CS-26— ISSUE 5 — CHANGE INFORMATION

The European Union Aviation Safety Agency (EASA) publishes the issues of additional airworthiness specifications for operations (CS-26) as consolidated documents.

Consequently, except for a note '[Issue: 26/5]' under the amended rule, the consolidated text of CS-26 Issue 5 (Annex to ED Decision 2024/010/R) does not allow readers to see the amendments that have been introduced compared to the previous issue. To show the changes, this change information document was created, using the following format:

— deleted text is ~~struck through~~;

— new or amended text is highlighted in blue;

— an ellipsis '[…]' indicates that the rest of the text is unchanged.

Note to the reader

In amended, and in particular in existing (that is, unchanged) text, 'Agency' *is used interchangeably with* 'EASA'. *The interchangeable use of these two terms is more apparent in the consolidated versions. Therefore, please note that both terms refer to the* 'European Union Aviation Safety Agency (EASA)'.

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SUBPART A — GENERAL PROVISIONS

[…]

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.

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[Issue: 26/5]

SUBPART B — ~~LARGE~~ AEROPLANES

[…]

CS 26.175 Cargo compartment fire protection

(a) For large aeroplanes referred to in point 26.175(a) of Part-26, compliance with point 26.175 is demonstrated by providing:

(1) the reference to the cargo compartment classification in accordance with CS 25.857;

(2) relevant information on the aeroplane design characteristics associated with the cargo compartment fire protection capabilities for which the certificate or design change approval holders had to demonstrate compliance with the certification specifications in the section 'fire protection' of Subpart D of CS-25 or equivalent as established in the certification basis, and the related acceptable means of compliance;

(3) the reference to the demonstrated specifications established in the certification basis.

(b) For small aeroplanes referred to in points 26.175(a) and (b) of Part-26, compliance with point 26.175 is demonstrated by providing:

(1) relevant information on the aeroplane design characteristics associated with the cargo compartment fire protection capabilities for which the certificate or design change approval holders had to demonstrate compliance with the certification specifications in the section 'fire protection' of Subpart D of CS-23 up to Amendment 4 or the section 'fire

and high energy protection' of Subpart D of CS-23 as from Amendment 5 or equivalent as established in the certification basis, and the related acceptable means of compliance;

(2) the reference to the demonstrated specifications established in the certification basis.

[Issue: 26/5]

GM1 26.175 Cargo compartment fire protection

INFORMATION ON AEROPLANE DESIGN CHARACTERISTICS ASSOCIATED WITH CARGO COMPARTMENT FIRE PROTECTION CAPABILITIES

(a) The list below provides examples of the elements of information that may be made available to all known operators. Some of the examples may not apply since they depend on the aeroplane type and on the class of the cargo compartment. As deemed necessary, further detailed information may be included.

— cargo compartment characteristics, e.g.:

  — location

  — accessibility

  — available volume

— smoke and fire detection systems' features and capabilities, e.g.:

  — fire detection temperature

  — class of fire used to assess the ability of the smoke detector

— fire-extinguishing, suppression and control systems' features and capabilities, e.g.:

  — location

  — quantity

  — handheld or built-in fire extinguisher

  — type and quantity of fire-extinguishing agents

  — fire suppression capability

— ventilation control systems' features, e.g. shut-off capability during a fire event

— cargo compartment, floor, ceiling and sidewall liner panels' features and capability, e.g.:

  — material

  — fire-resistance characteristics

— means to exclude hazardous quantities of smoke, flames or noxious gases from other compartments, e.g. air conditioning

(b) Further guidance can be found in ICAO Doc 10102 'Guidance for Safe Operations Involving Aeroplane Cargo Compartments'.

[Issue: 26/5]

[…]

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(c)~~ 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.

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[Issue: 26/5]

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~~ which 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]
[Issue: 26/5]

[…]

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 or an organisation responsible for the management of continuing airworthiness (hereinafter 'the requester') for FCMS lists and a DTI by 26 March 2022~~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~~ requester.

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 will be made.

When a request is received, the date of its receipt should be recorded, and a record kept of the subsequent communications with the ~~operator~~ requester, 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~~ a fleet.

Note: It might also be possible that an operator or an organisation responsible for the management of continuing airworthiness ~~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]
[Issue: 26/5]

[…]

CS 26.370 ~~Continuing airworthiness tasks and aircraft m~~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~~ if the ~~aircraft~~ maintenance programme ~~(AMP)~~ incorporates the approved ~~damage tolerance based inspection programme~~ DTIs 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~~ if compliance with point (i) of this CS is demonstrated or ~~by ensuring that~~ the adverse effects that repairs and ~~modifications~~ changes may have on FCS are addressed by:

(1) incorporating into the maintenance programme ~~AMP~~ all available approved DTIs for ~~modifications~~ changes 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 maintenance programme ~~AMP~~ the approved DTIs for all other repairs and ~~modifications~~ changes in accordance with the schedule adopted in a plan to be included, or referred to, in the maintenance programme ~~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~~ changes 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 organisation responsible for the management of continuing airworthiness and for the establishment of the maintenance programme, ~~maintenance organisation~~ by 26 February 2022.

(2) Requests for FCMS lists and DTIs for ~~modifications~~ changes identified in point (c)(1) above as supplemental type certificates (STCs) and other existing major 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~~ changes ~~in~~ of 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 evaluation from the organisation responsible for the management of continuing airworthiness ~~management organisation's own evaluation~~, is included in a report prepared by the organisation responsible for the management of continuing~~ed~~ airworthiness ~~management organisation~~. The report should be completed by 26 August 2022 or before operating the aeroplane in accordance with Annex IV (Part-CAT) to Regulation (EU) No 965/2012, whichever occurs later.

(d) ~~Operator or owner r~~Review of design approval holder compliance data

A review has been conducted by the organisation responsible for the management of 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 maintenance programme ~~AMP~~ before 26 February 2024~~.~~

For ~~modifications~~ changes 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

maintenance programme ~~AMP~~ by 26 February 2024 or before operating the aeroplane in accordance with Annex IV (Part-CAT) to Regulation (EU) No 965/2012, whichever occurs later.

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

For all major ~~modifications~~ changes 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 maintenance programme ~~AMP~~ by 26 February 2024 or before operating the aeroplane in accordance with Annex IV (Part-CAT) to Regulation (EU) No 965/2012, whichever occurs later.

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

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

(2) The plan has been incorporated, in full or by reference, into the maintenance programme ~~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~~ change 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 maintenance programme ~~AMP~~ in accordance with point (h).

(4) In case a ~~modification~~ change is identified after establishing the list of ~~modifications~~ changes according to point (c)(3) above, e.g. during an aeroplane survey, ~~add~~ that ~~modification~~ change must be added 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 maintenance programme ~~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~~ changes identified either in the plan or added to the list of ~~modifications~~ changes according to point (g)(4) above, and incorporating the applicable approved DTIs in the maintenance programme ~~AMP~~ in accordance with point (h) below.

(h) Schedule for obtaining DT data for certain ~~modifications~~ changes

For major ~~modifications~~ changes subject to point (g), a schedule is established for obtaining DT data such that:

(1) for major ~~modifications~~ changes identified in the plan in accordance with point (g)(3), all applicable approved DTIs will be incorporated into the maintenance programme ~~AMP~~ before 26 February 2026; and

(2) for major ~~modifications~~ changes identified according to point (g)(4), the applicable approved DTIs will be incorporated into the maintenance programme ~~AMP~~ by 26 February 2026 or within 12 months of the identification of that ~~modification~~ change, or before operating the aircraft in accordance with Annex IV (Part-CAT) to Regulation (EU) No 965/2012, 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~~ changes affecting the FCS of an aeroplane have been incorporated into the maintenance programme ~~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).

Table 1

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

~~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]
[Issue: 26/5]

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

MEANS TO ADDRESS THE ADVERSE EFFECTS OF REPAIRS AND CHANGES

Unless ~~an operator or owner complies with~~ there is a process as specified in 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 maintenance programme ~~AMP~~ before 26 February 2024 are those DTIs that have been developed by the TC or RTC holders in compliance with points 26.302 and 26.307, and by the STC holders in compliance with point~~s 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 all known operators and, on request, to the involved organisation responsible for the management of continuing airworthiness, allowing ~~them to incorporate~~ the incorporation of the data in the maintenance programme prior to 26 February 2024. The organisation responsible for the management of continuing airworthiness and for the establishment of the maintenance programme ~~operator~~ will need to identify and contact the design approval holder for the applicable ~~modification~~ change and request DT data for the ~~modification~~ change. If the design approval holder for a ~~modification~~ change 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 of the organisation responsible for the management of continuing airworthiness, 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~~ change, including the agreements by which the DTIs will be obtained.

For ~~modifications~~ changes approved after 1 September 2003, if the ~~operator~~ organisation responsible for the management of continuing airworthiness decides not to obtain the DTI that is available from the design approval holder of the ~~modification~~ change and elects to contract a third party, the

timescale of CS 26.370(e) for the incorporation of the approved DTI into the maintenance programme ~~AMP~~ remains unchanged.

For the DTIs of ~~modifications~~ changes where the TC holder is not the approval holder and the approval was issued prior to 1 September 2003, the ~~operator~~ organisation responsible for the management of continuing airworthiness 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~~ organisation responsible for the management of continuing airworthiness 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 maintenance programme ~~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~~ change identified in the review of records as per CS 26.370(c), when the DTI for a ~~modification~~ change is not already incorporated into the maintenance programme ~~AMP~~, the ~~operator~~ organisation responsible for the management of continuing airworthiness should ensure that it will be obtained. This means that the design approval holders of all ~~modifications~~ changes for which the ~~operator~~ organisation responsible for the management of continuing airworthiness 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]
[Issue: 26/5]

SUBPART C — HELICOPTERS

[…]

CS 26.405 Cargo compartment fire protection

For small helicopters and large helicopters referred to in point 26.405 of Part-26, compliance with point 26.405 is demonstrated by providing:

(a) relevant information on the helicopter design characteristics associated with the cargo compartment fire protection capabilities for which the certificate or design change approval holders had to demonstrate compliance with the certification specifications in the section ‘fire protection’ of Subpart D of CS-27 and CS-29 respectively or equivalent as established in the certification basis, and the related acceptable means of compliance;

(b) the reference to the demonstrated specifications established in the certification basis.

[Issue: 26/5]

GM1 26.405 Cargo compartment fire protection

INFORMATION ON HELICOPTER DESIGN CHARACTERISTICS ASSOCIATED WITH CARGO COMPARTMENT FIRE PROTECTION CAPABILITIES

The list below provides examples of the elements of information that may be made available to all known operators. Some of the examples may not apply since they depend on the helicopter type and on the type of cargo compartment. As deemed necessary, further detailed information may be included.

- cargo compartment characteristics, e.g.:
  - location
  - accessibility
  - available volume
- smoke and fire detection systems' features and capabilities, e.g. fire detection temperature
- fire-extinguishing, suppression and control systems' features and capabilities, e.g.:
  - location
  - quantity
  - handheld or built-in fire extinguisher
  - type and quantity of fire-extinguishing agents
  - fire suppression capability
- ventilation control systems' features, e.g. shut-off capability during a fire event
- design characteristics to prevent the accumulation of harmful quantities of smoke, flames, extinguishing agents or noxious gases in other compartments;
- cargo compartment, floor, ceiling and sidewall liner panels features and capability, e.g.:
  - material
  - fire-resistance characteristics
- design and sealing of inaccessible compartments' characteristics.

[Issue: 26/5]

[…]

CS 26.440 Fuel system crash resistance

Compliance with point 26.440 of Part-26 is demonstrated by complying with:

- CS 27.952 of CS-27 or the equivalent, CS 29.952 of CS-29 or the equivalent; and
- CS 27.963 of CS-27 or the equivalent, CS 29.963 of CS-29 or the equivalent; and
- CS 27.973 of CS-27 or the equivalent, CS 29.973 of CS-29 or the equivalent; and
- CS 27.975(b) of CS-27 or the equivalent, CS 29.975(a) of CS-29, or with the following:

(a) For helicopters under point 26.440(a)(1) or 26.440(b)(1):

(1) Each fuel tank, or the most critical fuel tank, must be subjected to a drop test that results in no subsequent leakage of the fluid that is contained within it, using the following parameters:

(i) the tank must be dropped from a height of at least 15.2 m (50 ft);

(ii) the surface that the tank will impact after it has been dropped must not be capable of absorbing the energy of the impact (i.e. the surface must not deform as a result of the impact);

(iii) the tank must be filled with water to a level that is 80 % of the normal, full capacity of the tank; and

(iv) the tank must drop freely and impact in a horizontal position of ±10 °.

(2) Self-sealing breakaway fuel line couplings must be installed unless hazardous relative motion of fuel system components to each other or to local rotorcraft structure is demonstrated to be extremely improbable or unless other means are provided. The couplings or equivalent devices must be installed at all fuel tank-to-fuel line connections, tank-to-tank interconnects, and at other points in the fuel system where local structural deformation could lead to release of fuel.

(i) The design and construction of self-sealing breakaway fuel line couplings must incorporate the following design features:

(A) The load necessary to separate a breakaway coupling must be between 25 % and 50 % of the minimum ultimate failure load (ultimate strength) of the weakest component in the fluid-carrying line. The separation load must in no case be less than 1334 N (300 lb), regardless of the size of the fluid line.

(B) A breakaway coupling must separate whenever its ultimate load (as defined in subparagraph (b)(1)(i)) is applied in the failure modes that are most likely to occur.

(C) All breakaway couplings must incorporate design provisions to visually ascertain that the coupling is locked together (leakage-free) and is open during normal installation and service.

(D) All breakaway couplings must incorporate design provisions to prevent uncoupling or unintended closing due to operational shocks, vibrations or accelerations.

(E) No breakaway coupling design may allow the release of fuel once the coupling has performed its intended function.

(ii) All individual breakaway couplings, coupling fuel feed systems or equivalent means must be designed, tested, installed and maintained so that inadvertent fuel shut-off in flight is improbable in accordance with CS 27.955(a) or CS 29.955 or the equivalent, and must comply with the fatigue evaluation requirements of CS 27.571 or CS 29.571, as appropriate, or the equivalent, without leakage.

(iii) Alternate means equivalent to the use of breakaway couplings must not create a survivable impact-induced load on the fuel line to which they are installed, which is greater than 25 % to 50 % of the ultimate load (strength) of the weakest component of the line, and must comply with the fatigue evaluation requirements of CS 27.571 or CS 29.571, as appropriate, or the equivalent, without leakage.

(3) Fuel tanks, fuel lines, electrical wires and electrical devices must be designed, constructed and installed, as far as practicable, to be crash-resistant.

(4) Rigid or semi-rigid fuel tank or bladder walls must be impact- and tear-resistant.

(5) Each flexible fuel tank bladder or liner must be approved or shown to be suitable for the specific application and must be puncture-resistant. Puncture resistance must be shown by using the methodology that is contained in paragraph 16.0 of European Technical Standard Order (ETSO)-C80, when resisting a minimum puncture force of:

(i) 1646 N (370 lbs); or

(ii) 1112 N (250 lbs) if the drop test that is required in paragraph (a) is successfully conducted with the tank enclosed in a surrounding structure that is representative of the tank installation that includes any projections or other design features that are likely to contribute to the rupture of the tank.

(6) The venting system must be designed to minimise spillage of fuel through the vents to an ignition source in the event of either a rollover during landing, ground operation or a survivable impact.

(b) For helicopters under points 26.440(a)(2) or 26.440(b)(2):

(1) Each fuel tank, or the most critical fuel tank, must be subjected to a drop test that results in no subsequent leakage of the fluid that is contained within it, using the following parameters:

(i) the tank must be dropped from a height of at least 15.2 m (50 ft);

(ii) the surface that the tank will impact after it has been dropped must not be capable of absorbing the energy of the impact (i.e. the surface must not deform as a result of the impact);

(iii) the tank must be filled with water to a level that is 80 % of the normal, full capacity of the tank; and

(iv) the tank must drop freely and impact in a horizontal position of ±10 °.

(2) Fuel tanks, fuel lines, electrical wires, and electrical devices must be designed, constructed and installed, as far as practicable, to be crash-resistant.

(3) Each flexible fuel tank bladder or liner must be approved or shown to be suitable for the specific application and must be puncture-resistant. Puncture resistance must be shown by using the methodology that is contained in paragraph 16.0 of European Technical Standard Order (ETSO)-C80, when resisting a minimum puncture force of 1112 N (250 lbs).

[Issue: 26/5]

GM1 26.440(a)(2)(iii) Fuel system crash resistance

Where practicable, installations that use a fuel line slack or stretch as an equivalent means should be able to elongate enough to accommodate any probable relative motion between the ends of the line during an accident. 20–30 % of the line length may be used as a guideline in lieu of a more rational analysis.

[Issue: 26/5]

GM1 26.440(a)(4) Fuel system crash resistance

CS 26.440(a)(4) only applies to rigid or semi-rigid fuel tank or bladder walls; hence, flexible liners are not required to comply with that requirement.

[Issue: 26/5]