexGen electronic module assemblies (EMA). This means of compliance only applies to special conditions with the same wording as the above examples.

Background:

The FAA approved a means of compliance for non-rechargeable lithium batteries in AmSafe NexGen EMAs (i.e., three L91, AA, non-rechargeable, lithium iron disulfide batteries) in issue paper S-1 for Project No. SA17226LA-T (see attachment). AmSafe provided letter 19-0022, dated May 14, 2019, to the FAA stating their intent to allow other applicants to reuse issue paper S-1 for their projects. The AmSafe letter provided formal authorization allowing the FAA to release issue paper S-1, and establish means of compliance based on it, to other applicants installing AmSafe NexGen EMAs.

The means of compliance in issue paper S-1 also includes a copy of draft Advisory Circular (AC) 20-192, *Guidance on Testing and Installation of Non-Rechargeable Lithium cells, Batteries and Batteries within End Items on Aircraft*.

FAA Position:

The applicant must verify that all the airplane models modified to install AmSafe NexGen EMAs include non-rechargeable lithium battery special conditions, with the same wording as the above examples, in the certification basis for each affected airplane model. The attached issue paper S-1 provides an acceptable means of compliance with these special conditions and certain 14 CFR part 25 requirements for AmSafe NexGen EMA installations.

Conclusion:

Applicants may use this Transport Airplane Position Paper when:

- The airplane model(s) is a transport category airplane,
- The applicant verifies with the FAA that the FAA position on this issue did not change, and
- The applicant refers to the reference number for this Transport Airplane Position Paper in their project specific certification plan.

H-01: Enhanced airworthiness programme for aeroplane systems – ICA on EWIS

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.

Special Condition H-01: Enhanced airworthiness programme for aeroplane systems – ICA on EWIS

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 toElectrical Wiring Interconnection System (EWIS) as defined below that include the following:

Maintenance and inspection requirements for the EWIS developed with the use of an enhancedzonal 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-uphydraulic, mechanical, or electrical flight controls and lines.

e. Identification of –

- Tasks, and the intervals for performing those tasks, that will reduce the likelihood ofignition sources and accumulation of combustible material, and
- Procedures, and the intervals for performing those procedures, that will effectively cleanthe 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 andaccidental 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, andthey must be easily recognizable as EWIS ICA.

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

Electrical wiring interconnection system (EWIS) means any wire, wiring device, or combination of these, including termination devices, installed in any area of the aeroplanefor the purpose of transmitting electrical energy, including data and signals between twoor more intended termination points. Except as provided for in subparagraph (c) of this paragraph, this includes:

(1) Wires and cables.

(2) Bus bars.

(3) The termination point on electrical devices, including those on relays, interrupters,switches, contactors,

terminal blocks, and circuit breakers and other circuitprotection 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.

a. 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 andexternal wiring of equipment.

b. 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.

S-02: Class E Cargo Compartment Essential System Fire Protection

Applicability
Boeing B767-300F

Requirements
JAR 25. Appendix F, Part III, 25.1309

Advisory Material
None.

Special Condition S-02: Class E Cargo Compartment Essential System Fire Protection

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 andlanding 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.

Equivalent Safety Findings

D-03: Improved Flammability Standards for Thermal / Acoustic Insulation Materials

Applicability
Boeing B767-300F

Requirements
JAR 25.853(b) at change 13

Advisory Material
None.

Equivalent Safety Finding D-03: Improved Flammability Standards for Thermal / Acoustic Insulation Materials
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 necessaryto test in accordance with JAR 25.853(b) at change 13, and these requirements can be substantiated based on equivalent safety.

D-GEN-7: Flammability Testing Hierarchy

Applicability
Boeing B767

Requirements
JAR/CS 25.853(a)

Advisory Material
None.

Statement of Issue:

Boeing has requested the use of the data generated to show compliance with JAR/CS 25.853(d) and Appendix F Part IV, to substantiate also compliance with JAR/CS 25.853(a) and Appendix F Part I for the same interior panel constructions.

Equivalent Safety Finding D-GEN-7: Flammability Testing Hierarchy

The compensating factors/features that provide an ESF for the regulations not complied with are as follows:

- Correlation of test results

  Boeing has provided test data showing correlation between the results of tests conducted per Part I and Part IV of CS 25 Appendix F.

  If a certain panel construction meets the heat release rate requirements, then it will have an acceptable performance in the Bunsen Burner test.

  As a consequence, panels that, according to JAR/ CS 25.853, are required to be tested per Appendix F Parts I, IV and V need only be tested per Parts IV and V.

G-GEN2: Engine and APU Fire Switch Handle Design

Applicability
Boeing B767

Requirements
CS 25.1555(d)(1)

Advisory Material
None.

Equivalent Safety Finding G-GEN2: Engine and APU Fire Switch Handle Design

Description of compensating design features or alternative standards which allow the granting of the ESF:

On Boeing Models 747-400/-8/-8F, 757, 767, 777 (including the 777-8/-9), and 787 airplanes, the engine and APU fire switch handles are black but indicate red during detected fire conditions or when the FIRE/OVHT test switch is pushed. The conditionally illuminated red control indications serve to decrease cockpit visual noise within the flight deck during normal operations while providing control distinction when required. Illumination of an engine or APU fire control switch gives clear and prompt indication that a fire has been detected in the respective engine or APU compartment. The fire switch handles will display red only under detected fire conditions. This coincides with the Boeing quiet, dark flight deck philosophy and is an improvement to fire indication. The illuminated red color coding under all lighting conditions of the fire switch handle following a detected engine or APU fire provides prompt and accurate annunciation to the flight crew allowing users to quickly identify these controls.
The fire switch handles have a mechanical lock to prevent inadvertent operation. The locking feature is automatically unlocked in response to engine and APU fire indications, or requires a separate and distinct crew action to unlock when the handle is required for use in procedures other than in response to annunciated fire warnings. The mechanical lock will prevent inadvertent crew action.
Additionally, crew checklists contain requirements to "confirm" which engine fire switch handle should be pulled for any emergency for which there is a necessity to insure that the correct fire switch handle is pulled. Flight crews are trained to identify and operate the fire switch handles during initial and recurrent type rating. The fire switch handles are distinctive and unique flight deck controls and common to Boeing models including the 737, 747, 757, 767, 777 and 787 with respect to their shape and method of operation. Except for the 747, placement and location of the handles are common across all Boeing models and are adjacent to fuel cut-off handles.
Considerable service experience of the Boeing commercial fleet having the same design of fire switch handle has shown no adverse history of incidents or accidents related to this design.

Explanation of how design features provide an equivalent level of safety to the level of safety intended by the regulation:

Under an annunciated fire condition in an engine or APU compartment, the fire switch handles are brightly illuminated in a red color. The illumination is sufficient for crew identification and crew alerting in all lighting conditions. The illumination of the fire switch handles is not required by 14 CFR part 25 or CS-25 regulations and is considered a compensating design feature to support a finding that the fire switch handle design provides an equivalent level of safety to that intended by § 25.1555(d)(1) under annunciated fire conditions. Illumination of the fire switch handle following a detected engine or APU fire provides prompt and accurate annunciation to the flight crew, and thus provides an equivalent level of safety to a fire switch handle that was colored red as required by the rule.

The fire switch handles have a mechanical lock to prevent inadvertent operation. Because one of the considerations in requiring emergency controls to be red under § 25.1555(d)(1) is to assist in preventing accidental selection or improper operation by flight crews, this locking feature is considered to be a compensating feature in support of the equivalent level of safety. The locking feature is automatically unlocked in response to engine and APU fire indications, or requires a separate and distinct crew action to unlock when the handle is required for use in procedures other than in response

to annunciated fire warnings. The mechanical lock will prevent inadvertent crew action and thus the design feature provides an equivalent level of safety in this regard.

Administrative Section

Acronyms and Abbreviations

Acronym / Abbreviation	Definition
TCDS	Type Certificate Data Sheet
SC	Special Condition
DEV	Deviation
ESF	Equivalent Safety Finding

Amendment Record

Annex Issue No.	Annex Issue Date	Changes
1	23 November 2023	The content of the initial issue of this UK CAA TCDS Annex was taken from EASA TCDS EASA.IM.A.035 Annex which was the current EASA version at 31st December 2020 and therefore the version of the TCDS for the Boeing 767 aircraft accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement

– END OF ANNEX –