CS-25 AMENDMENT 23 — CHANGE INFORMATION

EASA publishes amendments to certification specifications as consolidated documents. These documents are used for establishing the certification basis for applications made after the date of entry into force of the amendment.

Consequently, except for a note '[Amdt No: 25/23]' under the amended paragraph, the consolidated text of CS-25 does not allow readers to see the detailed changes introduced by the new amendment. To allow readers to also see these detailed changes, this document has been created. The same format as for publication of Notices of Proposed Amendments (NPAs) has been used to show the changes:

(a) deleted text is ~~struck through~~;

(b) new or amended text is highlighted in blue;

(c) an ellipsis '[…]' indicates that the remaining text is unchanged.

BOOK 1

SUBPART D — DESIGN AND CONSTRUCTION

CS 25.791 Passenger information signs and placards

(See AMC 25.791)

[…]

(d) Lavatories must have 'No Smoking' or 'No Smoking in Lavatory' placards conspicuously ~~positioned~~ located on or adjacent to each ~~ashtray~~ side of the entry door. ~~The placards must have red letters at least 13 mm (0·5 inches) high on a white background of at least 25 mm (1·0 inches) high. (A No Smoking symbol may be included on the placard.)~~

[…]

CS 25.831 Ventilation

(a) ~~Each passenger and crew compartment must be ventilated and each crew compartment must have enough fresh air (but not less than 0.28 m3/min. (10 cubic ft per minute) per crewmember) to enable crewmembers to perform their duties without undue discomfort or fatigue.~~ Under normal operating conditions and in the event of any probable failure conditions of any system that would adversely affect the ventilating air, the ventilation system must be designed to provide a sufficient amount of uncontaminated air to enable the crew members to perform their duties without undue discomfort or fatigue, and to provide reasonable passenger comfort. For normal operating conditions, the ventilation system must be designed to provide each occupant with an airflow that contains at least 0.25 Kg (0.55 lb) of fresh air per minute. (See AMC 25.831(a).)

[…]

CS 25.853 Compartment interiors

(See AMC 25.853)

[…]

(g) Regardless of whether smoking is allowed in any other part of the aeroplane, lavatories must have self-contained removable ashtrays located conspicuously ~~both inside and outside~~ on or near the entry side of each lavatory door~~. One ashtray located outside a lavatory door~~ except that one ashtray may serve more than one lavatory door if the ashtray can be seen readily from the cabin side of each lavatory ~~door~~ served.

[…]

SUBPART F — EQUIPMENT

CS 25.1441 Oxygen equipment and supply

(See AMC 25.1441)

[…]

(c) Except for oxygen chemical generators and for small sealed, one-time use, gaseous oxygen bottles, t~~T~~here must be a means to allow the crew to readily determine, during flight, the quantity of oxygen available in each source of supply.

[…]

CS 25.1457 Cockpit voice recorders

(See AMC 25.1457)

[…]

(d) Each cockpit voice recorder must be installed so that –

(1)(i) It receives its electrical power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardising service to essential or emergency loads; and

(ii) It remains powered for as long as possible without jeopardising emergency operation of the aeroplane;

(2) If the recorder has a recording duration of less than 25 hours, ~~T~~there is an automatic means to ~~simultaneously~~ stop the recording ~~recorder and prevent each erasure feature from functioning,~~ within 10 minutes after crash impact; ~~and~~

(3) There is an aural or visual means for pre-flight checking of the recorder for proper operation; ~~.~~

(4) Any single electrical failure that is external to the recorder does not disable both the cockpit voice recorder function and the flight data recorder function;

(5) There is a means for the flight crew to stop the cockpit voice recorder function upon completion of the flight in a way such that re-enabling the cockpit voice recorder function is only possible by dedicated manual action;

(6) It has an alternate power source:

— that provides at least 10 minutes of electrical power to operate both the recorder and the cockpit-mounted area microphone; and

— to which the recorder and the cockpit-mounted area microphone are switched automatically in the event that all other power to the recorder is interrupted either by a normal shutdown or by any other loss of power; and

(7) If the recorder is deployable:

(i) It has an automatic deployment capability that is engaged no later than when the aeroplane is airborne and that remains engaged as long as the aeroplane is airborne;

(ii) The automatic deployment capability and the emergency locator transmitter integrated in the deployable recorder cannot be manually disengaged from the cockpit when the aeroplane is capable of moving under its own power;

(iii) The deployment occurs upon the detection of severe structural damage that causes the immediate break-up of the aeroplane;

(iv) The deployment occurs upon the immersion of the aeroplane in water;

(v) An assessment of the effects of unintended deployment is made in accordance with the specifications of CS 25.1309;

(vi) Effects on persons other than aeroplane occupants and on search-and-rescue services are taken into account when assessing the unintended deployment failure condition;

(vii) There is no means to manually deploy the recorder while the aeroplane is capable of moving under its own power; and

(viii) An alert is provided to the flight crew when the flight recorder is no longer attached to the aeroplane.

(e) ~~The record container must be located and mounted to minimise the probability of rupture of the container as a result of crash impact and consequent heat damage to the record from fire. In meeting this requirement, the record container must be as far aft as practicable, but may not be where aft mounted engines may crush the container during impact. However, it need not be outside of the pressurised compartment.~~

If the recorder is not deployable, the container of the recording medium must be located and mounted so as to minimise the probability of the container rupturing, the recording medium being destroyed, or the underwater locating device failing as a result of any possible combinations of:

(1) impact with the Earth's surface;

(2) the heat damage caused by a post-impact fire; and

(3) immersion in water.

If the recorder is deployable, the deployed part must be designed and installed so as to minimise the probability of the recording medium being destroyed or the emergency locator transmitter failing to transmit (after damage or immersion in water) as a result of any possible combinations of:

(1) the deployment of the recorder;

(2) impact with the Earth's surface;

(3) the heat damage caused by a post-impact fire; and

(4) immersion in water.

(f) If the cockpit voice recorder has ~~a bulk~~ an erasure device or function, the installation must be designed to minimise the probabilities of inadvertent operation and of actuation of the erasure device or function during crash impact.

(g) ~~Each recorder~~ The container of the cockpit voice recorder must –

(1) Be ~~either~~ bright orange ~~or bright yellow~~; however, if the recorder is deployable, the surface that is visible from outside the aeroplane, when the recorder is installed, may be of another colour;

(2) Have reflective tape affixed to its external surface to facilitate ~~its location~~ locating it ~~under water~~; ~~and~~

(3) Have, if the recorder is not deployable, an underwater locating device~~, when required by the operating rules,~~ on or adjacent to the container which is secured in such a manner that they are not likely to be separated during crash impact~~.~~;

(4) Have, if the recorder is deployable, an integrated emergency locator transmitter that automatically starts emitting upon deployment; and

(5) Be, if the recorder is deployable, able to float on water and self-oriented so that the transmission of the emergency signal is not impeded.

CS 25.1459 Flight data recorders

(See AMC 25.1459)

(a) Each flight data recorder required by the operating rules must be installed so that –

[…]

(3) (i) It receives its electrical power from the bus that provides the maximum reliability for operation of the ~~flight~~ recorder without jeopardising service to essential or emergency loads ; and

(ii) It remains powered for as long as possible without jeopardising the emergency operation of the aeroplane;

(4) There is an aural or visual means for pre-flight checking of the recorder for proper recording of data in the storage medium ~~(see AMC 25.1459 (a)(4))~~;

(5) ~~Except for recorders powered solely by the engine-driven electrical generator system,~~ If the recorder has a recording duration of less than 25 hours, there is an automatic means to ~~simultaneously~~ stop ~~a~~ the recording ~~recorder that has a data erasure feature and prevent each erasure feature from functioning,~~ within 10 minutes after crash impact. This requirement does not apply to recorders that are powered solely by the engine-driven electrical generator system; ~~and~~

(6) There is a means to record data from which the time of each radio transmission either to or from ATC can be determined~~.~~;

(7) If another recorder is installed to perform the cockpit voice recorder function, any single electrical failure that is external to the recorder dedicated to the flight data recorder function does not disable both the recorders; and

(8) If the recorder is deployable, it complies with CS 25.1457(d)(7).

(b) ~~Each non-ejectable record container must be located and mounted so as to minimise the probability of container rupture resulting from crash impact and subsequent damage to the record from fire. In meeting this requirement the record container must be located as far aft as practicable, but need not be aft of the pressurised compartment, and may not be where aft-mounted engines may crush the container upon impact. (See AMC 25.1459(b))~~

If the recorder is not deployable, the container of the recording medium must be located and mounted so as to minimise the probability of the container rupturing, the recording medium being destroyed, or the underwater locating device failing as a result of any possible combinations of:

(1) impact with the Earth's surface;

(2) the heat damage caused by a post-impact fire; and

(3) immersion in water.

If the recorder is deployable, the deployed part must be designed and installed so as to minimise the probability of the recording medium being destroyed or the emergency locator transmitter failing to transmit (after damage or immersion in water) as a result of any possible combinations of:

(1) the deployment of the recorder;

(2) impact with the Earth's surface;

(3) the heat damage caused by a post-impact fire; and

(4) immersion in water.

(c) A correlation must be established between the flight data recorder readings of airspeed, altitude, and heading and the corresponding readings (taking into account correction factors) of the first pilot's instruments.[…]

(d) ~~Each recorder~~ The container of the flight data recorder must comply with the specifications in CS 25.1457(g) that are applicable to the container of the cockpit voice recorder.

~~(1) Be either bright orange or bright yellow;~~

~~(2) Have reflective tape affixed to its external surface to facilitate its location under water; and~~

~~(3) Have an underwater locating device, when required by the operating rules, on or adjacent to the container which is secured in such a manner that they are not likely to be separated during crash impact.~~

(e) Any novel or unique design or operational characteristics of the ~~aircraft~~ aeroplane must be evaluated to determine whether any dedicated parameters must be recorded on the flight data recorder~~s~~ in addition to, or in place of, the parameters that are required by the existing requirements.

BOOK 2

AMC — SUBPART C

AMC 25.341
Gust and Continuous Turbulence Design Criteria (Acceptable Means of Compliance)

[…]

8. **NON-LINEAR CONSIDERATIONS**

a. General. […]

The effect of non-linearities should be investigated above limit conditions to assure that the system presents no anomaly compared to behaviour below limit conditions, in accordance with ~~CS~~ Appendix K, K25.2(b)(2).

[…]

AMC — SUBPART D

AMC 25.701(d)
Flap and slat interconnection

FAA Advisory Circular AC 25-14 High Lift and Drag Devices, dated 5-4-88, incorporated in FAA Advisory Circular AC 25-22, Certification of Transport Airplane Mechanical Systems, dated 14 March 2000, is accepted by EASA ~~the Agency~~ as providing acceptable means of compliance with CS 25.701(d).

AMC 25.777(c)
Full and unrestricted movement of cockpit controls

1. General

CS 25.777(c) requires cockpit controls to be located and arranged so that full and unrestricted movement of each control can be made by the minimum flight crew. The use of the controls shall be evaluated for pilots across the range of statures required by CS 25.777(c). This evaluation should take into account foreseeable normal and failure conditions.

2. Rudder and brake controls

Particular attention should be paid to rudder and brake controls. The control movement of the rudder pedals and brake pedals should be evaluated in order to ensure that full use can be made of all the available controls in the event of an engine failure, including on take-off and including engine failure at low speeds below V_{MCG}.

The evaluation should ensure that each member of the flight crew is always able to apply full rudder and maximum brake pressure on the same side simultaneously (e.g. full right rudder with maximum right brake pressure, and vice versa). Furthermore, the ergonomics of the design should be such that:
a) the flight crew members can, in each condition, continue to apply brake pressure on the opposite side; and

b) inadvertent brake application on the opposite side is precluded.

This evaluation should ideally be performed in a representative simulator, but it may also be performed statically in a representative cockpit.

AMC 25.831(a)
Ventilation

1. General.

CS 25.831(a) specifies that the ventilation system must be designed to provide a minimum of 0.25 kg (0.55 lb) of fresh air per minute per person (i.e. 10 cubic feet per minute of air at 8 000 feet pressure altitude and at a cabin temperature of 24°C (75°F)) for normal operations.

The applicant may demonstrate compliance with this specification by analysis, ground tests, and/or flight tests.

Because it is not practicable to measure the airflow at each occupant's location, the fresh air supplied per minute per occupant may be determined by averaging the total cabin fresh air supply and cockpit fresh air supply for the number of occupants that each area can accommodate, assuming a uniform ventilation distribution in each area.

2. Low airflow capability during some flight phases

If an applicant proposes not to provide the minimum required fresh airflow during the phases of flight that use low power levels, the applicant must show that the cabin air quality is not compromised during those flight phases.

3. Operations with the air conditioning system 'off'

The following provisions should be considered for the limited time periods, such as during take-off, during which the air conditioning system is 'off':

a. There should be a means to annunciate to the flight crew that the air conditioning system is selected to 'off'.

b. It should be demonstrated that the ventilation system continues to provide an acceptable environment in the passenger cabin and the cockpit for the brief period when the air conditioning system is not operating.

c. Furthermore, the equipment environment should be evaluated during those periods to ensure that the reliability and performance of the equipment are not impaired. This evaluation should cover the extremes of ambient hot and cold air temperatures in which the aeroplane is expected to operate.

d. In addition, it should be demonstrated that no unsafe condition will result from operation for a limited time with the air conditioning system 'off', if a fire occurs. When demonstrating compliance with CS 25.831(d) (cockpit smoke removal), CS 25.857 (occupied areas smoke penetration), and CS 25.858 (smoke detection), the following should be considered:

   i. During the operation of the aeroplane for any limited period of time with the air conditioning system 'off', the smoke detection systems should be effective.

   ii. It should be possible for the air conditioning system to be turned 'on' and returned to the approved air conditioning system 'on' configuration to extract any hazardous quantities of smoke.

e. Finally, the period during which the aeroplane is operated with the air conditioning system 'off' is intended to be of short duration. Therefore, the maximum time period allowed for the operation of an aeroplane in this configuration should be defined by the applicant and specified in the appropriate operating manuals, along with any related operating procedures that are necessary to ensure that the above items are addressed.

4. Probable failure conditions

For probable failure conditions, the ventilation system should be designed to provide enough fresh air to prevent the accumulation of odours and pollutants such as carbon dioxide. Under these conditions, ~~T~~the supply of fresh air ~~in the event of the loss of one source,~~ should not be less than 0.18 kg/min (0·4 lb/min) per person for any period exceeding five minutes. However, temporary reductions below this flow rate may be accepted provided that the compartment environment can be maintained at a

level which is not hazardous to the occupant; for this purpose, the applicant may refer to international cabin air quality standards.

AMC — SUBPART F

AMC 25.1441(c)

Oxygen chemical generators and small sealed, one-time use gaseous oxygen bottles

For chemical generators and for small, sealed, one-time use, gaseous oxygen bottles distributed throughout the cabin for passenger use, the following precautions should be considered in order to ensure that oxygen is actually available:

1. The oxygen supply source should be designed and tested to ensure that it will retain the required quantity of oxygen or chemicals throughout its expected life under the foreseeable operating conditions;

2. A means should be provided for maintenance personnel to readily determine when oxygen is no longer available in the supply source due to inadvertent activation;

3. The life limit of the oxygen supply source should be established by test and analysis;

4. Each oxygen supply source should be labelled such that the expiration date can be easily checked by maintenance; and

5. Instructions for continued airworthiness should be provided to ensure that the oxygen supply sources:

   a. are removed from the aeroplane and replaced whenever they have been used, and before they reach their expiration dates; and

   b. are not installed on the aeroplane beyond their expiration dates.

AMC 25.1457

Cockpit Voice Recorders

1. General

In showing compliance with CS 25.1457, the applicant should take into account EUROCAE D~~d~~ocument No ~~document No.~~ ED-112A 'MOPS for Crash Protected Airborne Recorder Systems' ~~ED-56 'Minimum Operational Performance Requirement for Cockpit Voice Recorder System', as referred to in ETSO-C123a~~.

'Deployable recorder' designates a flight recorder installed on the aeroplane which is capable of automatically deploying from the aeroplane.

2. Combination recorders

a. If the recorder performs several recording functions (i.e. it is a combination recorder), the means for pre-flight checking the recorder for proper operation should indicate which recording functions (e.g. FDR, CVR, data-link recording, etc.) have failed.

b. When two flight data and cockpit voice combination recorders are installed, either because they are required or because they are an acceptable alternative to a flight data recorder and a cockpit

voice recorder, then these two fight data and cockpit voice combination recorders should be connected to separate power buses.

3. Automatic means to stop the recording after a crash impact

The automatic means to stop the recording (which is required if the recorder has a recording duration of less than 25 hours) should operate even if a power supply is still available.

The automatic means to stop the recording within 10 minutes after a crash impact may rely on:

a. dedicated crash impact detection sensors. In that case, negative acceleration sensors (also called 'g-switches') should not be used as the sole means of detecting a crash impact; or

b. the recording start-and-stop logic, provided that this start-and-stop logic stops the recording 10 minutes after power is lost on all engines (and, when applicable, the APU) when the aeroplane is on the ground.

4. Means for the flight crew to stop the cockpit voice recorder function

The means required for the flight crew to stop the cockpit voice recorder function after the completion of the flight is needed in order to preserve the recording for the purpose of investigating accidents and serious incidents. In fulfilling this requirement, it is acceptable to use circuit breakers to remove the power to the equipment. Such a means to stop the cockpit voice recorder function is not in contradiction with CS 25.1357(f), because it would not be used under normal operating conditions, but after an accident or a serious incident has occurred.

5. Power sources

a. An alternate power source is a power source that is different from the source(s) that normally provides (provide) power to the cockpit voice recorder function.

In CS 25.1457(d)(6), a 'normal shutdown' of power to the cockpit voice recorder means a commanded interruption of the power supply from the normal cockpit voice recorder power bus; for example, after the termination of a normal flight. 'All other power' means the electrical power source(s) used for normal operation of the cockpit voice recorder function. The following applies to the installation of an alternate power source:

i. A tolerance of 1 minute on the 10 minutes minimum power requirement of CS 25.1457(d)(6) is acceptable;

ii. The use of aeroplane batteries or other power sources is acceptable, provided that electrical power to the essential and critical loads is not compromised;

iii. If the alternate power source relies on dedicated stand-alone batteries (such as a recorder independent power supply), then these batteries should be located as close as practicable to the recorder;

iv. The means for performing a pre-flight check of the recorder for proper operation should include a check of the availability of the alternate power source;

v. If the cockpit voice recorder function is combined with other recording functions within the same unit, the alternate power source may also power the other recording functions; and

vi. If two flight data and cockpit voice combination recorders are installed, either because they are required, or because they are an acceptable alternative to single-function recorders, then only one recorder needs to have an alternate power source for the cockpit voice recorder function. This should be the combination recorder that is located closer to the cockpit area.

b. If the cockpit voice recorder function has a recording duration of less than 25 hours, the electrical power to this function should not be supplied for more than 10 minutes after power is lost on all engines (and, when applicable, the APU) when the aeroplane is on the ground.

6. Recorder container

The attachment of the recorder container should comply with the specifications given in EUROCAE Document No ED-112A.

The container of a non-deployable recorder should be installed in the rear section of the aeroplane and in an area that increases the chances of the equipment surviving crash impact forces and the heat damage caused by a fire. However, it should not be installed where aft-mounted engines may crush the container during impact.

If two combination flight data and cockpit voice recorders (non-deployable) are installed, then the container of the recorder that is dedicated to the cockpit voice recorder function may be located near the flight crew compartment if at least one recorder is installed in the rear section.

7. Deployable recorder

If the recorder is deployable:

a. The automatic deployment capability should be available as long as the aeroplane is airborne; this should include cases in which electrical power is lost from the engines and APU.

In the event of a landing on water, the deployment should occur upon the immersion of the aeroplane in water; this means that the automatic deployment capability should remain available after contact with the water for a certain period in order to allow automatic deployment upon immersion;

b. The assessment of the effects of unintended deployment of the recorder in flight should include:

i. The effects on the continued safe flight and landing of the aeroplane. This assessment should cover the normal flight envelope of the aeroplane and include the following aspects:

— Potential impact on aeroplane structure, including flight control surfaces, and on systems; and

— Aerodynamic effects caused by the cavity created in the structure after deployment.

In order to address the effects of the impact on the aeroplane after deployment, the applicant should:

— either demonstrate that impact with the aeroplane is extremely improbable;

— or demonstrate continued safe flight and landing after impact damage, considering all flight phases. The demonstration should include the effect of the damage to the structure and systems on residual strength, stability, control and aeroelasticity:

  - Residual strength should be demonstrated in accordance with AMC 25.571, Section 10.(c); and
  - Freedom from aeroelastic instability should be demonstrated within the aeroelastic stability envelope as defined by CS 25.629(b)(2); and

ii. The effects on persons other than aeroplane occupants due to unintended deployment while the aeroplane is airborne, in particular the risk of serious or fatal injuries for persons being hit by the deployed part.

Several methods can be adopted in order to quantify the probability of causing serious or fatal injuries to the persons on the ground associated with unintended deployment of a recorder. However, the following variables should be used:

— The density of population, with reasonable correction factors related to time exposure and shielding such as being indoors and shielded by, for example, buildings, or being in a means of transportation; and

— The size and weight of the deployed part.

The probability of causing a serious or fatal injury is expressed as the combination of:

— the probability of an unintended deployment;

— the probability of a person being hit by the deployed part; and

— the probability that, if hit by the deployed part, a person will suffer serious or fatal injuries. This probability may be set to 1, as a conservative assumption; otherwise, the applicant may propose another value to EASA for approval.

c. The assessment of the effects of unintended deployment of the recorder on ground should include:

i. The risk of injuries caused to persons. This should include those who are involved in aeroplane maintenance, ground handling, taxiing, rescue operations, or emergency evacuation; and

ii. The effects on other aircraft and facilities.

In particular:

— A conspicuous placard or label that is visible from the outside of the aeroplane should be placed adjacent to the recorder deployment point;

— ICA and/or operational procedures should be provided to prevent injuries during maintenance and ground handling;

— Operational procedures should define the first actions to be taken by the flight crew when the recorder is no longer attached to the aeroplane, in order to address any risk to continued safe flight and landing and the possible effects on other aircraft and facilities;

— Procedures should address the precautions that should be taken to avoid injuries which could be caused by an unintended deployment during emergency evacuation;

— Information that addresses the precautions to be taken by search-and-rescue services after an accident should be publicly available; and

— The deployment mechanism should only release the recorder in one piece.

d. There may be a means to manually disengage the deployment capability when the aeroplane is not capable of moving under its own power; however, in this case, an alert should be provided to the flight crew during the pre-flight checks if the deployment capability is disengaged;

e. The deployable recorder installation should be such as to guarantee the highest probability of the deployment of the recorder in the event of an explosion or a collision. In particular, the installation and the performance of the deployment capability should be such that, in most cases of collision, the deployment of the recorder can take place before the deployment mechanism is damaged. However, the installation should be such that, to the extent possible, the recorder does not deploy in a non-catastrophic occurrence such as a hard landing or a tail strike.

f. The demonstration of compliance with CS 25.1457(e) should cover the whole flight envelope of the aeroplane, and additional trajectories that might be expected during the initial stages of an accident sequence.

The applicant may use the following Table 1 parameter ranges that have been observed during occurrences of loss of control of large aeroplanes:

Table 1: Parameter ranges

Parameter	Range	Unit
Pitch angle	+/- 60	°
Roll angle	+/- 60	°
Pitch rate	+/- 20	°/s
Roll rate	+/- 30	°/s
Yaw rate	+/- 20	°/s
Altitude	0 to 26 000 ft	ft
Speed	60 kt to V_D/M_D (design diving speed)	
Vertical speed	from maximum negative vertical speed at V_D/M_D to 0	

g. The alert that the recorder is no longer attached to the aeroplane should be provided as early as permitted by the principles of AMC 25.1322.

h. The deployment capability should function under all the environmental conditions for which the aeroplane is certificated.

i. The effect of exposure to environmental conditions (such as temperature, rain, lightning strikes, etc.) on the serviceability of the flight recorder and of its deployment capability should be addressed by design features and/or by ICA. ICA or operational procedures or both should also be provided such as to prevent maintenance and operational actions on the external surfaces of the aeroplane (such as painting, cleaning, application of de-/anti-icing fluids, etc.) from adversely affecting the serviceability of the flight recorder and its deployment capability.

j. In order to limit the effects on search-and-rescue services of an unintended activation of the emergency locator transmitter (ELT) that is integrated in the recorder:

— unintended deployment of the recorder should be classified at least as a major failure condition; and

— operational procedures should define the flight crew actions to be taken after they realise that an unintended recorder deployment has taken place, including actions to prevent an unnecessary search-and-rescue response.

Furthermore, in order to identify the conditions which triggered an unintended deployment of the recorder (including the ensuing activation of the ELT) or an activation of the ELT without deployment of the recorder, appropriate data should be recorded on board or transmitted to the ground to support the post-flight analysis.

AMC 25.1459(a)(4) and AMC 25.1459(b) are deleted, and a new AMC 25.1459 is created as follows:

AMC 25.1459

Flight Data Recorders

1. General

In showing compliance with CS 25.1459, the applicant should take into account EUROCAE Document No ED-112A 'MOPS for Crash Protected Airborne Recorder Systems'.

'Deployable recorder' designates a flight recorder that is installed on the aeroplane, and which is capable of automatically deploying from the aeroplane.

2. Automatic means to stop the recording after a crash impact

Refer to the Section of AMC 25.1457 titled 'Automatic means to stop the recording after a crash impact'.

3. Means for pre-flight checking of the recorder

The means for pre-flight checking of the recorder should be able to detect and indicate the following:

a. a loss of electrical power to the flight recorder system;

b. a failure of the data acquisition and processing stages;

c. a failure of the recording medium and/or drive mechanism; and

d. a failure of the recorder to store the data in the recording medium as shown by checks of the recorded data including, as far as is reasonably practicable for the storage medium concerned, its correct correspondence with the input data.

4. Recorder container

Refer to the Section of AMC 25.1457 titled 'Recorder container'.

5. Combination recorder

Refer to the Section of AMC 25.1457 titled 'Combination recorder'.

6. Deployable recorder

Refer to the Section of AMC 25.1457 titled 'Deployable recorder'