This annex to the EASA TCDS A.064 was created to publish selected special conditions that are part of the applicable certification basis:

Table of Content:

**D-0306-000**: Heat + Smoke Density Requirements to Seat Materials ........................................ 2  
**E-2105**: Type III Overwing Emergency Exit Access ................................................................. 3  
**E-2107**: Passenger Extension to 180 ......................................................................................... 5  
**E-34**: Seats with Inflatable Restraints ...................................................................................... 6  
**E-3002**: Reclassification of doors 2 & 3 to type III ................................................................. 8  
**G-1006**: ETOPS ........................................................................................................ 9  
**H-01**: Enhanced Airworthiness Programme for Aeroplane Systems - ICA on EWIS ........ 11
SPECIAL CONDITION
D-0306-000: Application of Heat Release and Smoke Density Requirements to Seat Materials

APPLICABILITY: A318 / A319 / A320 / A321

REQUIREMENTS: JAR 25.853(a-1) at Change 13; JAR 25.853(c) at Change 14; CS 25 25.853(d); Appendix F Part IV and V

ADVISORY MATERIAL: AMC 25.853

1. Except as provided in paragraph 3 of these special conditions, compliance with CS25, Appendix F, parts IV and V, heat release and smoke emission, is required for seats 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 0.139 m² (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 0.418 m² (4.5 square feet) excluded on any portion of the assembly (e.g., outboard seat place 0.093 m² (1 square foot), middle 0.093 m² (1 square foot), and inboard 0.231 m² (2.5 square feet)).

3. Seats do not have to meet the test requirements of CS25, 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 will be affected by the requirements in these special conditions. This Special Condition 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:
      • does not affect seat design;
      • does not introduce changes to seat design that affect panels that could be defined as "non-traditional, large, non-metallic panels".
SPECIAL CONDITION | E-2105: Type III Overwing Emergency Exit Access
---|---
APPLICABILITY: | A320
REQUIREMENTS: | JAR 25.813(c)(1), JAR 25.807(a)(3)
ADVISORY MATERIAL: | N/A

Statement of Issue I:

As a result of positioning the Type III sill height to meet the step down requirements of JAR 25.807(a)(3) and hence preclude the need for a supplementary step outside the aircraft, the passenger seat cushion immediately adjacent to the overwing exit encroaches into the outline of the exit in the fuselage.

JAR 25.813(c)(1) requires that the projected opening of the exit provided may not be obstructed and there must be no interference in opening the exit by seats, berths or other protrusions for the width of a passenger seat.

The actual opening in the fuselage is however larger than the minimum, i.e. 20” x 40” rather than 20” x 36”.

The Airworthiness Authorities are prepared to accept compliance by Equivalent Safety based upon the following:

- Tests have shown that such an encroachment will not interfere with the effective opening of each overwing hatch.
- The actual opening in the side of the fuselage is larger than the minimum required.
- The seat cushion is readily compressible down to the level of the exit outline, assuming a force of 170 LB evenly distributed over 40 square inches (this criteria has been found to be an acceptable means of compliance on other aircraft types).

JAA Conclusion:

JAA accepts an Equivalent Safety finding to JAR 25.813(c) on the basis that:

- The A320 Type III exit is 4” oversize (20” x 40” for a minimum required of 20” x 36”)
- The seat cushion does not encroach into the minimum required exit opening.
- The seat cushion is readily compressible.
- A minimum of 7” unobstructed access is provided to the Type III exit.
- Step down requirement of JAR 25.807 is met without providing any supplementary step outside.

In addition, it has been demonstrated by test that there is no interference in opening the exit.

Statement of Issue II:

The outboard seat adjacent to the emergency exit has been equipped with thinner seat cushion and the comfort is reduced. This could be improved by an increase of the outboard seat cushion height to 18.8” (instead of 16.8”) in combination with a minimum 10” passageway leading to the exit.

Test has demonstrated that with a minimum access passageway to each Type III exit of 10”, there is sufficient width of exit sill to allow compliance with JAR 25.807(a)(3), i.e. the ‘step down’ is from the sill rather than the compressed seat cushion.
JAA Conclusion:

An Equivalent Safety finding with JAR 25.813(c)(1) is granted on the basis that:

- There is no interference with exit operation (as demonstrated by test), provided the seat cushion height is limited to 18.8”.
- Whilst the seat cushion does intrude into the ‘exit opening provided’, this is compensated by the provision of a larger than minimum Type III exit size, i.e. the seat cushion line is beneath the 20” x 36” minimum exit opening.
SPECIAL CONDITION | E-2107: Passenger Extension to 180
---|---
APPLICABILITY: | A320
REQUIREMENTS: | JAR 25.807
ADVISORY MATERIAL: | N/A

Statement of Issue:

An application was made on September 30, 1992 to JAA for certification of maximum number of passengers of 180.

Paragraph 25.807(c)(1) of JAR specifies for passenger seating configuration, the number and types of Emergency Exits for each side of the fuselage. The maximum seating capacity allowable under JAR 25.807(c)(1) for A320 exit configuration is 179 (2 Type I and 2 Type III).

However, the exits size for front and rear doors on the A320 is such (32x73 inches) that they are oversized Type I and therefore can be considered as a non standard exit arrangement.

The same exit size is being used on a derivative of the A320, for which Latin Square Tests have been conducted in order to establish an appropriate rating for that kind of exits. These tests have shown that, when associated with the performance of the slide installed at these exits, a rating of 55 passengers is appropriate.

It should also be noted that the full scale emergency evacuation demonstration of the A320 with 179 passengers has demonstrated compliance with JAR 25.803(c) with sufficient margin to justify 180 passengers.

Under those conditions, a maximum capacity of 180 passengers is requested for the A320.

JAA Conclusion:

Based upon the demonstrated higher rating for the floor level exits and the adequate margins for 179 passengers shown in the 90 seconds demonstration, and used as a basis to show compliance to JAR 25.803(c), the JAA accept 180 passengers as the maximum capacity for the A320 on the basis of an Equivalent Safety Finding.
SPECIAL CONDITION | E-34: Seats with Inflatable Restraints
---|---
APPLICABILITY: | A318 / A319 / A320 / A321
REQUIREMENTS: | JAR 25.562(c)(5)
ADVISORY MATERIAL: | N/A

1) HIC Characteristic
The existing means of controlling Head Injury Criterion (HIC) result in an unquantified but nominally predictable progressive reduction of injury severity for impact conditions less than the maximum specified by the rule. Airbag technology however involves a step change in protection for impacts below and above that at which the airbag device deploys. This could result in the HIC being higher at an intermediate impact condition than that resulting from the maximum.
It is acceptable for the HIC to have such a non-linear or step change characteristic provided that the value does not exceed 1000 at any condition at which the inflatable lap belt does or does not deploy, up to the maximum severity pulse specified by the requirements. Tests must be performed to demonstrate this taking into account any necessary tolerances for deployment.

2) Intermediate Pulse Shape
The existing ideal triangular maximum severity pulse is defined in FAA AC 25.562.1. EASA considers that for the evaluation and testing of less severe pulses, a similar triangular pulse should be used with acceleration, rise time, and velocity change scaled accordingly.

3) Protection during Secondary Impacts
EASA acknowledges that the inflatable lap belt will not provide protection during secondary impacts after actuation. However, evidence must be provided that the post-deployment features of the installation shall not result in an unacceptable injury hazard. This must include consideration of the deflation characteristics in addition to physical effects. As a minimum, a qualitative assessment shall be provided.
Furthermore, the case where a small impact is followed by a large impact must be addressed. In such a case if the minimum deceleration severity at which the airbag is set to deploy is unnecessarily low, the bag's protection may be lost by the time the second larger impact occurs. It must be substantiated that the trigger point for airbag deployment has been chosen to maximize the probability of the protection being available when needed.

4) Protection of Occupants other than 50th Percentile
The existing policy is to consider other percentile occupants on a judgmental basis only i.e. not using direct testing of inquiry criteria but evidence from head paths etc. to determine likely areas of impact.
The same philosophy may be used for inflatable lap belts in that test results for other size occupants need not be submitted. However, sufficient evidence must be provided that other size occupants are protected.
A range of stature from a two-year-old child to a ninety-five percentile male must be considered.
In addition the following situations must be taken into account:
The seat occupant is holding an infant, including the case where a supplemental loop infant restraint is used:
The seat occupant is a child in a child restraint device.
The seat occupant is a pregnant woman

5) Occupants Adopting the Brace Position
There is no requirement for protection to be assessed or measured for set occupants in any other position or configuration than seated alone upright, as specified in FAA AC 25.562-1A (dated 19 January 1996). However, it must be shown that the inflatable lap
belt does not, in itself, form a hazard to any occupant in a brace position during deployment.

6) It must be shown that the gas generator does not release hazardous quantities of gas or particulate matter into the cabin.

7) It must be ensured by design that the inflatable lap belt cannot be used in the incorrect orientation (twisted) such that improper deployment would result.

8) The probability of inadvertent deployment must be shown to be acceptably low. The seated occupant must not be seriously injured as a result of the inflatable label deployment, including when loosely attached. Inadvertent deployment must not cause a hazard to the aircraft or cause injury to anyone who may be positioned close to the inflatable lap belt (e.g. seated in an adjacent seat or standing adjacent to the seat). Cases where the inadvertently deploying inflatable lap belt is buckled or unbuckled around a seated occupant and where it is buckled or unbuckled in an empty seat must be considered.

9) It must be demonstrated that the inflatable lap belt when deployed does not impair access to the buckle, and does not hinder evacuation, including consideration of adjacent seat places and the aisle.

10) There must be a means for a crewmember to verify the integrity of the inflatable lap belt activation system prior to each flight, or the integrity of the inflatable lap belt activation system must be demonstrated to reliably operate between inspection intervals.

11) It must be shown that the inflatable lap belt is not susceptible to inadvertent deployment as a result of wear and tear, or inertial loads resulting from in-flight or ground manoeuvres likely to be experienced in service.

12) The equipment must meet the requirements of JAR 25.1316 with associated guidance material IMS-1006 for indirect effects of lightning. Electrostatic discharge must also be considered.

13) The equipment must meet the requirements for HIRF (SC S-10.2 and IMS-10.2) with an additional minimum RF test for the threat from passenger electronic devices of 15 Watts radiated power.

14) The inflatable lap belt mechanisms and controls must be protected from external contamination associated with that which could occur on or around passenger seating.

15) The inflatable lap belt installation must be protected from the effects of fire such that no hazard to occupants will result.

16) The inflatable lap belt must provide adequate protection for each occupant regardless of the number of occupants of the seat assembly or adjacent seats considering that unoccupied seats may have active inflatable lap belts, which may be buckled or unbuckled.

17) Each inflatable lap belt must function properly following any separation in the fuselage.

18) It is accepted that a material suitable for the inflatable bag that will meet the normally accepted flammability standard for a textile, i.e. the 12 second vertical test of JAR25 Appendix F, Part 1, Paragraph (b)(4), is not currently available. In recognition of the overall safety benefit of inflatable lap belts, and in lieu of this standard, it is acceptable for the material of the inflatable bags to have an average burn rate of no greater than 2.5 inches/minute when tested using the horizontal flammability test of JAR25 Appendix F, part I, paragraph (b)(5).
### CERTIFICATION REVIEW ITEM

<table>
<thead>
<tr>
<th>E-3002: Reclassification of doors 2 &amp; 3 to type III</th>
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<tbody>
<tr>
<td>APPLICABILITY:</td>
</tr>
<tr>
<td>REQUIREMENTS:</td>
</tr>
<tr>
<td>ADVISORY MATERIAL:</td>
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**Statement of Issue:**

On the basic A321 aircraft, the doors 2 and 3 are classified as non-standard floor level exits (see CRI E3001), equipped with assist means.

As a customer option, the applicant wishes to reclassify these exits to the requirements of a Type III to allow a revised seating arrangement around these exits.

The maximum seating capacity would be adjusted accordingly.

Each of the exits will be provided with:
- an unobstructed 12 inch passageway from the aisle to the exit,
- an assist space of appropriate dimensions,
- a cabin attendant seat,
- exit operating placards installed on each exit and on the back of passenger seats in front of the passageway,
- fixed seat backs and restricted recline and break-over for all seats bounding the passageways to the exits,
- outboard seat armrest will not encroach into the exit clear opening.

The exit design and operating mechanism, and the slide configuration would remain unchanged from the basic floor level exit arrangement.

On this basis, the applicant wishes to rate these Type III exits at 35 passengers, i.e.

Maximum capacity for either doors 2 and 3 changed to Type III = 200 pax.
Maximum capacity with both doors 2 and 3 classified as Type III = 180 pax.

**JAA Position:**

In view of the close proximity of passengers to the exit operating system, the arrangement must be designed to minimise the likelihood of inadvertent operation of disarm / arm lever.

The provision of a cabin attendant seat and an associated assist space in a position next to and to the right of the aisle is considered satisfactory as meeting the intent of JAR 25.785 and 25.813.

Since the modified exit arrangement involves a floor level exit with assist means, a cabin attend will be required at these exists to manage the assist means.

**IM-E4:**

The projected opening of the minimum required Type III exit may not be obstructed and the 12 inch unobstructed passageway leading from the aisle to the exit must be totally within the contour of the minimum required Type III exit.
### INTERPRETATIVE MATERIAL

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<thead>
<tr>
<th>G-1006: ETOPS</th>
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<tr>
<td><strong>APPLICABILITY:</strong></td>
</tr>
<tr>
<td><strong>REQUIREMENTS:</strong></td>
</tr>
<tr>
<td><strong>ADVISORY MATERIAL:</strong></td>
</tr>
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### Statement of Issue I:

The Airbus A320 models are certified '120 minutes ETOPS' against the CAA-UK 'CAP 513' and the FAA Advisory Circular 'AC 120-42A ETOPS' requirements,

For the A320 equipped with CFM or IAE engines, Airbus ELECT TO COMPLY with the JAA ETOPS requirements 'Information leaflet N°20' (IL 20) dated 1/7/1995 (revised) for ETOPS 180 minutes Type Design Approval.

The purpose of this CRI is to address this Elect To Comply.

... Discussion removed

### Conclusion:

a) With regard to the A320 ETOPS certification basis:

The A320 JAA ETOPS Type Design Approval (eligibility and capability) will be re-assessed according to JAR Information Leaflet N° dated 1/7/1995.

However the following consideration should be taken into account:

The JAA have considered the fact that the third generator (CSM/G) is not capable to power the weather radar, landing lights, auto-pilot, auto-throttle, main fuel pumps and windshield anti-icing.

The availability of those services was not required by the A320 initial ETOPS certification basis (CAA CAP513).

The JAA agree to apply the grandfather clause as defined in the IL 20.

Therefore, for A320, the availability of the above-mentioned services is accepted when the CSM/G is used as third generator.

b) With regard to the A320 ETOPS MMEL (CFMI and IAE engines):

Dispatch with one engine driven generator is not allowed for ETOPS.

Dispatch for one return flight with the APU/APU GEN inoperative is allowed for 120 minutes ETOPS.

Dispatch for ETOPS 180 minutes flight is only permitted with all generators serviceable.

### Statement of Issue II (September 2003):

A - The criteria at IL20 / AMJ 120-42 has been published in final ACJ format (without technical change) as ACJ 20X6 in GAI 20. The new reference will supersede all reference to IL20 / AMJ 120-42 in JAA material. The operational provisions of ACJ 20X6 are immediately applicable for the operational approval of concerned airlines. This material does not refer to the design provisions of original IL20 but only to those of ACJ 20X6.
B - The CRI wording concerning dispatch with APU / APU GEN inoperative is not in line with JOEB wording.

The purpose of Issue 2 of this CRI is to address the change in the publication reference of JAA ETOPS criteria and the inconsistency of wording between this CRI and the MMEL and CMP document.

... Discussion removed

Conclusion:

A - Concerned manuals will be re-issued with reference to ACJ 20X6 at next normal revision date.

B - All references in this CRI to "Dispatch for one return flight" with APU/APU GEN inoperative shall be interpreted as "dispatch for 4 flights" with APU/APU GEN inoperative for 120 minutes ETOPS (all electrical generators must be serviceable for 180 minutes ETOPS dispatch).
SPECIAL CONDITION | H-01: Enhanced Airworthiness Programme for Aeroplane Systems - ICA on EWIS
---|---
APPLICABILITY: | A318 / A319 / A320 / A321
REQUIREMENTS: | PART 21A.16B(a)(3), 21A.3B(c)(1), CS 25.1529 + Appendix H
ADVISORY MATERIAL: | N/A

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.
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.
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.

- END -