

**Certification Specifications
and Guidance Material
for
Additional airworthiness specifications
for operations
(CS-26)**

Issue 4

8 September 2022¹

¹ For the date of entry into force of this Issue, kindly refer to ED Decision 2022/019/R in the [Official Publication](#) of EASA.

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PREAMBLE

CS-26 Issue 4

Effective: See Decision 2022/019/R

The following is a list of paragraphs affected by this amendment.

Subpart B

- CS 26.201 Created (NPA 2020-05)

Subpart C

- CS 26.410 Created (NPA 2020-16)
- CS 26.415 Created (NPA 2020-16)
- GM1 26.415(b) Created (NPA 2020-16)
- GM1 26.415(c) Created (NPA 2020-16)
- GM1 26.415(d) Created (NPA 2020-16)
- CS 26.420 Created (NPA 2020-16)
- GM1 26.420(a) Created (NPA 2020-16)
- GM1 26.420(c) Created (NPA 2020-16)
- CS 26.425 Created (NPA 2020-16)
- CS 26.430 Created (NPA 2020-16)
- CS 26.431 Created (NPA 2020-16)
- GM1 26.431 Created (NPA 2020-16)
- CS 26.435 Created (NPA 2020-16)
- GM1 26.435(b) Created (NPA 2020-16)

CS-26 Issue 3

Effective: See Decision 2020/023/R

The following is a list of the paragraphs that are affected by this Amendment.

Book 1 – CERTIFICATIONS SPECIFICATIONS

Subpart B

- CS 26.50 Editorial change
- CS 26.60 Editorial change
- CS 26.100 Editorial change

— CS 26.105	Editorial change
— CS 26.110	Editorial change
— CS 26.120	Editorial change
— CS 26.150	Editorial change
— CS 26.155	Editorial change
— CS 26.156	Editorial change
— CS 26.157	Created (NPA 2019-02)
— CS 26.160	Editorial change
— CS 26.170	Editorial change
— CS 26.200	Editorial change
— CS 26.205	Created (NPA 2018-12)
— CS 26.300(c), 26.330(c) and (d)	Created (NPA 2013-07)
— CS 26.301	Created (NPA 2013-07)
— CS 26.302	Created (NPA 2013-07)
— CS 26.303(a) and (c)	Created (NPA 2013-07)
— CS 26.304(a)	Created (NPA 2013-07)
— CS 26.305(a) and (c)	Created (NPA 2013-07)
— CS 26.306(a) and (d)	Created (NPA 2013-07)
— CS 26.307(a)(i),(ii) and (b)	Created (NPA 2013-07)
— CS 26.307(a)(iii) and (c)	Created (NPA 2013-07)
— CS 26.308	Created (NPA 2013-07)
— CS 26.309	Created (NPA 2013-07)
— CS 26.331	Created (NPA 2013-07)
— CS 26.332	Created (NPA 2013-07)
— CS 26.333 and 26.334	Created (NPA 2013-07)
— CS 26.370	Created (NPA 2013-07)
— CS 26.400	Editorial change

Book 2 – GUIDANCE MATERIAL

Subpart A

— GM1 26.1	Amended (NPA 2013-07, NPA 2018-12 and NPA 2019-02)
— GM1 26.156(a)	Editorial change
— GM1 26.205	Created (NPA 2018-12)
— GM1 26.300(b) and 26.330(b)	Created (NPA 2013-07)
— GM1 26.300(c) and 26.330(c)	Created (NPA 2013-07)
— GM1 26.303(a)	Created (NPA 2013-07)
— GM1 26.332(a)(iii)	Created (NPA 2013-07)
— GM1 26.332(c)(ii) and 26.334	Created (NPA 2013-07)
— GM1 26.370(a)(ii)	Created (NPA 2013-07)
— GM1 26.400(b)	Created (NPA 2014-26)

CS-26 Issue 2*Effective: See Decision 2019/006/R*

The following is a list of the paragraphs that are affected by this Amendment.

Book 1 – CERTIFICATIONS SPECIFICATIONSSubpart B

- CS 26.50 Editorial change
- CS 26.60 Created (NPA 2013-20)
- CS 26.100 Editorial change
- CS 26.105 Editorial change
- CS 26.110 Editorial change
- CS 26.120 Editorial change
- CS 26.150 Editorial change
- CS 26.155 Editorial change
- CS 26.156 Created (NPA 2015-15)
-
- CS 26.100 Editorial change
- CS 26.170 Created (NPA 2014-26)
- CS 26.200 Editorial change
- CS 26.400 Editorial change

Subpart C

- CS 26.400 Created (NPA 2014-26)

Book 2 – GUIDANCE MATERIALSubpart A

- GM1 CS 26.1 Amended (NPA 2013-20)
- GM1 CS 26.60 Created (NPA 2013-20)

Subpart B

- GM1 CS 26.156(a) Created (NPA 2015-15)

SUBPART A — GENERAL PROVISIONS

CS 26.1 Purpose and scope

This CS is the standard means to show compliance of products with the requirements of Annex I (Part-26) to Commission Regulation (EU) 2015/640. (See GM1 26.1 and GM2 26.1)

GM1 26.1 JAR-26 / JAR/CS-25 / FAR-25+121 / OPS / Part-26 / CS-26 / GM-26 cross-reference table

This table is intended to be a quick cross-reference table between those requirements that are contained on the one hand in Part-26, CS-26 and GM 26, and on the other hand their 'parent' airworthiness code, if one exists, i.e. JAR-26, the FAA's FAR-25 and/or FAR Part 121, as well as the related EU-OPS and the new EASA Operational requirements. This table is only indicative, and it does not pre-empt compliance with the applicable requirements, which shall be assessed by the competent authority.

JAR-26	JAR-25 / CS-25	FAR-25/ Part 121	OPS	Part-26	CS-26	GM-26
N/A	n/a	n/a	n/a	26.301	CS 26.301	n/a
N/A	n/a	n/a	n/a	26.305	CS 26.305 (a) and (c)	n/a
N/A	n/a	n/a	n/a	26.331	CS 26.331	n/a
N/A	n/a	n/a	n/a	26.370	CS 26.370	GM1 26.370(a)(ii)
N/A	n/a	n/a	n/a	26.400	CS 26.400	GM1 26.400b
N/A	JAR 25.562 CS 25.562	FAR 25.562 FAR 121.311(j) Amdt 121-315	CAT.IDE.A.2 05	26.60	CS 26.60	GM1 26.60
N/A	CS/JAR 25.571	FAR 25.571	n/a	26.300	CS 26.300(c), 26.330(c) and (d)	GM1 26.300(b) and 26.330(b); GM1 26.300(c) and 26.330(c)
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.302	CS 26.302	n/a
N/A	CS 25.571 at Amendment 19	FAR 25.571 at Amendment 132	n/a	26.303	CS 26.303 (a) and (c)	GM1 26.303(a)
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.304	CS 26.304 (a)	n/a
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.306	CS 26.306 (a) and (d)	n/a
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.307	CS 26.307 (a)(i),(ii), and (b); CS 26.307(a)(i) and (c)	n/a

N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.308	CS 26.308	n/a
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.309	CS 26.309	n/a
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.330	CS 26.300(c), 26.330(c) and (d)	GM1 26.300(b) and 26.330(b); GM1 26.300(c) and 26.330(c)
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.332	CS 26.332	GM1 26.332(a)(iii); GM1 26.332(c)(ii) and 26.334
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.333	CS 26.333 and 26.334	n/a
N/A	CS/JAR 25.571 (a) and (b)	FAR 25.571 (a) and (b)	n/a	26.334	CS 26.333 and 26.334	GM1 26.332(c)(ii) and 26.334
N/A	CS 25.705	n/a	n/a	26.205	CS 26.205	GM1 26.205
N/A	CS 25.851(c)	n/a	n/a	26.170	CS 26.170	GM1 26.170(b)
N/A	CS 25.856	FAR 25.856 121.312(e)	n/a	26.156	CS 26.156	GM1 26.156(a)
N/A	CS 25.857 (c) & (e) CS 25.858	FAR 857(c) & (e) FAR 25.858 FAR 121.314(c)	n/a	26.157	CS 26.157	n/a
JAR 26.1	n/a	n/a	n/a	n/a	n/a	n/a
JAR 26.2	n/a	n/a	n/a	n/a	n/a	n/a
JAR 26.3	n/a	n/a	n/a	26.30(b) (2)	n/a	n/a
JAR 26.5	n/a	n/a	n/a	n/a	n/a	n/a
JAR 26.50	JAR 25.785(h), (j) & (k) at Change 8, 30/11/81 CS 25.785(g)	FAR 25.785(g), Amdt 25-51, 06/03/80 FAR 121.311 (d)(f) & (g) at Change 21, 17/02/98	OPS 1.730 CAT.IDE.A.2 05	26.50	CS 26.50	GM1 26.50(c)
JAR 26.100	JAR 25.807(d)(7) at Change 13 and Amdt 93/1 08/03/93 CS 25.807	121.310(m)	n/a	26.100	CS 26.100	n/a
JAR 26.105	JAR 25.813(d) to (f) at Change 8, 30/11/81 CS 25.813	121.310(f)	OPS 1.735 CAT.IDE.A.2 15	26.105	CS 26.105	n/a
JAR 26.110	JAR 25.811(a) to (d) and (f) to (g) at Change 8, 30/11/81	121.310(b)	OPS 1.815 CAT.IDE.A.2 75	26.110	CS 26.110	GM1 26.110(d); GM1 26.110 (e)(4)

	JAR 25.811(e) at Change 14, 27/05/94 CS 25.811					
JAR 26.120	JAR 25.812 (b),(c),(d) & (h) at Change 8, 30/11/81 JAR 25.812 (a) & (e) at Change 12, 16/06/86 CS 25.812	FAR 121.310 (b),(c) & (d) at Change 21, 17/02/98	OPS 1.815(a)(1) CAT.IDE.A.2 75(b)	26.120	CS 26.120	n/a
JAR 26.125	JAR 25.812 (f) & (g) at Change 8, 30/11/81 CS 25.812	FAR 121.310 (h)(1) at Change 21, 17/02/98	OPS 1.185(a)(1)(i v) and (v) CAT.IDE.A.2 75(b)(4) and (5)	n/a	n/a	n/a
JAR 26.130	CS 25.810	FAR 25.2 (a) at Amdt 25-72, 20/08/90 FAR 121.310 (a) & (h)(2) at Change 21, 17/02/98	OPS 1.805 CAT.IDE.A.2 65	n/a	n/a	n/a
JAR 26.150	JAR 25.791 at Change 8, 20/11/81 JAR 25.853(a) to (d) at Change 14, 27/05/94 JAR 25.853(e) at Change 13 plus Amdt 91/1, 12/04/91 JAR 25.853(f) and Appendix F at Change 14, 27/05/94 Appendix F, Part I, at Amdt 93/1, 08/03/93 Appendix F, Part II, III, IV, V at Change 13 05/10/89 CS 25.853	FAR 121.312	OPS 1.731 CAT.IDE.A.2 10	26.150	CS 26.150 App. F	GM1 26.150 (a) ; GM1 26.150 (c) ; GM1 26.150 (d)
JAR 26.155	JAR 25.855 and Appendix F, Part III at Change.13 plus Amdt 93/1, 08/03/93 CS 25.855	121.314	n/a	26.155	CS 26.155 App. F	n/a

JAR 26.160	JAR 25.854 at Change.13 at Amdt 93/1, 08/03/93 CS 25.854	121.308	n/a	26.160	CS 26.160	n/a
JAR 26.200	JAR 25.729 at Amdt 93/1, 08/03/93 CS 25.729	121.289, Amdt 121-227	n/a	26.200	CS 26.200	n/a
JAR 26.250	n/a	121.313(j)(1)(ii)	n/a	26.250	n/a	n/a
JAR 26.260	CS 25.795	121.313(j)(1)(ii)	OPS 1.1255 ORO.SEC.10 0.A	n/a	n/a	n/a

[Issue: 26/3]

GM2 26.1 Demonstration of compliance

For the initial issue of Part-26, which is a transposition of existing JAR-26 requirements, the operators will be responsible for showing compliance. In most cases this can be done by referring to the certification basis of the aircraft or the approved changes in which the amendment level of the certification specification will indicate compliance. In any case, the JAR-26 requirements should have been implemented already by EU operators and since the CS-26 text is equivalent to the JAR-26 text, compliance with JAR-26 means also compliance with Part-26. See also Article 5 of the Commission Regulation (EU) 2015/640 In the rare case where the above possibilities are not sufficient, showing compliance by the operator directly to the NAA will be difficult. They will need to involve the design approval holder of the aircraft or the approved change as relevant. This design approval holder should then apply to the EASA for certification that the design complies with the relevant CS-26 or CS-25 paragraph, special condition or equivalent safety case. With that approval information the operator can show compliance to the NAA.

[Issue: 26/2]

SUBPART B — LARGE AEROPLANES

CS 26.50 Seats, berths, safety belts, and harnesses

Compliance with point 26.50 of Part-26 is demonstrated by complying with CS 25.785(g), (h), (j) & (k) of CS-25, or equivalent or with the following:

- (a) Each seat at a flight deck station is equipped with a combined safety belt and shoulder harness with a single-point release that permits the flight deck occupant, when seated with safety belt and shoulder harness fastened, to perform all of the occupant's necessary flight deck functions. There must be a means to secure each combined safety belt and shoulder harness, when not in use, to prevent interference with the operation of the aeroplane and with rapid egress in an emergency. Shoulder harness and combined safety belt and shoulder harness that were approved and installed prior to 6 March 1980 may continue to be used. Safety belt and shoulder harness restraint systems may be designed to the inertia load factors established under the certification basis of the aeroplane.
- (b) Each seat for a cabin crew member required by Part-ORO.CC.100, located in passenger compartments:
 - (1) is equipped with a restraint system consisting of a combined safety belt and shoulder harness unit with a single point release. Each combined safety belt and shoulder harness is equipped with a means to secure it, when not in use, to prevent interference with rapid egress in an emergency;
 - (2) to the extent possible, without compromising their proximity to required floor level emergency exits, is located to provide a direct view of the cabin area for which the cabin crew member is individually responsible, except that for aeroplanes with a certification basis prior to JAR 25.785 at Change 8 (or FAR Part 25, §25.785, at Amendment 25-51 respectively), cabin crew member seats need not be re-located to meet that condition if an indirect view into the passenger cabin is given by a mirror;
 - (3) is:
 - (i) either forward or rearward facing, with an energy absorbing rest that is designed to support the arms, shoulders, head, and spine; and
 - (ii) positioned so that when not in use they do not interfere with the use of passageways and exits.

Combined safety belt and shoulder harness that were approved and installed prior to 6 March 1980 may continue to be used. Safety belt and shoulder harness restraint systems may be designed to the inertia load factors established under the certification basis of the aeroplane.
- (c) Each seat for a cabin crew member required by Part-ORO.CC.100, is located to minimise the probability of its occupant suffering injury by being struck by items dislodged in a galley, or from a stowage compartment or serving cart. All items expected in these locations in service are considered. (See GM1 26.50(c))
- (d) Each occupant of a seat that makes more than an 18-degree angle with the vertical plane containing the aeroplane centreline is protected from head injury by a safety belt and an energy absorbing rest that will support the arms, shoulders, head and spine, or by a safety belt and shoulder harness that prevents the head from contacting any injurious object. Each occupant

of any other seat is protected from head injury by a safety belt and, as appropriate to the type, location, and angle of facing of each seat, by one or more of the following:

- (1) a shoulder harness that will prevent the head from contacting any injurious object;
- (2) the elimination of any injurious object within striking radius of the head;
- (3) an energy absorbing rest that will support the arms, shoulders, head, and spine.

[Issue: 26/3]

GM1 26.50(c) Cabin crew seat location with respect to injury risk

AC 25.785-1B, Section 8 is applicable when showing compliance with CS 26.50(c).

CS 26.60 Emergency landing – dynamic conditions

Compliance with point 26.60 of Part-26 is demonstrated by complying with CS 25.562 of CS-25, or its equivalent, or with the following (see GM1 26.60):

- (a) Each seat type design that is approved for occupancy during taxiing, take-off, or landing must successfully complete dynamic tests or be demonstrated by rational analysis based on dynamic tests of a similar type seat, in accordance with each of the following emergency landing conditions. The tests must be conducted with an occupant simulated by a 77 kg (170 lb) anthropomorphic test dummy sitting in the normal upright position. The tests must include:
 - (1) A change in the downward vertical velocity (Δv) of not less than 10.7 m/s (35 ft/s), with the aeroplane's longitudinal axis canted downward at 30 degrees with respect to the horizontal plane, and with the wings level. The peak floor deceleration must occur in not more than 0.08 seconds after the impact, and reach a minimum of 14 g.
 - (2) A change in the forward longitudinal velocity (Δv) of not less than 13.4 m/s (44 ft/s), with the aeroplane's longitudinal axis horizontal and yawed by 10 degrees either to the right or the left, whichever would cause the greatest likelihood of the upper torso restraint system (if one is installed) moving off the occupant's shoulder, and with the wings level. The peak floor deceleration must occur in not more than 0.09 seconds after the impact, and it must reach a minimum of 16 g. If floor rails or floor fittings are used to attach the seating devices to the test fixture, the rails or fittings must be misaligned with respect to the adjacent set of rails or fittings by at least 10 degrees vertically (i.e. away from being parallel), with one rolled by 10 degrees.
- (b) The following performance measures must not be exceeded during the dynamic tests that are conducted in accordance with subparagraph (a) of this paragraph:
 - (1) If upper torso straps are used, the tension loads in the individual straps must not exceed 794 kg (1 750 lb). If dual straps are used to restrain the upper torso, the total strap tension loads must not exceed 907 kg (2 000 lb).
 - (2) The maximum compressive load that is measured between the pelvis and the lumbar column of the anthropomorphic dummy must not exceed 680 kg (1 500 lb).
 - (3) The upper torso restraint straps (if installed) must remain on the occupant's shoulder during the impact.
 - (4) The lap safety belt must remain on the occupant's pelvis during the impact.

- (5) Each occupant must be protected from serious head injury under the conditions that are prescribed in sub-paragraph (a) of this paragraph. Where head contact with seats or other structure can occur, protection must be provided so that the head impact does not exceed a Head Injury Criterion (HIC) of 1 000 units. The level of HIC is defined by the equation —

$$HIC = \left\{ (t_2 - t_1) \left[\frac{1}{(t_2 - t_1)} \int_{t_1}^{t_2} a(t) dt \right]^{2.5} \right\}_{\max}$$

Where —

't1' is the initial integration time,

't2' is the final integration time, and

'a(t)' is the total acceleration vs time curve for the head strike, and where

'(t)' is in seconds, and '(a)' is in units of gravity (g).

- (6) Where leg injuries may result from contact with seats or other structures, protection must be provided to prevent axially compressive loads that exceed 1 021 kg (2 250 lb) in each femur.
- (7) The seat must remain attached at all points of attachment, although the structure may have yielded.
- (8) Seats must not yield under the tests that are specified in sub-paragraphs (a)(1) and (a)(2) of this paragraph to the extent that they would impede the rapid evacuation of the occupants of the aeroplane.

[Issue: 26/3]

GM1 26.60 Emergency landing – dynamic conditions

AC 25.562-1B (dated 10 January 2006) may be used for showing compliance with CS 26.60.

[Issue: 26/2]

CS 26.100 Location of emergency exits

Compliance with point 26.100 of Part-26 is demonstrated by complying with the following:

If one or more emergency exits are deactivated, the distance(s) between the remaining exits is (are) no more than 18.3 m (60 feet) from any adjacent passenger emergency exit on the same side of the same deck of the fuselage, as measured parallel to the aeroplane's longitudinal axis between the nearest exit edges.

[Issue: 26/3]

CS 26.105 Emergency exit access

Compliance with point 26.105 of Part-26 is demonstrated by complying with CS 25.813(d) to (f) or equivalent, or with the following:

- (a) Reserved.
- (b) If it is necessary to pass through a passageway between passenger compartments to reach any required emergency exit from any seat in the passenger cabin, the passageway is unobstructed. However, curtains may be used if they allow free entry through the passageway.
- (c) No door is installed in any partition between passenger compartments.
- (d) If it is necessary to pass through a doorway separating the passenger cabin from other areas to reach any required emergency exit from any passenger seat, the door has a means to latch it in the open position. The latching means withstands the loads imposed upon it when the door is subjected to the ultimate inertia forces, relative to the surrounding structure, prescribed in CS 25.561(b), or equivalent, at the amendment level specified in the relevant Type Certificate Data Sheet, or equivalent document.

[Issue: 26/3]

CS 26.110 Emergency exit markings

Compliance with point 26.110 of Part-26 is demonstrated by complying with CS 25.811(a) to (d), and (f)&(g), or equivalent, and CS 25.811(e) or equivalent, or with the following:

- (a) Each passenger emergency exit, its means of access, and its means of opening are conspicuously marked.
- (b) The identity and location of each passenger emergency exit is recognisable from a distance equal to the width of the cabin.
- (c) Means are provided to assist the occupants in locating the exits in conditions of dense smoke.
- (d) The location of each passenger emergency exit is indicated by a sign visible to occupants approaching along the main passenger aisle (or aisles). There is:
 - (1) a passenger emergency exit locator sign above the aisle (or aisles) near each passenger emergency exit, or at another overhead location if it is more practical because of low headroom, except that one sign may serve more than one exit if each exit can be seen readily from the sign;
 - (2) a passenger emergency exit marking sign next to each passenger emergency exit, except that one sign may serve two such exits if they can both be seen readily from the sign; and
 - (3) a sign on each bulkhead or divider that prevents fore and aft vision along the passenger cabin to indicate emergency exits beyond and obscured by the bulkhead or divider, except that if this is not possible, the sign may be placed at another appropriate location.

Each sign listed in this sub-paragraph may use the word 'exit' in its legend in place of the term 'emergency exit' or a universal symbolic exit sign. The design of the exit signs is chosen to provide a consistent set throughout the cabin. (See GM1 26.110(d))

- (e) The location of the operating handle and instructions for opening exits from the inside of the aeroplane are clearly shown in the following manner:
 - (1) each passenger emergency exit has, on or near the exit, a marking that is readable from a distance of 76 cm (30 inches);
 - (2) each passenger emergency exit operating handle and the cover removal instructions, if the handle is covered, are:

- (i) self-illuminated with an initial brightness of at least 0.51 candela/m² (160 micro-lamberts); or
 - (ii) conspicuously located and well illuminated by the emergency lighting even in conditions of occupant crowding at the exit.
- (3) Reserved
- (4) All Type II and larger passenger emergency exits with a locking mechanism released by motion of a handle, are marked by a red arrow with a shaft at least 19 mm (0.75 inch) wide, adjacent to the handle, that indicates the full extent and direction of the unlocking motion required. The word OPEN is horizontally situated adjacent to the arrow head and is in red capital letters at least 25 mm (1 inch) high. The arrow and word OPEN are located on a background which provides adequate contrast. (See GM1 26.110(e)(4))
- (f) Each emergency exit that is openable from the outside, and its means of opening is marked on the outside of the aeroplane. In addition, the following apply:
- (1) The outside marking for each passenger emergency exit in the side of the fuselage includes one 5 cm (2 inch) coloured band outlining the exit.
 - (2) Each outside marking including the band, has colour contrast to be readily distinguishable from the surrounding fuselage surface. The contrast is such that if the reflectance of the darker colour is 15% or less, the reflectance of the lighter colour is at least 45%. 'Reflectance' is the ratio of the luminous flux reflected by a body to the luminous flux it receives. When the reflectance of the darker colour is greater than 15%, at least a 30% difference between its reflectance and the reflectance of the lighter colour is provided.
 - (3) In the case of exits other than those in the side of the fuselage, such as ventral or tail cone exits, the external means of opening, including instructions if applicable, are conspicuously marked in red, or bright chrome yellow if the background colour is such that red is inconspicuous. When the opening is located on only one side of the fuselage, a conspicuous marking to that effect is provided on the other side.

[Issue: 26/3]

GM1 26.110(d) Universal symbolic exit signs

Guidance on the use of universal symbolic exit signs can be found in AMC 25.812(b)(1).

GM1 26.110(e)(4) Emergency Exit Markings

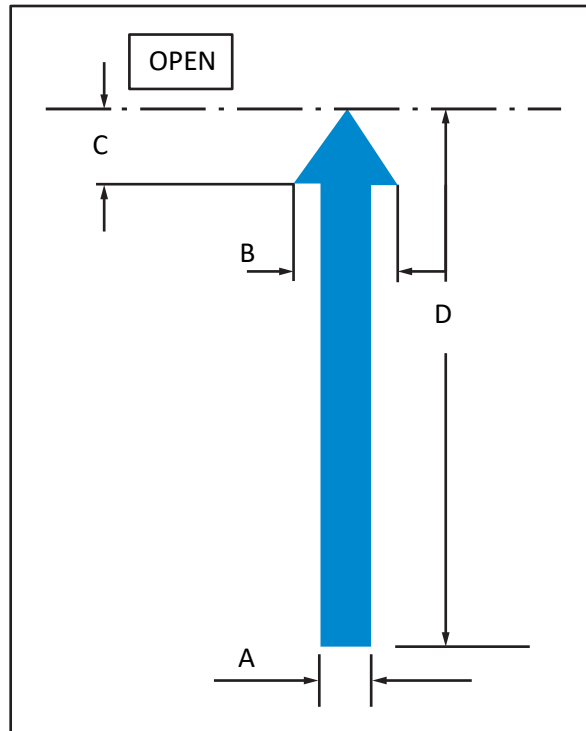
The indicating markings for all Type II and larger passenger emergency exit unlocking handle motions should conform to the general shapes and dimensions indicated by Figures 1 and 2.

NOTE: As far as is practicable the markings should be located to avoid obscuring viewing windows located on or alongside the exits, or coincidence with any other required marking or safety feature.

FIGURE 1

EXAMPLE MARKING FOR INDICATION OF LINEAR OPENING MOTION

Where practical and unambiguous arrow point and base of arrow shaft to be within ± 25 mm (1 inch)



of fully unlocked and fully locked positions respectively

DIMENSIONS

A = 19 mm (0.75") minimum

B = 2 x A

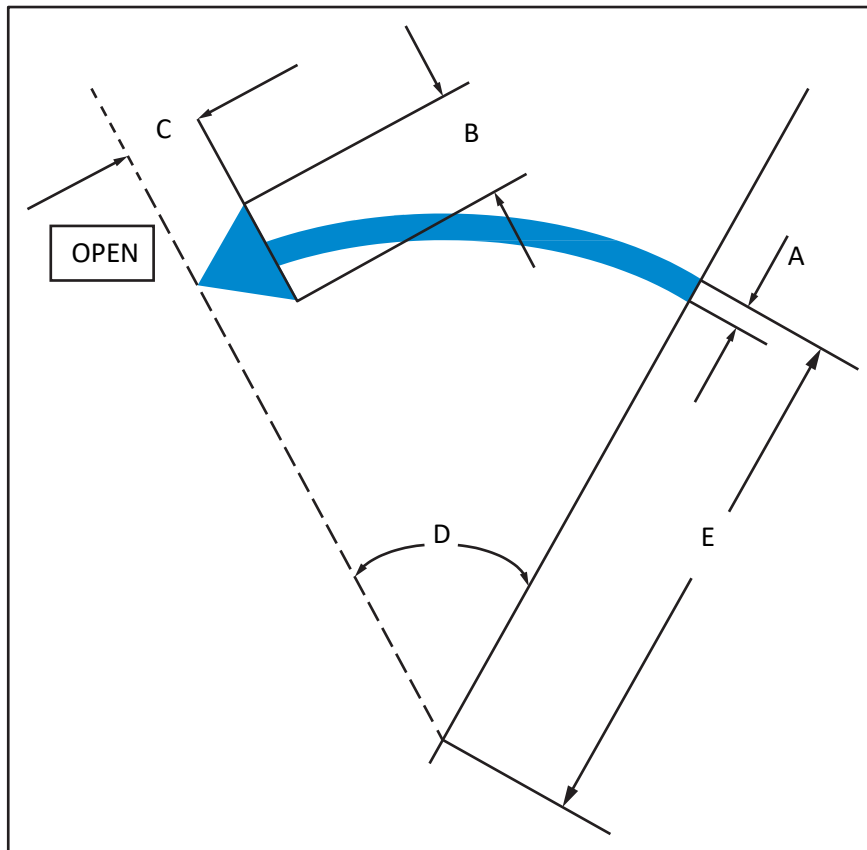
C = B (recommended)

D = Indicative of the full extent of handle travel (each installation to be individually assessed)

FIGURE 2

EXAMPLE MARKING FOR INDICATION OF ROTARY OPENING MOTION

Arrow point and base of arrow shaft to be within ± 25 mm (1 inch) of fully unlocked and fully locked positions respectively



DIMENSIONS

- A = 19 mm (0.75") minimum
- B = 2 x A
- C = B (recommended)
- D = Full extent of handle centreline travel
- E = Three quarters of handle length (where practicable)

CS 26.120 Interior emergency lighting and emergency light operation

Compliance with point 26.120 of Part-26 is demonstrated by complying with CS 25.812 (b),(c),(d) and (h) of CS-25 or equivalent and CS 25.812 (a) and (e) of CS-25 or equivalent, or with the following:

- (a) An emergency lighting system, independent of the main lighting system, is installed. However, sources of general cabin illumination may be common to both the emergency and the main lighting system if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system includes:
- (1) Illuminated emergency exit marking and locating signs, sources of general cabin illumination and interior lighting in emergency exit areas.
 - (2) for aeroplanes that have a maximum approved passenger seating configuration of more than 19, a floor proximity emergency escape path marking provides emergency evacuation guidance for passengers when all sources of illumination more than 1.22 m (4 feet) above the cabin aisle floor are totally obscured. In the dark of the night, the floor proximity emergency escape path marking enables each passenger to:
 - (i) after leaving the passenger seat, visually identify the emergency escape path along the cabin aisle floor to the first exits or pair of exits forward and aft of the seat;
 - (ii) readily identify each exit from the emergency escape path by reference only to markings and visual features not more than 1.22 m (4 feet) above the cabin floor.
- (b) Except for lights forming part of the emergency lighting subsystems provided in compliance with Part CAT.IDE.A.275 (b)(4) and (5) that serve no more than one assist means, are independent of the aeroplane's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required for interior and exterior emergency lighting:
- (1) is operable manually both from the flight crew station and for aeroplanes on which a cabin crew member is required, from a point in the passenger compartment that is readily accessible from a normal cabin crew seat;
 - (2) has a means to prevent inadvertent operation of the manual controls;
 - (3) when armed or turned on at either station, remains lighted or becomes lighted upon interruption of the aeroplane's normal electric power;
 - (4) provides the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing;
 - (5) has a cockpit control device that has an 'on', 'off', and 'armed' position.
- (c) In addition to subparagraphs (a), and (b) above, for an aeroplane which had its initial Certificate of Airworthiness issued prior to 1 December 2006, the following conditions are met:
- (1) For an aeroplane for which the application for the type certificate was filed prior to 1 May 1972:
 - (i) Each passenger emergency exit marking and each locating sign has white letters at least 25 mm (1 inch) high on a red background at least 5 cm (2 inches) high. These signs may be internally electrically illuminated, or self-illuminated by other than electrical means, with an initial brightness of at least 0.509 cd/m² (160 microlamberts). The colours may be reversed in the case of internally electrically illuminated signs if this will increase the illumination of the exit. On these aeroplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 0.318 cd/m² (100 microlamberts).
 - (ii) The sources of general cabin illumination provides enough general lighting in the passenger cabin so that the average illumination when measured at 102 cm (40-inch) intervals at seat armrest height, on the centreline of the main passenger aisle, is at least 0.54 lux (0.05 foot-candle).

- (iii) The floor of the passageway leading to each floor level passenger emergency exit, between the main aisles and the exit openings is provided with illumination.
- (2) For an aeroplane for which the application for the type certificate was filed on or after 1 May 1972, the interior emergency lighting specifications under which the aeroplane was type certificated. On these aeroplanes, no sign may continue to be used if its luminescence (brightness) decreases to below 0.796 cd/m^2 (250 microlamberts).
- (d) In addition to subparagraphs (a) and (b) above, for an aeroplane which had its initial Certificate of Airworthiness issued on or after 1 December 2006, and for which the application for the type certificate was filed prior to 1 May 1972, the following conditions are met:
 - (1) For an aeroplane that has a passenger seating configuration, excluding pilot seats, of:
 - (i) 10 seats or more, each passenger emergency exit locator sign and marking sign required by point 26.110(d) of Part-26 has red letters at least 38 mm (1 ½ inches) high on an illuminated white background, and has an area of at least 135 cm^2 (21 square inches) excluding the letters. The lighted background-to-letter contrast is at least 10:1. The letter height to stroke-width ratio is not more than 7:1 nor less than 6:1. These signs are internally electrically illuminated with a background brightness of at least 86 cd/m^2 (25 foot-lamberts) and a high-to-low background contrast no greater than 3:1. Other passenger emergency exit signs required by point 26.110(d) of Part-26 have red letters at least 38 mm (1 ½ inches) high on a white background having an area of at least 135 cm^2 (21 square inches) excluding the letters. These signs are internally, electrically illuminated or self-illuminated by other than electrical means and have an initial brightness of at least 1.27 cd/m^2 (400 microlamberts). The colours are reversed in the case of a sign that is self-illuminated by other than electrical means. On these aeroplanes, no sign continues to be used if its luminescence (brightness) decreases to below 0.796 cd/m^2 (250 microlamberts).
 - (ii) 9 seats or less, passenger emergency exit signs that are required by point 26.110(d) of Part-26, have red letters at least 25 mm (1 inch) high on a white background at least 5 cm (2 inches) high. These signs may be internally electrically illuminated or self-illuminated by other than electrical means, with an initial brightness of at least 0.509 cd/m^2 (160 microlamberts). The colours may be reversed in the case of a sign that is self-illuminated by other than electrical means. On these aeroplanes, no sign continues to be used if its luminescence (brightness) decreases to below 0.318 cd/m^2 (100 microlamberts).
 - (2) General illumination in the passenger cabin is provided so that when measured along the centreline of the main passenger aisle(s), and cross aisle(s) between main aisles, at seat armrest height and at 102 cm (40-inch) intervals, the average illumination is not less than 0.54 lux (0.05 foot-candle) and the illumination at each 102 cm (40-inch) interval is not less than 0.11 lux (0.01 foot-candle). A main passenger aisle is considered to extend along the fuselage from the most forward passenger emergency exit or cabin occupant seat, whichever is farther forward, to the most rearward passenger emergency exit or cabin occupant seat, whichever is farther aft.
 - (3) The floor of the passageway leading to each floor-level passenger emergency exit, between the main aisles and exit openings, is provided with illumination that is not less than 0.22 lux (0.02 foot-candle) measured along a line that is within 15 cm (six inches) of and parallel to the floor and is centred on the passenger evacuation path.

- (e) Each sign required by point 26.120 of Part-26 may use a universal symbolic exit sign. The design of the signs is chosen to provide a consistent set throughout the cabin. (See GM1 26.110(d))

[Issue: 26/3]

CS 26.150 Compartment interiors

Compliance with point 26.150 of Part-26 is demonstrated by complying with CS 25.853 and Appendix F or equivalent, CS 25.853(e) or equivalent and CS 25.791 or equivalent or with the following:

For each compartment occupied by the crew or passengers the following apply:

- (a) Upon any major replacement of any individual group of components as specified in Appendix F, Part I, sub-paragraph (a)(1)(i), such as interior ceiling panels, wall panels, etc., this individual group of components complies with Appendix F, Part I, of this CS-26. (See GM1 26.150(a))
- (b) Seat cushions, except those on flight crew member seats, on large aeroplanes, type certificated after 1 January 1958, comply with the fire protection specifications of Appendix F, Part II.
- (c) (1) Heat release (other than for lavatory interiors or flight deck), for interior ceiling and wall panels (other than lighting lenses), partitions, and the outer surfaces of galleys, large cabinets and stowage compartments (other than underseat stowage compartments and compartments for stowing small items, such as magazines and maps), in large aeroplanes which had their initial Certificate of Airworthiness issued on or after 20 August 1988, but prior to 20 August 1990, and having a MOPSC of more than 19, comply with the heat release rate testing provisions of Appendix F Part IV, except that the total heat release over the first two minutes of sample exposure does not exceed 100 kilowatt-minutes per square metre, and the peak heat release rate does not exceed 100 kilowatts per square metre.
- (2) Heat release and smoke density (other than for lavatory interiors or flight deck) for interior ceiling and wall panels (other than lighting lenses), partitions, and the outer surfaces of galleys, large cabinets and stowage compartments (other than underseat stowage compartments and compartments for stowing small items, such as magazines and maps), in large aeroplanes, having a MOPSC of more than 19, which had their initial Certificate of Airworthiness issued on or after 20 August 1990, comply with the heat release and smoke density specifications of Appendix F Parts IV and V. (See GM1 26.150(c))
- (d) Large aeroplanes having a MOPSC of more than 19, Type Certificated after 1 January 1958 upon the first substantially complete replacement of the cabin interior components, (i.e. interior ceiling and wall panels (other than lighting lenses), partitions, and the outer surfaces of galleys, large cabinets and stowage compartments (other than underseat stowage compartments and compartments for stowing small items, such as magazines and maps)), comply with the heat release and smoke density specifications of Appendix F Parts IV and V. (See GM1 26.150(d))
- (e) Smoking prohibition is indicated by a placard so stating.
- (f) Each disposal receptacle for towels, paper or waste is fully enclosed and constructed of materials adequate in resistance to fire such that any fire likely to occur in it under normal use is contained. The ability of the disposal receptacle to contain those fires under all probable conditions of wear, misalignment, and ventilation expected in service is demonstrated by test unless appropriate maintenance tasks are put in place to ensure that excess wear or

misalignment are quickly repaired. A placard containing the legible words or symbology indicating 'No Cigarette Disposal' is located on or near each disposal receptacle door.

[Issue: 26/3]

GM1 26.150(a) Compartment interiors

'Major Replacement': More than 50% of any component types affected in the cabin are replaced. For example, 51% of the sidewall panels, or 51% of the ceiling panels.

GM1 26.150(c) Compartment interiors

Galley carts and containers are considered as 'open galley surfaces' and therefore are subject to the same requirements as galleys in this respect, namely CS 26.150(c). However, because of the rotatable nature of these components, and their limited lifespan, it is permissible to use galley carts and containers manufactured prior to 20/08/1990.

GM1 26.150(d) Compartment interiors

'Complete Replacement': All of the affected components in the cabin are replaced. Whether the other components that are not affected are replaced is not relevant.

- 1 The qualifying word 'substantially' may be used to avoid operators avoiding compliance by not replacing a minor, inconsequential cabin component and stating that there had not been a 'complete replacement'.
- 2 The definition does, therefore, permit individual replacement of cabin interior components without the mandatory replacement of all components at the same time. It should also be noted that removing components for refinishing and reinstalling them in the same aeroplane, or in a different aeroplane not subject to more stringent requirements, is considered 'refurbishment' and not 'replacement'.

CS 26.155 Flammability of cargo compartment liners

Compliance with point 26.155 of Part-26 is demonstrated by complying with CS 25.855 & Appendix F Part III, or equivalent or with the following:

- (a) Large aeroplanes, Type Certificated after 1 January 1958, with Class C or D compartment, greater than 5.66 m³ (200 cubic feet) have ceiling and sidewall liner panels which are constructed of:
 - (1) glass fibre reinforced resin, or
 - (2) materials which meet the flame penetration test specifications of Appendix F Part III, or other equivalent methods, or
 - (3) aluminium (only in the case of aluminium liner installations approved prior to 1 July 1989).
- (b) For compliance with this paragraph, the term 'liner' includes any design features, such as a joint or fastener which would affect the capability of the liner to safely contain a fire.

[Issue: 26/3]

CS 26.156 Thermal/acoustic insulation materials

- (a) Compliance with point 26.156(a) of Part-26 is demonstrated by complying with CS 25.856(a), or its equivalent.
- (b) Compliance with point 26.156(b) of Part-26 is demonstrated by complying with CS 25.856(a), or its equivalent.
- (c) Compliance with point 26.156(c) of Part-26 is demonstrated by complying with CS 25.856(b), or its equivalent.

[Issue: 26/3]

GM1 26.156(a) Insulation materials installed as replacement

The requirement of point 26.156(a) of Part-26 is applicable to insulation materials which are:

1. of a blanket construction, or
2. installed around air ducting

[Issue: 26/3]

CS 26.157 Conversion of Class D compartments

- (a) Compliance with point 26.157(a) of Part-26 is demonstrated by showing compliance with CS 25.857(c) and CS 25.858, or the equivalent.
- (b) Compliance with point 26.157(b) of Part-26 is demonstrated by showing compliance with:
 - (1) either CS 25.857(c) and CS 25.858, or the equivalent; or
 - (2) CS 25.857(e) and CS 25.858, or the equivalent.

[Issue: 26/3]

CS 26.160 Lavatory fire protection

Compliance with point 26.160 of Part-26 is demonstrated by complying with CS 25.854, or equivalent or with the following:

- (a) Each lavatory is equipped with a smoke detector system or equivalent that provides a warning light in the cockpit, or provides a warning light or audible warning in the passenger cabin that would be readily detected by a cabin crew member; and
- (b) Each lavatory is equipped with a built-in fire extinguisher for each disposal receptacle for towels, paper, or waste, located within the lavatory. The extinguisher is designed to discharge automatically into each disposal receptacle upon occurrence of a fire in that receptacle.

[Issue: 26/3]

CS 26.170 Fire extinguishers

Compliance with point 26.170 of Part-26 is demonstrated by complying with the following (see also GM1 26.170(b)):

- (a) the extinguishing agent that is used in a built-in fire extinguisher for a lavatory waste receptacle or in a portable fire extinguisher for cabins and crew compartments must not be one of the agents that are listed in Annex A — Group II: Halons (halon 1211, halon 1301, and halon 2402) of 'The Montreal Protocol on Substances that Deplete the Ozone Layer', 8th Edition, 2009;
- (b) the agent in any fire extinguisher must be acceptable, and be of a kind and in a quantity that is appropriate for the kinds of fire that are likely to occur in the compartment where the extinguisher is intended to be used;
- (c) any agent that is used in a personnel compartment or that is likely to enter a personnel compartment must be selected to minimise the hazard of a toxic gas concentration; and
- (d) a discharge of the extinguisher must not cause any structural damage.

[Issue: 26/3]

GM1 26.170(b) Fire extinguishers

1 LAVATORY FIRE EXTINGUISHERS

Appendix D to Report DOT/FAA/AR-96/122 'Development of a Minimum Performance Standard for Lavatory Trash Receptacle Automatic Fire Extinguishers' of February 1997 may be used for showing compliance with CS 26.170(b).

General guidance on the alternative extinguishing agents that are considered to be acceptable can be found in AMC 25.851(c).

2 HANDHELD FIRE EXTINGUISHERS

Society of Automotive Engineers (SAE) Aerospace Standard (AS) 6271 'Halocarbon Clean Agent Hand-Held Fire Extinguisher' or European Technical Standard Order (ETSO) 2C515 'Aircraft Halocarbon Clean Agent — Handheld Fire Extinguisher' may be used for showing compliance with CS 26.170(b).

General guidance on the alternative extinguishing agents that are considered to be acceptable can be found in AMC 25.851(c).

[Issue: 26/2]

CS 26.200 Landing gear aural warning

Compliance with point 26.200 of Part-26 is demonstrated by complying with CS 25.729, or equivalent or with the following:

- (a) Large aeroplanes have a landing gear aural warning device that functions continuously under the following conditions:
 - (1) For aeroplanes with an established approach flap position, whenever the flaps are extended beyond the maximum certificated approach climb configuration position in the Aeroplane Flight Manual and the landing gear is not fully extended and locked.

- (2) For aeroplanes without an established approach climb flap position, whenever the flaps are extended beyond the position at which landing gear extension is normally performed and the landing gear is not fully extended and locked.
- (b) The warning system of sub-paragraph (a) of this paragraph:
- (1) does not have a manual shut-off means readily available to the flight crew such that it could be operated instinctively, inadvertently or by habitual reflexive action;
 - (2) is, in addition to the throttle-actuated device, installed under the airworthiness type certification specifications; and
 - (3) may utilise any part of the throttle-actuated system, including the aural warning device.
- (c) The flap position sensing unit may be installed at any suitable place in the aeroplane.

[Issue: 26/3]

CS 26.201 Tyre inflation pressure

Compliance with point 26.201 of Part-26 is demonstrated by complying with CS 25.733(f) of CS-25 or its equivalent, or with the following:

- (a) 'Minimum serviceable inflation pressure' means a tyre inflation pressure specified by the aeroplane type certificate holder below which damage to the tyre, potentially leading to a tyre failure, may occur.
- (b) The operator ensures that one, or a combination, of the following means is (are) used:
- (1) A task is incorporated in the aeroplane maintenance programme (AMP) that requires tyres inflation pressure checks to be performed at a suitable time interval.
 - (2) The aeroplane is equipped with an installed system that monitors the tyres inflation pressures and that:
 - (i) provides an alert to the flight crew whenever a tyre inflation pressure is below the minimum serviceable inflation pressure, or
 - (ii) allows the tyres inflation pressures to be checked prior to the dispatch of the aeroplane, and a tyre inflation pressure check task is included in the pre-flight procedures of the operations manual.
- (c) Tyre inflation pressure checks in the AMP

A 'suitable time interval' is the maximum time interval between two consecutive tyre inflation pressure checks.

These pressure checks are conducted daily in order to ensure that the elapsed clock time between two consecutive tyre inflation pressure checks does not exceed 48 hours.

Time intervals longer than 48 hours may be used if they are substantiated and agreed by the competent authority. This substantiation includes at least an analysis of the expected loss of tyre pressure during operation, taking into account environmental and operational factors, including the potential for pressure loss at a rate that exceeds the normal diffusion resulting from damage to or degradation of the tyre/wheel assembly. If available, statistical data related to pressure losses gathered from the service experience of aeroplanes equipped with equivalent wheel designs may also be used. The substantiation is made in cooperation with the

tyre manufacturer(s). In addition, the operator may take credit from an installed system monitoring the tyre inflation pressures.

The time interval does not exceed the applicable value provided by the type certificate holder in the instructions for continued airworthiness.

(d) Tyre pressure monitoring system

If a tyre pressure monitoring system is installed, its development assurance level is commensurate with the potential consequences of an alert not being provided, as well as with the consequences of false alerts. If the system includes the indication of tyre pressure levels, the consequences of a false indication are also taken into account. The assessment of these consequences includes the effects of the failure of one or more tyres (including simultaneous tyre failures) that may be caused by the operation of the aeroplane with under-inflated tyres.

Tasks are included as necessary in the AMP (taking into account the instructions for continued airworthiness provided by the design approval holder) to ensure that the calibration of the tyre pressure monitoring system is maintained.

[Issue: 26/4]

CS 26.205 Runway overrun awareness and alerting systems

Compliance with point 26.205 of Part-26 is demonstrated by showing compliance with CS 25.705, or with the following:

- (a) During approach (from a given height above the selected runway) and landing, the runway overrun awareness and alerting system (ROAAS) shall perform real-time energy-based calculations of the predicted landing stopping point, compare that point with the location of the end of the runway, and provide the flight crew with:
- (1) in-flight, timely, and unambiguous predictive alert(s) of a runway overrun risk; and
 - (2) on-ground, timely, and unambiguous predictive alert(s) of a runway overrun risk. At the option of the applicant, the ROAAS may also provide an automated means of deceleration control that prevents or minimises runway overruns during landing.
- (b) The ROAAS must at least accommodate dry and wet runway conditions for normal landing configurations.

[Issue: 26/3]

GM1 26.205 Runway overrun awareness and alerting systems

- (a) When demonstrating compliance with CS 26.205, the applicant should take account of EUROCAE Document ED-250 'Minimum Operational Performance Standard for a Runway Overrun Awareness and Alerting System' dated December 2017.
- (b) When demonstrating the compliance of the ROAAS with CS 25.1581 and CS 25.1585 or equivalent specifications, the applicant should include in the aeroplane flight manual the following elements:
- (1) A description of the runway overrun awareness and alerting system (ROAAS) operational domain, including all the conditions in which the ROAAS is expected to perform its intended function,

- (2) Any operational limitations applicable to the ROAAS, and
- (3) Operational procedures to be used by the flight crew when ROAAS alerts are triggered.

[Issue: 26/3]

CS 26.300(c), 26.330(c) and (d) Substantiation of change and repair status

Compliance with points 26.300(c), 26.330(c) and 26.330(d) of Part-26 is demonstrated by complying with points (a) or (b) of this CS:

- (a) The change or repair is only applicable to an aeroplane that is demonstrated to be excluded from the ageing aeroplane requirements for damage tolerance in accordance with points 26.300(b) or 26.330(b) of Part-26.
- (b) Evidence is provided showing that the change or repair is only incorporated into aeroplanes not in operation after:
 - (1) 26 February 2022 for demonstration of compliance with point 26.300(c) of Part-26; or
 - (2) 26 August 2022 for demonstration of compliance with point 26.330(c) of Part-26,and it is demonstrated that such change or repair will not be incorporated into any other aeroplanes.

[Issue: 26/3]

GM1 26.300(b) and 26.330(b) Guidance on applicability

Any product for which the TC has been surrendered is not subject to points 26.300 to 26.334 of Part-26.

For aeroplane models with an EASA TC, the wording 'not operated any more' means that no aeroplanes of that model are operated anywhere in the world after 26 February 2021.

The following non-exhaustive list provides examples of how to demonstrate that an aeroplane model is not operated any more:

- Provide evidence that all the examples of that aeroplane model have been scrapped;
- Provide evidence that all the remaining examples of that aeroplane model are no longer in airworthy condition and are not expected to return to service in the future (e.g. permanent storage for the purpose of being transferred to a museum or scrapped).

[Issue: 26/3]

GM1 26.300(c) and 26.330(c) Substantiation of change and repair status

The demonstration that a change or repair will not be incorporated into any other aeroplane can be achieved by:

- (a) providing evidence that there are no available kits for such changes or repairs; or

- (b) providing evidence that if kits are available, they will not be sold; or
- (c) ensuring that no future production of such change/repair kits is permitted; or
- (d) limiting the applicability of the changes and repairs subject to point 26.300(c) of Part-26 by updating the associated instructions for continued airworthiness.

[Issue: 26/3]

CS 26.301 Compliance plan for (R)TC holders and applicants

Compliance with point 26.301 of Part-26 is demonstrated when a compliance plan exists that includes the following:

- (a) a project schedule identifying all the major milestones for meeting the compliance dates as specified in points 26.302 to 26.309 of Part-26, as applicable;
- (b) a proposed means of compliance with the applicable requirements as specified in points 26.302 to 26.309 of Part-26, including as appropriate, methods and procedures for:
 - (1) performing the damage tolerance evaluation (DTE) of baseline structure, modified structure and published repairs;
 - (2) identifying the aeroplane structural configuration to be evaluated;
 - (3) identifying widespread fatigue damage (WFD)-susceptible structure;
 - (4) identifying the source of engineering data that will be used to perform the required evaluations;
 - (5) performing the WFD evaluation of structure;
 - (6) establishing a limit of validity (LOV) and plans for distribution upon approval (including incorporation of the LOV into the (airworthiness limitation section) ALS);
 - (7) identifying and developing the maintenance actions required to support the LOV;
 - (8) developing a baseline corrosion prevention and control programme (CPCP);
 - (9) establishing a process to ensure the continuing structural integrity programme remains valid;
 - (10) establishing the list of fatigue-critical baseline structures (FCBSs);
 - (11) developing the repair evaluation guidelines (REGs);
- (c) a plan for submitting a draft of all the required compliance items for review by EASA not less than 60 days before the applicable compliance date.

[Issue: 26/3]

CS 26.302 Fatigue and damage tolerance evaluation

Compliance with point 26.302 of Part-26 is demonstrated by complying with CS 25.571 Amendment 19, or subsequent amendment, or with points (a) or (b) of this CS:

- (a) For aeroplane structures certified on the basis of JAR 25.571 Change 6 or 14 CFR §25.571 Amendment 44 or equivalent, or earlier amendments, a fatigue and damage tolerance evaluation according to JAR 25.571 Change 7 or 14 CFR §25.571 Amendment 45 or equivalent,

or later amendment, exists, except that residual strength loads may be based upon the fail-safe load cases of the original certification basis. In addition, the inspection and other procedures resulting from this evaluation:

- (1) are contained in an existing ALS; or
- (2) are contained in a supplemental structural inspection document (SSID) mandated by an airworthiness directive (AD).

In both cases, the documentation includes the time in flight cycles, flight hours or another relevant measure by which the actions within the ALS/SSID are implemented.

- (b) For aeroplane structures certified on the basis of JAR 25.571 Change 7 or 14 CFR §25.571 Amendment 45 or equivalent, or later amendments: the inspections or other procedures resulting from the DTE required by that certification basis are included in the ALS.

[Issue: 26/3]

CS 26.303(a) and (c) Limit of validity

Compliance with points 26.303(a) and (c) of Part-26 is demonstrated by complying with CS 25.571 Amendment 19, or subsequent amendment, or with the following:

- (a) The evaluation supporting the LOV required by point 26.303 of Part-26 includes a substantiation that WFD will not occur in the aeroplane structure. An ALS exists and includes the LOV of each aeroplane structural configuration required by point 26.303 of Part-26 and each LOV is supported by sufficient test evidence, analysis and, if available, service experience and teardown inspection results of high-time aeroplanes of similar structural design, accounting for differences in operating conditions and procedures. Where the certification basis of the aeroplane includes mixed requirements with respect to the CS/CFR Part 25/JAR 25.571 amendment status, the earliest amendment is used to define the compliance times.
- (b) A list is established of all the maintenance actions upon which the LOV is dependent. The list identifies existing mandated actions, existing actions that have not been mandated at the date of entry into force of the rule and any new maintenance actions required. A schedule for the development and submission of the maintenance actions to EASA is agreed by EASA prior to the approval of the LOV. For compliance times, refer to points 26.303(b) or 26.303(d) and 26.303(e) of Part-26, as applicable. The new maintenance actions are established, and, together with the existing non-mandated actions, are submitted to EASA for approval according to the schedule agreed by EASA.
- (c) Additional means of compliance are provided by Paragraph 8 of and Appendix 2 to AMC 20-20A.

[Issue: 26/3]

GM1 26.303(a) Derogation from point (a)(ii)

Compliance with point 26.303(a)(ii) of Part-26 is not required if the holder of the (R)TC demonstrates that the aeroplane models affected by the service information for a maintenance action will not be operated any more after the scheduled point of submittal for the service information of that maintenance action.

The wording ‘not operated any more’ means that no aeroplanes of that model are operated anywhere in the world after the scheduled point of submittal of the service information.

The following non-exhaustive list provides examples of how to demonstrate that an aeroplane model is not operated any more:

- Provide evidence that all the examples of that aeroplane model have been scrapped;
- Provide evidence that all the remaining examples of that aeroplane model are no longer in airworthy condition and are not expected to return into service in the future (e.g. permanent storage for the purpose of being transferred to a museum or scrapped).

[Issue: 26/3]

CS 26.304(a) CPCP

Compliance with point 26.304 of Part-26 is demonstrated by complying with CS 25.571 Amendment 19 or subsequent amendment, or with points (a) or (b) of this CS:

- (a) A baseline CPCP is established according to AMC 20-20A Paragraph 9 or equivalent means, it includes a statement that requires the operator to control corrosion to Level 1 or better, and is submitted to EASA for approval.
- (b) A baseline CPCP already exists for the type that is either approved by EASA through the maintenance review board (MRB) and industry steering committee (ISC) using existing procedures for EASA maintenance review board report (MRBR) approval or through an existing EASA AD.

[Issue: 26/3]

CS 26.305(a) and (c) Validity of the continuing structural integrity programme

Compliance with points 26.305(a) and 26.305(c) of Part-26 is demonstrated by complying with the following:

- (a) Except as provided in point (h) of this CS, a process exists, and a report is submitted to EASA that describes the process and how it is implemented;
- (b) The process is either continuous with each service finding, or is a regular review following several findings, or a combination of both;
- (c) The process includes a plan to audit and report to EASA the effectiveness of the continuing structural integrity programme, including the continuing validity of the assumptions upon which it is based, prior to reaching any significant point in the life of the aeroplane;
- (d) The process includes criteria for summarising findings of fatigue, environmental or accidental damage and their causes, and recording them in a way that allows any potential interaction to be evaluated;
- (e) The process includes criteria to assess and record the relevance of each potential contributing factor to the finding, including operational usage, fatigue load spectra, environmental conditions, material properties, manufacturing processes and the fatigue and damage tolerance analytical methods of analysis and their implementation;

- (f) The process includes criteria for establishing and revising sampling programmes to supplement the inspections and other procedures established in compliance with the applicable fatigue and damage tolerance requirements; and
- (g) The process includes criteria for establishing when structures should be modified, or the inspection programme revised, in the light of in-service damage findings;
- (h) Sunset criteria: The extent to which the above elements of the process require definition may be tailored to the size of the fleet and its expected useful remaining life.
- (i) Additional means of compliance may be found in Paragraph 5 of and Appendix 5 to AMC 20-20A.

[Issue: 26/3]

CS 26.306(a) and (d) Fatigue-critical baseline structure

Compliance with points 26.306(a) and 26.306(d) of Part-26 is demonstrated when a list of the FCBSs exists that has been identified in compliance with AMC 25.571 Appendix 5 or AMC 20-20A Appendix 3 paragraph 3.3, and which clearly describes the location and the extent of the FCBSs.

[Issue: 26/3]

CS 26.307(a)(i),(ii) and (b) List of fatigue-critical modified structure

Compliance with points 26.307(a)(i) and (ii) and 26.307(b) of Part-26 is demonstrated when a list of the fatigue-critical modified structures (FCMSs) exists that has been identified in compliance with AMC 20-20A Appendix 3 paragraph 4, and which clearly describes the location and the extent of the FCMS.

[Issue: 26/3]

CS 26.307(a)(iii) and (c) Damage tolerance data for existing changes to the FCS

Compliance with the fatigue and damage tolerance evaluation required by point 26.307 (a)(iii) and (c) of Part-26 is demonstrated by complying with CS 25.571 Amendment 19 or subsequent amendment, or with the following:

- (a) The fatigue and damage tolerance evaluation is in accordance with the damage tolerance requirements of the applicable certification basis, except as provided in point (b) of this CS.
- (b) For aeroplanes certified on the basis of JAR-25 Change 6 or 14 CFR §25.571 Amendment 44 or equivalent, or earlier amendments, the fatigue and damage tolerance evaluation of the change is in accordance with JAR-25 Change 7 or 14 CFR §25.571 Amendment 45, or equivalent, or later amendments, except that residual strength loads may be based upon the fail-safe load cases of the original certification basis.

[Issue: 26/3]

CS 26.308 Damage tolerance data for existing published repairs to fatigue-critical structure

Compliance with point 26.308(a) of Part-26 is demonstrated when damage tolerance data is developed in accordance with AMC 20-20A Paragraph 7 and Appendix 3 for each existing published repair to the fatigue-critical structure (FCS) identified in accordance with points 26.306 and 26.307 of Part-26.

[Issue: 26/3]

CS 26.309 Repair evaluation guidelines

Compliance with point 26.309 of Part-26 is demonstrated when REGs are developed in accordance with AMC 20-20A Paragraph 7 and Appendix 3 for existing reinforcing repairs affecting the FCS identified in accordance with points 26.306 and 26.307 of Part-26.

[Issue: 26/3]

CS 26.331 Compliance plan for STC holders

Compliance with point 26.331 of Part-26 is demonstrated when a compliance plan exists that includes:

- (a) a project schedule identifying all the major milestones for meeting the compliance times specified in points 26.332 to 26.334 of Part-26;
- (b) an explanation of how the changes that affect the FCS will be identified and presented;
- (c) a proposed means of compliance with the DTE required by points 26.333 and 26.334 of Part-26;
- (d) a plan for submitting drafts of all the compliance items required by point 26.330 of Part-26 for review by EASA not less than 60 days before the applicable compliance date.

[Issue: 26/3]

CS 26.332 Identification of changes affecting fatigue-critical structure

- (a) Compliance with points 26.332(a)(i) and 26.332(b) or 26.332(c)(i) of Part-26 is demonstrated when the changes affecting the FCBS are identified in compliance with AMC 20-20A Appendix 3 paragraph 4, and the list of changes has been submitted to EASA for approval.
- (b) Compliance with points 26.332(a)(ii) and 26.332(b) or 26.332(c)(ii) of Part-26 is demonstrated when any associated FCMS has been identified in compliance with AMC 20-20A Appendix 3 paragraph 4, and the list of the FCMSs clearly describing the location and the extent of the FCMSs has been submitted to EASA for approval.

[Issue: 26/3]

GM1 26.332(a)(iii) Identification of published repairs to changes affecting fatigue-critical structure

There is no requirement to list the published repairs to changes; however, the change approval holder will need to have identified these repairs in order to subsequently comply with points 26.333(a)(i) and 26.334(a)(i) of Part-26.

‘Published repairs’ are described in AMC 20-20A, Appendix 3, paragraph 4.3.3.

[Issue: 26/3]

GM1 26.332(c)(ii) and 26.334 FCMS and DTE for STCs and other changes approved prior to 1 September 2003

The design approval holder should normally receive a request from an operator for FCMS lists and a DTI within 13 months of the date of applicability of the Regulation following the operator’s review of records to identify modifications affecting the FCBS, (see CS 26.370(b)(ii)). The request should result in the design approval holder listing the FCMSs, performing a DTE and making the approved FCMS list and a DTI available to the operator.

Design approval holders are recommended to initiate DTE of STCs and other changes as soon as possible if it is considered likely that operators will make a request.

When a request is received, the date of its receipt should be recorded, and a record kept of the subsequent communications with the operator, the agreements reached, and actions taken. An example of such records would be a copy of the contract to perform the DTE.

If no request for a DTI is made by an operator prior to 26 February 2023, the design approval holder may assume that their support is not required by any operator to develop a DTI because the aeroplane is not currently in operation according to Regulation (EU) No 965/2012 Annex IV (Part-CAT).

In this case, it is not necessary for the design approval holder to develop an FCMS list or DT data until such a request is received from an operator; for example, when an aeroplane is incorporated into their fleet.

Note: It might also be possible that an operator operating under Regulation (EU) No 965/2012 Annex IV (Part-CAT) has engaged the support of a third party to develop the DTI, but there is no obligation on the design approval holder to verify whether this is the case. If a design approval holder is in a situation where the need to comply with point 26.334 of Part-26 is not clear, this should be highlighted to EASA in the frame of the discussion of the compliance plan required in point 26.331 of Part-26 in order to find a way forward.

[Issue: 26/3]

CS 26.333 and 26.334 Damage tolerance data for STCs, other changes and repairs to those STCs and changes

Compliance with the fatigue and damage tolerance evaluation required by points 26.333(a)(i) or 26.334(a)(i) of Part-26 is demonstrated by complying with CS 25.571 Amendment 19, or subsequent amendment, or with the following:

- (a) The fatigue and damage tolerance evaluation is accomplished in accordance with the damage tolerance requirements of the applicable certification basis or a later amendment, except as provided in point (b) of this CS.
- (b) For aeroplanes certified on the basis of JAR-25 Change 6 or 14 CFR §25.571 Amendment 44 or equivalent, or an earlier amendment, the fatigue and damage tolerance evaluation of the change or repair is accomplished in accordance with JAR-25 Change 7 or 14 CFR §25.571 Amendment 45, or equivalent, or later amendments, except that residual strength loads may be based upon the fail-safe load cases of the original certification basis.

[Issue: 26/3]

CS 26.370 Continuing airworthiness tasks and aircraft maintenance programme — Operators and organisations responsible for maintenance programmes for large aeroplanes under Part-M

- (a) Compliance with point 26.370(a)(i) of Part-26 is demonstrated by incorporating into the aircraft maintenance programme (AMP) the approved damage-tolerance-based inspection programme developed by the design approval holders in accordance with CS 26.302.
- (b) Compliance with point 26.370(a)(ii) of Part-26 is demonstrated by complying with point (i) of this CS or by ensuring that the adverse effects that repairs and modifications may have on FCS are addressed by:
 - (1) incorporating into the AMP all available approved DTIs for modifications by 26 February 2024 following compliance with points (c) to (e) of this CS;
 - (2) complying with point (f) of this CS;
 - (3) incorporating in the AMP the approved DTIs for all other repairs and modifications in accordance with the schedule adopted in a plan to be included, or referred to, in the AMP by 26 February 2024 in compliance with points (g) and (h) of this CS.
- (c) Review of aeroplane records and initial request for data
 - (1) A candidate list of the major modifications in the aeroplane that affect or include FCS has been identified by means of a review of records, and listed in a report prepared by the continuing airworthiness maintenance organisation by 26 February 2022.
 - (2) Requests for FCMS lists and DTIs for modifications identified in point (c)(1) above as supplemental type certificates (STCs) and other changes, approved prior to 1 September 2003, are submitted to the design approval holder by 26 March 2022, or an alternative source of approved DTIs is identified.
 - (3) A final list of the major modifications in the aeroplane that affect or include FCS, taking into account the candidate list in point (c)(1) above, the available design approval holder lists of changes that affect the FCBS and the continuing airworthiness management organisation's own evaluation, is included in a report prepared by the continued airworthiness management organisation. The report should be completed by 26 August 2022 or before operating the aeroplane in accordance with Part-CAT, whichever occurs later.
- (d) Operator or owner review of design approval holder compliance data

A review has been conducted by the continuing airworthiness management organisation of the applicable documents supplied by type certificate (TC) holders and STC holders in compliance with points 26.302, 26.306 to 26.309 and 26.332 to 26.334 of Part-26, which supports the identification of the available FCS and DTIs relevant to each aeroplane.

- (e) DTIs that should be incorporated into the AMP before 26 February 2024.

For modifications with an approved DTI that is available and compliant with points 26.307 or 26.333 of Part 26, all the applicable DTIs should be incorporated into the AMP by 26 February 2024 or before operating the aeroplane in accordance with Part-CAT, whichever occurs later.

- (f) Modifications incorporated in an aeroplane imported to the EU after 26 February 2021

For all major modifications affecting FCS incorporated in an aeroplane that is imported to the EU after 26 February 2021, the applicable approved DTI should be obtained and incorporated into the AMP by 26 February 2024 or before operating the aeroplane in accordance with Part-CAT, whichever occurs later.

- (g) Means to address the adverse effect of repairs and modifications that have not had DTIs incorporated into the AMP according to points (e) and (f) of this CS

(1) A plan has been established by the continuing airworthiness management organisation to obtain and implement all the applicable DT data for existing major modifications and reinforcing repairs affecting the FCS.

(2) The plan has been incorporated, in full or by reference, into the AMP for approval in accordance with point M.A.302 of Annex I (Part-M) to Regulation (EU) No 1321/2014.

(3) For each modification identified in the list contained in the report of point (c)(3) above and that is subject to this point, the plan shows that:

(i) requests for DT data have been made to the DAH that has to comply with point 26.334 of Part-26, and an agreement for obtaining approved DTIs is reached, or

(ii) an agreement is established with a third party to provide approved DTIs,

in order to support a schedule for incorporation of the DTIs into the AMP in accordance with point (h).

(4) In case a modification is identified after establishing the list of modifications according to point (c)(3) above, e.g. during an aeroplane survey, add that modification to the list.

(5) The plan ensures that reinforcing repairs to the FCS will be identified and assessed for DT by specifying processes for:

(i) conducting surveys and records reviews of the affected aeroplanes as necessary to ensure the identification and documentation of all the existing reinforcing repairs that affect the FCS; and

(ii) obtaining DT data for reinforcing repairs identified in point (g)(5)(i) above.

The plan does not need to include an aeroplane survey when the aeroplane certification basis for the complete structure of the aeroplane is CS 25.571. Reinforcing repairs are described in point 3.13.3 of Appendix 3 to AMC 20-20A.

(6) This plan also includes schedules for:

(i) conducting aeroplane surveys, obtaining DT data for repairs and incorporating all approved DTIs into the AMP considering the applicable REGs. Additional means of compliance may be found in Appendix 3 to AMC 20-20A;

- (ii) obtaining DT data for all major modifications identified either in the plan or added to the list of modifications according to point (g)(4) above, and incorporating the applicable approved DTIs in the AMP in accordance with point (h) below.
- (h) Schedule for obtaining DT data for certain modifications
- For major modifications subject to point (g), a schedule is established for obtaining DT data such that:
- (1) for major modifications identified in the plan in accordance with point (g)(3), all applicable approved DTIs will be incorporated into the AMP before 26 February 2026; and
 - (2) for major modifications identified according to point (g)(4), the applicable approved DTIs will be incorporated into the AMP by 26 February 2026 or within 12 months of the identification of that modification, or before operating the aircraft in accordance with Part-CAT, whichever occurs later.
- (i) As an alternative to compliance with points (c) to (h) above, compliance with point 26.370(a)(ii) of Part-26 is demonstrated when a process exists and has been implemented to ensure that approved DTIs for all repairs and modifications affecting the FCS of an aeroplane have been incorporated into the AMP since the aeroplane first entered service.
- (j) Compliance with point 26.370(a)(iii) of Part-26 is demonstrated by incorporating into the maintenance programme the most restrictive applicable limitation of points (1), (2) or (3) below, in flight cycles or flight hours or both, as appropriate:
- (1) An EASA-approved LOV in accordance with Part-26, or
 - (2) An EASA-approved limitation on the applicability of the ALS of the instructions for continued airworthiness at the aeroplane level, in accordance with JAR/CS 25.571 and 25.1529 (or equivalent), or
 - (3) For aeroplanes listed in Table 1 below, the limitation in Table 1, unless EASA has approved different limitations in accordance with (1) or (2).

Type/Model	FC/FH
Boeing 707 (-300 Series and -400 Series)	20 000 FC
Boeing 720	30 000 FC
DC 8	50 000 FC/50 000 FH
DC-9	100 000 FC/100 000 FH
DC-10-10, -15	42 000 FC/60 000 FH
DC-10-30, -40, -10F, -30F, -40F	30 000 FC/60 000 FH
MD-10-10F	42 000 FC/60 000 FH
MD-10-30F	30,000 FC/60,000 FH
MD-90	60 000 FC/90 000 FH
Lockheed Electra L-188	26 600 FC
Lockheed Hercules 382 Series Hercules Models 382, 382B, 382E, 382F, and 382G	20 000 FC/50 000 FH

Lockheed Tristar L-1011-385-1, L-1011-385-1-14, L-1011-385-1-15, and L-1011-385-3.	36 000 FC
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Table 1

- (k) Compliance with point 26.370(a)(iv) of Part-26 is demonstrated by incorporating a CPCP into the maintenance programme, and where a TC holder baseline CPCP produced in accordance with point 26.304 of Part-26 exists, it is taken into account in the development of the operator's CPCP.

[Issue: 26/3]

GM1 26.370(a)(ii) Means to address the adverse effects of repairs and modifications

Unless an operator or owner complies with CS 26.370(i) and in order to comply in a timely manner with point 26.370(a)(ii) of Part-26, it is necessary to accomplish specific actions beforehand, to identify changes affecting the FCS, request the DT data, and review the design approval holder documentation, in accordance with CS 26.370 (c) and (d).

DTIs that should be available and incorporated into the AMP before 26 February 2024 are those DTIs that have been developed by the TC holder and STC holders in compliance with points 26.302, 26.307 and 26.333 of Part-26. The timescales for those requirements should mean that the DT data is submitted to EASA for approval by 26 February 2023, and following approval, the design approval holder has to make the DTIs available to operators, allowing them to incorporate the data prior to 26 February 2024. The operator will need to identify and contact the design approval holder for the applicable modification and request DT data for the modification. If the design approval holder for a modification installed on an operator's aeroplane no longer exists or does not make the DTI available for some reason that is out of the operator's control, the DTI may be obtained and incorporated according to the schedules outlined in CS 26.370(h). In these cases, the plan used in accordance with CS 26.370(g) should show the course of action for that modification, including the agreements by which the DTIs will be obtained.

For modifications approved after 1 September 2003, if the operator decides not to obtain the DTI that is available from the design approval holder of the modification and elects to contract a third party, the timescale of CS 26.370(e) for the incorporation of the approved DTI into the AMP remains unchanged.

For the DTIs of modifications where the TC holder is not the approval holder and the approval was issued prior to 1 September 2003, the operator will have to make a request for that data to the approval holder, who would then have to comply with point 26.334 of Part-26 and make the DTIs available, or the operator may arrange with a third party to perform the DTE and provide approved DTIs. The DT data should be obtained, and the DTIs incorporated into the AMP according to the schedules outlined in CS 26.370(h), and this should be part of the plan used in accordance with CS 26.370(g).

When a request for DT data is made to the design approval holder that has to comply with point 26.334 of Part-26, it should be in written form, the date of the request should be recorded, and a record kept of the subsequent communications with the DAH, the agreements reached and the actions taken. An example of such records would be a copy of the contract to provide the DT data.

For each modification identified in the review of records as per CS 26.370(c), when the DTI for a modification is not already incorporated into the AMP, the operator should ensure that it will be obtained. This means that the design approval holders of all modifications for which the operator has identified a potential need for DTIs should be approached in a timely manner.

For repairs, acceptable procedures for conducting aeroplane surveys, and schedules for obtaining, incorporating and implementing DTIs may be found in the applicable REGs made available by the TC holder as required by point 26.309 of Part-26 and described in Appendix 3 to AMC 20-20A.

[Issue: 26/3]

SUBPART C — HELICOPTERS

CS 26.400 Fire extinguishers

Compliance with point 26.400 of Part-26 is demonstrated by complying with the following (see also GM1 26.400(b)):

- (a) the extinguishing agent that is used in a built-in fire extinguisher for a lavatory waste receptacle or in a portable fire extinguisher for cabins and crew compartments must not be one of the agents that are listed in Annex A — Group II: Halons (halon 1211, halon 1301, and halon 2402) of 'The Montreal Protocol on Substances that Deplete the Ozone Layer', 8th Edition, 2009;
- (b) the agent in any fire extinguisher must be acceptable, and be of a kind and in a quantity that is appropriate for the kinds of fire that are likely to occur where the extinguisher is intended to be used;
- (c) any agent that is used in a personnel compartment or that is likely to enter a personnel compartment must be designed to minimise the hazard of a toxic gas concentration; and
- (d) a discharge of the extinguisher must not cause any structural damage.

[Issue: 26/3]

GM1 26.400(b) Fire extinguishers

1. LAVATORY FIRE EXTINGUISHERS

Appendix D to Report DOT/FAA/AR-96/122 'Development of a Minimum Performance Standard for Lavatory Trash Receptacle Automatic Fire Extinguishers' of February 1997 may be used for showing compliance with CS 26.400(b).

General guidance on the alternative extinguishing agents that are considered to be acceptable can be found in AMC 29.1197.

2. HANDHELD FIRE EXTINGUISHERS

Society of Automotive Engineers (SAE) Aerospace Standard (AS) 6271 'Halocarbon Clean Agent Hand Held Fire Extinguisher' or European Technical Standard Order (ETSO) 2C515 'Aircraft Halocarbon Clean Agent — Handheld Fire Extinguisher' may be used for showing compliance with CS 26.400(b).

General guidance on the alternative extinguishing agents that are considered to be acceptable can be found in AMC 29.1197.

[Issue: 26/3]

CS 26.410 Emergency controls operated underwater

Compliance with point 26.410 of Part-26 is demonstrated by complying with CS 27.1555(d)(2) of CS 27 at Amendment 5 or later, or the equivalent, or CS 29.1555(d)(2) of CS-29 at Amendment 5 or later, or the equivalent respectively.

[Issue: 26/4]

CS 26.415 Underwater emergency exits

- (a) Compliance with point 26.415(a)(1) of Part-26 is demonstrated by complying with CS 27.805(c) and CS 27.807(d)(5) of CS-27 at Amendment 5 or later, or the equivalent, or CS 29.811(h)(2) of CS-29 at Amendment 5 or later, or the equivalent respectively.

Each operational device (pull tab(s), operating handle, 'push here' decal, etc.) of underwater emergency exits provided for flight crew or passengers must be marked with black and yellow stripes. Any other operating feature, e.g. highlighted 'push here' decal(s) for openable windows, must also incorporate black-and-yellow-striped markings.

In order to provide a conspicuous means of identifying the operating device or feature, at least two bands of each colour of approximately equal widths are used.

- (b)
- (1) Compliance with points 26.415(a)(2) and (3) of Part-26 is demonstrated by complying with CS 27.807(d)(1) of CS-27 at Amendment 5 or later, or the equivalent, or CS 29.807(d)(1) of CS-29 at Amendment 5 or later, or the equivalent respectively.
- (2) If the dimensions of the underwater emergency exits are smaller than those stipulated in CS 27.807(d)(1) of CS-27 at Amendment 5 or later, or the equivalent, or CS 29.807(d)(1) of CS-29 at Amendment 5 or later as appropriate, then the applicant must ensure that the exit can facilitate the rapid escape from the helicopter by passengers (of the maximum shoulder size that are permitted to be seated in that location) in the event of a ditching or capsize. This can be demonstrated through test or analysis.

NOTE: The following dimensions and passenger size restrictions may be defined without the need for demonstration:

- (i) For the egress of passengers with shoulder width of 559 mm (22 inches) or smaller:
- (A) a rectangular opening no smaller than 356 mm (14 inches) wide, with a diagonal between corner radii no smaller than 559 mm (22 in);
- (B) a non-rectangular or partially obstructed opening (e.g. by a seat back) that is capable of admitting an ellipse of 559 mm x 356 mm (22 inches x 14 inches).
- (ii) For the egress of passengers with shoulder width greater than 559 mm (22 inches), openings that are no smaller than 480 mm x 660 mm (19 inches x 26 inches) or that are capable of admitting an ellipse of 480 mm x 660 mm (19 inches x 26 inches).
- (c) Compliance with point 26.415(b)(1) of Part-26 is demonstrated by complying with CS 27.805(c) of CS-27 at Amendment 5 or later, or the equivalent, CS 29.805(c) of CS-29 at Amendment 5 or later, or the equivalent respectively, and with CS 27.807(b)(2) and (d) of CS-27 at Amendment 5 or later, or the equivalent, CS 29.807(d) of CS-29 at Amendment 5 or later respectively, CS 29.809(c) of CS-29 at Amendment 5 or later, or the equivalent respectively, or with the following:

Underwater emergency exits for flight crew and passengers must be proven by test, demonstration or analysis to provide for rapid escape with the helicopter in the upright floating position or capsized. The means to open an underwater emergency exit must be simple and obvious, must not require any exceptional effort, and must be evaluated.

- (d) Compliance with point 26.415(b)(2) of Part-26 is demonstrated by complying with CS 29.811(h)(1) of CS-29 at Amendment 5 or later, or the equivalent, or with the following:

Underwater emergency exits for flight crew and passengers must be provided with highly conspicuous illuminated markings that are provided along the periphery (but not necessarily continuously) of each underwater emergency exit that illuminate automatically and give a clear indication of the aperture and are designed to remain visible with the helicopter capsized and the cabin or cockpit flooded. The markings must be sufficient to highlight the full periphery. The additional illuminated markings must remain visible for at least 10 minutes following rotorcraft flooding. The method chosen to automatically activate the system (e.g. water immersion switch(es), tilt switch(es), etc.) must illuminate the markings immediately, or be already illuminated, when a capsizing of the helicopter is inevitable.

[Issue: 26/4]

GM1 26.415(b) Underwater emergency exits

The objective is for no passenger to be in a worse position than the second person to egress through an exit in the event of a capsizing. The time available for evacuation is very short in such situations, and the provision of sufficient underwater emergency exits and ensuring that no occupant should need to wait for more than one other person to escape before being able to make their own escape will minimise the passengers' time to escape. The provision of an underwater emergency exit in each side of the fuselage for each unit (or part of a unit) of four passenger seats will make this possible, provided that the seats are positioned relative to the exits to maximise the probability of safe egress.

With regard to the location of the seats relative to the exits, the most obvious layout that maximises the achievement of the objective that no passenger is in a worse position than the second person to egress through an exit is a four-abreast arrangement with all the seats in each row located appropriately and directly next to the emergency exits. However, this might not be possible in all rotorcraft designs due to issues such as limited cabin width, the need to locate seats such as to accommodate normal boarding and egress, and the installation of items other than seats in the cabin. Notwithstanding this, an egress route necessitating movement such as along an aisle, around a cabin item, or in any way other than directly towards the nearest emergency exit, to escape the rotorcraft is not considered to be compliant with this provision.

[Issue: 26/4]

GM1 26.415(c) Underwater emergency exits

A possible design solution for the provision of sufficient underwater emergency exits may be to use the passenger cabin windows as additional emergency egress means by including a jettison feature. The jettison feature may be provided by modifying the elastomeric window seal such that its retention strength is either reduced, or can be reduced by providing a removable part of its cross section, i.e. the so-called push out window.

Exit designs with the following characteristics, when operated in an upright or any foreseeable floating attitude, would be considered to be compliant with point 26.415(b)(1) of Part-26 and CS 26.415(c):

- (a) the use of only one hand is needed to operate the exit itself;
- (b) no part of the opening means (e.g. an operating handle or control) is located remotely from the exit (that requires the person to move away from the immediate vicinity of the exit in order to reach it);
- (c) any operating handle or control can be gripped using either a bare or a gloved hand;

- (d) the exit meets the opening effort limitations set by FAA AC 29-2C AC 29.809.

The required test, demonstration or analysis may be conducted in a non-capsized attitude (i.e. dry) but considering obstructions that may be present when capsized.

[Issue: 26/4]

GM1 26.415(d) Underwater emergency exits

Disorientation of occupants may result in the normal emergency exit markings in the cockpit and passenger cabins being ineffective following the rotorcraft capsizing and the cabin flooding.

The additional markings of underwater emergency exits may be in the form of illuminated strips that give clear indications in all environments (e.g. at night, underwater) of the location of the underwater emergency exits.

[Issue: 26/4]

CS 26.420 Flight over water emergency equipment

- (a) Compliance with point 26.420(a)(1) of Part-26 is demonstrated by complying with CS 27.1415(b)(2) of CS-27 at Amendment 5 or later, or the equivalent, or CS 29.1415(b)(2) of CS-29 at Amendment 5 or later, or the equivalent respectively, or with the following:

Each life raft must be attached to the helicopter by a short retaining line to keep it alongside the helicopter and a long retaining line designed to keep it attached to the helicopter. Both retaining lines must be weak enough to break before submerging the empty life raft to which they are attached. The long retaining line must be of sufficient length that a drifting life raft will not be drawn towards any part of the helicopter that would pose a danger to the life raft itself or the persons on board.

- (b) Compliance with point 26.420(b) of Part-26 is demonstrated by complying with CS 27.1415(c) of CS-27 at Amendment 5, or later, or the equivalent, or CS 29.1415(c) of CS-29 at Amendment 5 or later or the equivalent respectively.

- (c) Compliance with point 26.420(c) of Part-26 is demonstrated by complying with CS 29.1415(b)(1) and CS 29.1561(a) and (c) of CS-29 at Amendment 5 or later, or the equivalent, or with the following:

- (1) For life raft activation, the following must be provided for each life raft:

- (i) primary activation: manual activation control(s), readily accessible to each pilot on the flight deck whilst seated;
- (ii) secondary activation: activation control(s) accessible from the passenger cabin with the rotorcraft in the upright or capsized position; if any control is located within the cabin, it must be protected from inadvertent operation; and
- (iii) tertiary activation: activation control(s) accessible to a person in the water, with the rotorcraft in any foreseeable floating attitude, including capsized.

It is acceptable for two of the manual activation functions from (i) to (iii) to be incorporated into one control.

- (2) Automatic life raft activation is permitted (e.g. triggered by water immersion); however, this capability must be provided in addition to the required manual activation controls.

Mitigation must be provided to address inadvertent deployment in flight and the potential for damage to the life raft from turning rotors during deployment on the water.

- (3) Placards must be installed, of appropriate sizes, numbers and locations, to highlight the location of each of the above life raft activation controls. All reasonably foreseeable rotorcraft floating attitudes must be considered when locating these placards.

[Issue: 26/4]

GM1 26.420(a) Flight over water emergency equipment

In accordance with CS 26.420, each life raft must be equipped with two retaining lines to be used for securing the life raft to the helicopter. The short retaining line should be of such a length as to hold the raft at a point next to an upright floating helicopter such that the occupants can enter the life raft directly without entering the water. If the design of the helicopter is such that the flight crew cannot enter the passenger cabin, it is acceptable for them to take a more indirect route when boarding the life raft. After life raft boarding is completed, the short retaining line may be cut, and the life raft then remains attached to the rotorcraft by means of the long retaining line.

The length of the long retaining line should not result in the life raft taking up a position which could create a potential puncture risk or hazard to the occupants, such as directly under the tail boom, tail rotor or main rotor disc.

[Issue: 26/4]

GM1 26.420(c) Flight over water emergency equipment

No provision for the stowage of life preservers is necessary if Regulation (EU) No 965/2012 mandates the need for constant-wear life preservers.

[Issue: 26/4]

CS 26.425 Provision of substantiated sea conditions

Compliance with point 26.425 of Part-26 is demonstrated by complying with CS 27.1587(b)(3) of CS-27 at Amendment 5 or later, or the equivalent, or CS 29.1587(c) of CS-29 at Amendment 5 or later or the equivalent respectively.

[Issue: 26/4]

CS 26.430 Emergency flotation system resistance to damage

Compliance with point 26.430 of Part-26 is demonstrated by:

- (a) compliance with CS 27.801(c)(1) of CS-27 at Amendment 5 or later, or the equivalent, or CS 29.801(c)(1) of CS-29 at Amendment 5 or later, or the equivalent certification specification as detailed in the existing type certificate of the helicopter or supplemental type certificate of the emergency flotation system; or

- (b) determining that the effects on the successful deployment and retention of the system as a result of possible damage from a water impact are minimised through the evaluation of the functionality of the emergency flotation system in the event of a water impact.

[Issue: 26/4]

CS 26.431 Determination of the robustness of emergency flotation system designs

Compliance with point 26.431 is demonstrated by carrying out an assessment in accordance with CS 27.801(c)(1) of CS-27 at Amendment 5 or later, or equivalent, or CS 29.801(c)(1) of CS-29 at Amendment 5 or later, or equivalent respectively, or with the following:

- (a) An evaluation of the functionality of the emergency flotation system in the event of a water impact that determines and takes into consideration the effects on the successful deployment and retention of the system as a result of possible damage from a water impact.
- (b) The design of the emergency flotation system must, as far as is practicable, in terms of complexity of design changes and any associated weight penalty:
- (1) have system components that are located away from the major effects of structural deformation;
 - (2) maximise the use of flexible pipes/hoses;
 - (3) avoid passing pipes/hoses or electrical wires through bulkheads that could act as 'guillotines' when the structure is subject to water impact loads; and
 - (4) for large helicopters and small Category A helicopters certified with ditching provisions, include redundant or distributed systems.
- (c) The evaluation must be documented and subsequently provided to the Agency. Design changes that are identified by the type certificate holder of the helicopter or the supplemental type certificate holder of the emergency flotation system as providing an improvement in the likelihood of a successful deployment and retention of the emergency flotation system following a water impact must be specified in this evaluation. Suitable justification for not incorporating a design change in the design must be provided. A schedule for the incorporation of any design changes must also be provided to the Agency. The evaluation is subject to review and agreement by the Agency.

[Issue: 26/4]

GM1 26.431 Determination of the robustness of emergency flotation system designs

The design changes that are identified after the evaluation are to be proposed to the Agency. Design changes that are not proposed for incorporation into the design are to be accompanied by a suitable justification for not doing so. The concepts contained in Appendix E to GM 21.A.101 'Procedure for evaluating material contribution to safety or impracticality of applying latest certification specifications to a changed product' to Regulation (EU) 748/2012 Annex I (Part 21) may be used as a suitable methodology to determine those design changes that are not proposed for incorporation or alternatively other suitable criteria may be proposed to the Agency.

[Issue: 26/4]

CS 26.435 Automatic deployment of an emergency flotation system

- (a) Compliance with point 26.435(a) of Part-26 is demonstrated by complying with CS 27.801(c)(2) of CS-27 at Amendment 5 or later, or the equivalent, or with the following:
- (1) An emergency flotation system that is stowed in a deflated condition during normal flight must have a means of automatic deployment following water entry. The means to automatically deploy the emergency flotation system must operate irrespective of whether or not inflation prior to water entry is the intended operation mode. If a manual means of inflation is provided, the emergency flotation system activation switch must be located on one of the primary flight controls and must be safeguarded against inadvertent actuation.
 - (2) Activation of the emergency flotation system upon water entry (irrespective of whether or not inflation prior to water entry is the intended operation mode) must result in an inflation time short enough to prevent the rotorcraft from becoming excessively submerged.
- (b) Compliance with point 26.435(b) of Part-26 is demonstrated by complying with CS 29.801(c)(2) of CS-29 at Amendment 5 or later, or the equivalent, or with the following:

An emergency flotation system that is stowed in a deflated condition during normal flight must have a means of automatic deployment following water entry that does not rely on any pilot action during flight. The inflation system of the emergency flotation system must have an appropriately low probability of spontaneous or inadvertent actuation in flight conditions for which float deployment has not been demonstrated to be safe. If this is achieved by disarming the inflation system, this must be achieved by the use of an automatic system employing appropriate input parameters. The choice of input parameters, and the architecture of the system, must be such that rearming of the system occurs automatically in a manner that will assure the inflation system functions as intended in the event of a water impact. It is not acceptable to specify any pilot action during flight.

[Issue: 26/4]

GM1 26.435(b) Automatic deployment of an emergency flotation system

The disarming of an emergency flotation system is typically required at high airspeeds, and could be achieved automatically using an airspeed switch. However, this would retain the possibility of inadvertent flight into the water at high airspeed, with the risk that the floats would not deploy. This scenario could be addressed by providing an additional or alternative means of rearming the floats as the helicopter descends through an appropriate height threshold. A height below that of the majority of offshore helidecks could be chosen in order to minimise exposure to inadvertent activation above the demonstrated float deployment airspeed.

[Issue: 26/4]

APPENDIX F TO CS-26

Part I — Test Criteria and Procedures

Refer to CS-25 Appendix F Part I initial issue or later amendments.

Part II — Flammability of Seat Cushions

Refer to CS-25 Appendix F Part II initial issue or later amendments.

Part III — Test Method to Determine Flame Penetration Resistance of Cargo Compartment Liners

Refer to CS-25 Appendix F Part III initial issue or later amendments.

Part IV — Test Method to Determine the Heat Release Rate From Cabin Materials Exposed to Radiant Heat

Refer to CS-25 Appendix F Part IV initial issue or later amendments.

Part V — Test Method to Determine the Smoke Emission Characteristics of Cabin Materials

Refer to CS-25 Appendix F Part V initial issue or later amendments.