United Kingdom
Civil Aviation Authority
Official Record Series 9

CAA Decision to adopt AMC and GM for UK Reg (EU) No.965/2012 pursuant to Article 76(3) UK Reg (EU) 2018/1139

DECISION No. 45

Publication date: 19 December 2024

Decision amending Acceptable Means of Compliance (AMC) and Guidance Material (GM) for UK Reg (EU) No 965/2012 Annex I Definitions, Annex IV Part-CAT, Annex V Part-SPA, Annex VI Part-NCC, Annex VII Part- NCO and Annex VIII Part-SPO regarding:

- **Definitions**
- **Aircraft tracking system – aeroplanes,**
- **Location of an Aircraft in Distress - aeroplanes,**
- **Emergency Locator Transmitter (ELT),**
- **Flight over water & survival equipment helicopters,**
- **Life rafts, survival ELTs, and survival equipment on extended overwater flights,**
- **Flight Data Monitoring (FDM) Programme**

Background

CAA UK-EU Transition Decision No. 1, dated 22 December 2020, adopted a form of Acceptable Means of Compliance (**"AMC"**) as means by which the requirements in Assimilated Regulation (EU) No 965/2012 (**"UK Reg (EU) No 965/2012" – "the Air Operations Regulation"**) could be met. That decision also adopted Guidance Material (**"GM"**) as non-binding explanatory and interpretation material on how to achieve the requirements in **UK Reg (EU) No 965/2012**. The CAA has decided to adopt revised AMC and GM in respect of **UK Reg (EU) No 965/2012**.

Decision

1. The CAA, under Article 76(3) of Assimilated Regulation (EU) 2018/1139, has decided to adopt the AMC and GM attached at Schedule 1.

2. This AMC and GM supplements and/or replaces that which was adopted for **UK Reg (EU) No 965/2012 Annex IV Part-CAT, Annex V Part-SPA, Annex VI Part-NCC, Annex VII Part- NCO and Annex VIII Part-SPO** by CAA UK-EU Transition Decision No. 1 dated 22 December 2020.

This Decision will remain in force unless revoked or amended by the CAA.

Definitions

All references to *Regulations* are to the UK law bearing that title or number, being Assimilated Regulations.

Rob Bishton
For the Civil Aviation Authority and the United Kingdom

Date of Decision: 19 December 2024

Date of Decision Coming into force: 19 December 2024

Schedule 1

Includes the Acceptable Means of Compliance (AMC) and Guidance Material (GM) documents referenced below.

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

(a) ~~Text to be deleted is shown struck through~~;

(b) New text is highlighted in grey;

(c) ~~Text to be deleted is shown struck through~~ followed by the replacement text which is highlighted in grey.

Point (g) of GM1 Annex I Definitions is replaced by the following and points (za), (zb), (zc), (zd), (:

GM1 Annex I Definitions

DEFINITIONS FOR TERMS USED IN ACCEPTABLE MEANS OF COMPLIANCE AND GUIDANCE MATERIAL

For the purpose of Acceptable Means of Compliance and Guidance Material to Regulation (EU) No 965/2012, the following definitions should apply:

(a) 'Abnormal flight behaviour' means, in the context of an aircraft tracking system, an event affecting a flight:

(1) which is outside of the parameters defined by the operator for normal operation or which indicates an obvious deviation from normal operation; and

(2) for which the operator has determined that it poses a risk for the safe continuation of the flight or for third parties.

(aa) 'Accuracy' means, in the context of PBN operations, the degree of conformance between the estimated, measured or desired position and/or the velocity of a platform at a given time, and its true position or velocity. Navigation performance accuracy is usually presented as a statistical measure of system error and is specified as predictable, repeatable and relative.

(b) 'Aircraft-based augmentation system (ABAS)' means a system that augments and/or integrates the information obtained from the other GNSS elements with information available on board the aircraft. The most common form of ABAS is receiver autonomous integrity monitoring (RAIM).

(ba) 'Airport moving map display (AMMD)' means a software application that displays an airport map on a display device and uses data from a navigation source to depict the aircraft current position on this map while the aircraft is on the ground.

(c) 'Area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

(d) 'Availability' means, in the context of PBN operations, an indication of the ability of the system to provide usable service within the specified coverage area and is defined as the portion of time during which the system is to be used for navigation during which reliable navigation information is presented to the crew, autopilot or other system managing the flight of the aircraft.

(e) 'Committal point' means the point in the approach at which the pilot flying decides that, in the event of an engine failure being recognised, the safest option is to continue to the elevated final approach and take-off area (elevated FATO).

(f) 'Continuity of function' means, in the context of PBN operations, the capability of the total system, comprising all elements necessary to maintain aircraft position within the defined airspace, to perform its function without non-scheduled interruptions during the intended operation.

(fa) 'Controlled portable electronic device (C-PED)' means a PED subject to administrative control by the operator that uses it. This includes, inter alia, tracking the allocation of the devices to specific aircraft or persons and ensuring that no unauthorised changes are made to the hardware, software, or databases. C-PEDs can be assigned to the category of non-intentional transmitters or T-PEDs.

(fb) 'EFB installed resources' means certified EFB hardware components external to the EFB host platform itself, such as input/output components (installed remote displays, keyboards, pointing devices, switches, etc.) or a docking station.

(fc) 'EFB mounting device' means an aircraft certified part that secures a portable or installed EFB, or EFB system components.

(fd) 'EFB system supplier' means the company responsible for developing, or for having developed, the EFB system or part of it.

(g) 'Emergency locator transmitter (ELT)' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies ~~and, depending on application, may be activated by impact or may be manually activated.~~ for the purpose of search and rescue (SAR). The ELT may be activated by various conditions (e.g. manual activation, automatic detection of a distress situation, automatic detection of a crash impact, automatic detection of aircraft immersion into water, etc.). The ELT signals usually include signals that are intended to be detected by the international COSPAS-SARSAT programme, and homing signals that are intended to guide SAR teams to the ELT.

(h) 'Exposure time' means the actual period during which the performance of the helicopter with the critical engine inoperative in still air does not guarantee a safe forced landing or the safe continuation of the flight.

(i) 'Fail-operational flight control system' means a flight control system with which, in the event of a failure below alert height, the approach, flare and landing can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system.

(j) 'Fail-operational hybrid landing system' means a system that consists of a primary fail-passive automatic landing system and a secondary independent guidance system enabling the pilot to complete a landing manually after failure of the primary system.

(k) 'Fail-passive flight control system': a flight control system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but the landing is not completed automatically. For a fail-passive automatic flight control system the pilot assumes control of the aeroplane after a failure.

(l) 'Flight control system' in the context of low visibility operations means a system that includes an automatic landing system and/or a hybrid landing system.

(m) 'HEMS dispatch centre' means a place where, if established, the coordination or control of the helicopter emergency medical service (HEMS) flight takes place. It may be located in a HEMS operating base.

(n) 'Hybrid head-up display landing system (hybrid HUDLS)' means a system that consists of a primary fail-passive automatic landing system and a secondary independent HUD/HUDLS enabling the pilot to complete a landing manually after failure of the primary system.

(na) 'Installed EFB' means an EFB host platform installed in an aircraft, capable of hosting type A and/or type B EFB applications. It may also host certified applications. It is an aircraft part, and, is therefore, covered by the aircraft airworthiness approval.

(o) 'Integrity' means, in the context of PBN operations, the ability of a system to provide timely warnings to users when the system should not be used for navigation.

(p) 'Landing distance available (LDAH)' means the length of the final approach and take-off area plus any additional area declared available by the State of the aerodrome and suitable for helicopters to complete the landing manoeuvre from a defined height.

(q) 'Landing distance required (LDRH)', in the case of helicopters, means the horizontal distance required to land and come to a full stop from a point 15 m (50 ft) above the landing surface.

(r) 'Lateral navigation' means a method of navigation which permits aircraft operation on a horizontal plane using radio navigation signals, other positioning sources, external flight path references, or a combination of these.

(ra) 'mass' and 'weight': In accordance with ICAO Annex 5 and the International System of Units (SI), both terms are used to indicate the actual and limiting masses of aircraft, the payload and its constituent elements, the fuel load, etc. These are expressed in units of mass (kg), but in most approved flight manuals and other operational documentation, these quantities are published as weights in accordance with the common language. In the ICAO standardised system of units of measurement, a weight is a force rather than a mass. Since the use of the term 'weight' does not cause any problem in the day-to-day handling of aircraft, its continued use in operational applications and publications is acceptable.

(s) 'Maximum structural landing mass' means the maximum permissible total aeroplane mass upon landing under normal circumstances.

(t) 'Maximum zero fuel mass' means the maximum permissible mass of an aeroplane with no usable fuel. The mass of the fuel contained in particular tanks should be included in the zero fuel mass when it is explicitly mentioned in the aircraft flight manual.

(ta) 'Miscellaneous (non-EFB) software applications' means non-EFB applications that support function(s) not directly related to the tasks performed by the flight crew in the aircraft.

(u) 'Overpack', for the purpose of transporting dangerous goods, means an enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage.

(v) 'Package', for the purpose of transporting dangerous goods, means the complete product of the packing operation consisting of the packaging and its contents prepared for transport.

(w) 'Packaging', for the purpose of transporting dangerous goods, means receptacles and any other components or materials necessary for the receptacle to perform its containment function.

(x) 'Personal locator beacon (PLB)' is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.

(xa) 'Ramp inspection tool' means the IT application including a centralised database used by all stakeholders to store and exchange data related to ramp inspections.

(y) 'Receiver autonomous integrity monitoring (RAIM)' means a technique whereby a GNSS receiver/processor determines the integrity of the GNSS navigation signals using only GNSS signals or GNSS signals augmented with altitude. This determination is achieved by a consistency

check among redundant pseudo-range measurements. At least one satellite in addition to those required for navigation has to be in view for the receiver to perform the RAIM function.

(z) 'Rotation point (RP)' means the point at which a cyclic input is made to initiate a nose-down attitude change during the take-off flight path. It is the last point in the take-off path from which, in the event of an engine failure being recognised, a forced landing on the aerodrome can be achieved.

(za) 'Runway condition assessment matrix (RCAM)' means a matrix that allows the assessment of the runway condition code (RWYCC), using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action.

(zb) 'Runway condition code (RWYCC)' means a number, to be used in the runway condition report (RCR), that describes the effect of the runway surface condition on aeroplane deceleration performance and lateral control.

(zc) 'Runway surface condition' means a description of the condition of the runway surface used in the RCR which establishes the basis for the determination of the RWYCC for aeroplane performance purposes.

(zd) 'Runway surface condition descriptors' means one of the following elements on the surface of the runway:

(1) 'compacted snow': snow that has been compacted into a solid mass such that aeroplane tyres, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface;

(2) 'dry snow': snow from which a snowball cannot readily be made;

(3) 'frost': ice crystals formed from airborne moisture on a surface whose temperature is at or below freezing; frost differs from ice in that the frost crystals grow independently and, therefore, have a more granular texture;

(4) 'ice': water that has frozen or compacted snow that has transitioned into ice in cold and dry conditions;

(5) 'slush': snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully;

(6) 'standing water': water of depth greater than 3 mm;

(7) 'Wet ice': ice with water on top of it or ice that is melting.

(8) 'wet snow': snow that contains enough water to be able to make a well compacted, solid snowball, but water will not squeeze out.

(aaa) 'Slippery wet runway' means a wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.

(ab) 'Touch down and lift-off area (TLOF)' means a load-bearing area on which a helicopter may touch down or lift off.

(ac) 'Transmitting PED (T-PED)' means a portable electronic device (PED) that has intentional radio frequency (RF) transmission capabilities.

(ad) 'Vertical navigation' means a method of navigation which permits aircraft operation on a vertical flight profile using altimetry sources, external flight path references, or a combination of these.

(ae) 'Viewable stowage' means a non-certified device that is attached to the flight crew member (e.g. with a kneeboard) or to an existing aircraft part (e.g. using suction cups), and is intended to hold charts or to hold low-mass portable electronic devices that are viewable by the flight crew members at their assigned duty stations

GM2 is replaced by the following:

GM2 Annex I Definitions ~~for terms used in Annex II to VIII~~

ABBREVIATIONS

The following abbreviations are used in the Annexes to this Regulation:

(…)	
AIREP	air-report
(…)	
ALAP	aerodrome landing analysis programme
(…)	
ALD	actual landing distance
(…)	
CSP	communication service provider
ELT	emergency locator transmitter
ELT(AD)	emergency locator transmitter (automatically deployable)
ELT(AF)	emergency locator transmitter (automatic fixed)
ELT(DT)	emergency locator transmitter (distress tracking)
ELT(AP)	emergency locator transmitter (automatic portable)
ELT(S)	survival emergency locator transmitter
(…)	
LDF	landing distance factor
(…)	
LDTA	landing distance at time of arrival
(…)	
PBCS	performance-based communication and surveillance
(…)	
PFC	porous friction course
(…)	
RCAM	runway condition assessment matrix
(…)	
RCP	required communication performance
(…)	
RCR	runway condition report
(…)	
RSP	required surveillance performance
(…)	
RWYCC	runway condition code
(…)	

The following GM20 is inserted:

GM20 Annex I Definitions

CONTAMINATED RUNWAY

As the runway condition is reported in runway thirds, a significant portion of the runway surface area is more than 25 % of one third of the runway surface area within the required length and width being used.

The runway length being used in this context is the physical length of runway available, typically from the start of the take-off run available (TORA) in one direction to the start of the TORA in the opposite direction. When the runway is shortened by a notice to airmen (NOTAM) — for example, due to works, or the aerodrome operator is not able to clear the full length of the runway and closes part of it for operations, the length being used is that declared in the NOTAM and the 'reduced runway length' that declared in the RCR.

The runway width being used in this context is the physical width of the runway (between the runway edge lights), or the 'cleared width' if reported in the RCR. It is not intended that 25 % coverage is reported when contaminants affect only the runway edges after runway cleaning. Runway inspectors are instructed to focus on the area around the wheel tracks when reporting the contaminant type, coverage and depth.

The following GM21 is inserted:

GM21 Annex I Definitions

DRY RUNWAY/WET RUNWAY

The 'area intended to be used' means the area of the runway that is part of the TORA, accelerate and stop distance available (ASDA) or landing distance available (LDA) declared in the aeronautical information publication (AIP) or by a NOTAM.

The following GM22 is inserted:

GM22 Annex I Definitions

RUNWAY CONDITION CODE (RWYCC)

The purpose of the runway condition code (RWYCC) is to permit an operational aeroplane landing performance calculation by the flight crew.

The following GM23 is inserted:

GM23 Annex I Definitions

RUNWAY SURFACE CONDITION(S)

(a) The runway surface conditions used in the RCR establish a common language between the aerodrome operator, the aeroplane manufacturer and the aeroplane operator.

(b) Aircraft de-icing chemicals and other contaminants are also reported but are not included in the list of runway surface condition descriptors because their effect on the runway surface friction characteristics and the RWYCC cannot be evaluated in a standardised manner.

The following GM24 is inserted:

GM24 Annex I Definitions

RUNWAY SURFACE CONDITION DESCRIPTORS — GENERAL

The runway surface condition descriptors are used solely in the context of the RCR and are not intended to supersede or replace any existing World Meteorological Organization (WMO) definitions.

RUNWAY SURFACE CONDITION DESCRIPTORS — FROST

(a) Freezing refers to the freezing point of water (0 °C).

(b) Under certain conditions, frost can cause the surface to become very slippery, and it is then reported appropriately as downgraded RWYCC.

RUNWAY SURFACE CONDITION DESCRIPTORS — STANDING WATER

Running water of depth greater than 3 mm is reported as ‘standing water’ by convention.

RUNWAY SURFACE CONDITION DESCRIPTORS – WET ICE

Freezing precipitation can lead to runway conditions associated with wet ice from an aeroplane performance point of view. Wet ice can cause the surface to become very slippery. It is then reported appropriately as downgraded RWYCC.

The following GM25 is inserted:

GM25 Annex I Definitions

LANDING DISTANCE AT TIME OF ARRIVAL

The landing distance data to be used for a landing performance assessment at time of arrival allow to establish an operationally achievable landing distance from 50ft above runway threshold to full stop that takes into account AFM procedures for final approach and landing and is provided as a function of the main influence parameters such as aeroplane mass and configuration, pressure altitude, wind, outside air temperature, runway slope and approach speed increments. It may be provided for use of automation such as autobrakes and autoland and may account for reverse thrust use. As the landing distance at time of arrival is the unfactored minimum landing distance achievable for the assumed conditions, an appropriate margin should be applied to this distance to determine the minimum LDA necessary for a safe stop.

The following GM26 is inserted:

GM26 Annex I Definitions

SLIPPERY WET RUNWAY

(a) The surface friction characteristics of the runway are considered degraded when below the minimum standards.

(b) A portion of runway in the order of 100 m long may be considered significant.

The following GM27 is inserted:

GM27 Annex I Definitions

FLIGHT RECORDER

A flight recorder may be crash-protected or lightweight and may be deployable or not. Crash-protected flight recorders are capable of withstanding very severe crash conditions such as those encountered during some accidents of large aeroplanes and large helicopters. Crash-protected flight recorders comprise one or more of the following systems: a flight data recorder (FDR), a cockpit voice recorder (CVR), an airborne image recorder (AIR), or a data link recorder (DLR). Lightweight flight recorders are usually designed to meet less demanding requirements than crash-protected flight recorders, which allows them to be lighter. A non-deployable flight recorder is permanently attached to the aircraft. A deployable flight recorder includes a part that is capable of automatically deploying from the aircraft.

AMC1 CAT.GEN.MPA.205 is replaced by the following:

AMC1 CAT.GEN.MPA.205 Aircraft tracking system — Aeroplanes

EQUIPMENT, PERFORMANCE AND PROCEDURES WHEN AIRCRAFT TRACKING IS REQUIRED

(a) Automatic tracking of aeroplane position

The aircraft tracking system should rely on equipment capable of automatically detecting and transmitting a position report to the aircraft operator, except if (d)(2) applies.

(b) Position reporting period

The tracking of an individual flight should provide a position report at time intervals which do not exceed 15 minutes.

(c) Content of position reports

Each position report should contain at least the latitude, the longitude and the time of position determination and whenever available, an indication of the aeroplane altitude, except that for each flight:

(1) One of the position reports may contain only time-stamped data indicating that the aeroplane has left the gate;

(2) One of the position reports may contain only time-stamped data indicating that the aeroplane has become airborne;

(3) One of the position reports may contain only time-stamped data indicating that the aeroplane has landed; and

(4) One of the position reports may contain only time-stamped data indicating that the aeroplane has reached the gate.

(d) Source of position data

The data contained in a position report may come from:

(1) ATC surveillance systems, if the ATC surveillance data source is capable of providing this data with a delay equal to or less than 10 minutes;

(2) the flight crew, if the planned flight duration is less than two position reporting periods;

(3) aeroplane systems. In that case:

(i) the source of time, latitude and longitude data should be the navigation system of the aeroplane or an approved GNSS receiver;

(ii) the source of altitude data should be:

(A) the same source as for time, latitude and longitude data, or

(B) an approved source of pressure altitude; and

(iii) the delivery time of position reports from the aeroplane to the operational control over the flight should, to the extent possible, not exceed 10 minutes; or

(4) any data source when the position report is of a type designated by (c)(1), (c)(2), (c)(3) or (c)(4). In that case, the delivery time of position reports from the data source to the operational control over the flight should, to the extent possible, not exceed 10 minutes.

(e) Temporary lack of aircraft tracking data

Aircraft tracking data may be incomplete due to a temporary or unexpected issue prior to or during the flight. However, the operator should:

(1) identify any loss of aircraft tracking data which is not due to a temporary issue, and

(2) address any systematic lack of aircraft tracking data affecting a given aeroplane or a given route in a timely manner.

(f) Operational control over the flights

When abnormal flight behaviour is suspected, this should be checked and acted upon without delay.

(g) Recording of aircraft tracking data during normal operation

When the tracking of a flight is required, all related aircraft tracking data should be recorded on the ground, including position data from ATC surveillance systems when they are used. The aircraft tracking data of a given flight should be retained until confirmation that the flight is completed and no accident or serious incident occurred.

(h) Preserving aircraft tracking data after an accident or a serious incident

Following an accident or a serious incident, the operator should retain the aircraft tracking data of the involved flight for at least 30 days. In addition, the operator should be capable of providing a copy of this data without delay and in an electronic format that is human-readable using a common text file editor.

(i) Procedures

The operator should establish procedures describing its aircraft tracking system, including the identification of abnormal flight behaviour and the notification of the designated ATS unit (i.e.the ATS unit that is responsible for providing the alerting service in the airspace where the aircraft is believed to be), when appropriate. These procedures should be integrated with the emergency response plan of the operator.

GM6 CAT.GEN.MPA.205 is replaced by the following:

GM6 CAT.GEN.MPA.205 Aircraft tracking system — Aeroplanes

PROVIDING CONTACT INFORMATION TO COMPETENT AIR NAVIGATION SERVICE PROVIDERS

A solution for the operator to make the necessary contact information available to all competent air navigation service providers (ANSPs) could be to register to the global OPS Control Directory of ICAO. Another ~~One~~ possible way ~~of ensuring that contact information has been made available to all the competent air navigation service providers~~ is to provide in the ATS flight plan (item 18 'Other information') information sufficient to contact the on-duty staff of the aircraft operator.

The following AMC1 CAT.GEN.MPA.210 is inserted:

AMC1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes

PERFORMANCE OF THE AIRBORNE SYSTEM, TRANSMISSION SERVICE, AND OPERATIONAL PROCEDURES

(a) Performance of the airborne system

The airborne system is the organised set of airborne applications and airborne equipment used to comply with point **CAT.GEN.MPA.210** and should:

(1) be approved in accordance with the applicable airworthiness requirements; and

(2) comply with the Certification Specifications for Airborne Communications, Navigation and Surveillance (CS-ACNS) issued by the CAA, or equivalent.

(b) Transmission service

If the airborne system relies on other equipment than emergency locator transmitters (ELTs) for transmitting the information needed to comply with point **CAT.GEN.MPA.210**, the provider of the transmission service should be a surveillance service provider that is certified in accordance with UK Regulation (EU) 2017/373 (the 'ATM/ANS Regulation').

(c) Flight crew procedures

The operator should establish flight crew procedures for using the airborne system, including manual activation and manual deactivation of that system. These procedures should ensure that the flight crew manually activate the airborne system only if a search and rescue (SAR) response is needed or anticipated, and that they inform the relevant ATS unit in a timely manner when they manually deactivate or disable the airborne system to stop data transmission.

(d) Operator's procedures

The operator should establish procedures:

(1) for assessing whether an aircraft is likely to be in a state of emergency and

(2) for informing the designated ATS unit responsible for providing the alerting service in the airspace where the aircraft is believed to be:

(i) when a state of emergency is identified, and

(ii) when a state of emergency no longer exists.

(3) for updating the operational contact details of the organisation within the OPS Control Directory.

(e) Limiting the effects of false alerts

To reduce the frequency and effects of false alerts that are caused by the airborne system, the operator should:

(1) establish procedures for disabling any of the required functions of the airborne system;

(2) consider the airborne system inoperative if, during a flight, there were several occurrences of undesirable automatic activation of the airborne system; and

(3) analyse occurrences of undesirable (manual and automatic) activation of the airborne system to determine their probable cause; the records of such analyses should be retained for at least 12 months and provided to the CAA on request.

The following GM1 CAT.GEN.MPA.210 is inserted:

GM1 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes

OBJECTIVES AND IMPLEMENTATION

(a) The purpose of point **CAT.GEN.MPA.210** is to have a high probability of promptly and accurately locating the accident site after an accident during which the aircraft is severely damaged, irrespective of the accident location and survivability (hence, the terms 'automatic', 'robust', and 'accurately' are used in **CAT.GEN.MPA.210**). The scope of point **CAT.GEN.MPA.210** includes non-survivable accidents. Means compliant with point **CAT.GEN.MPA.210** are expected to:

(1) quickly inform the SAR authority concerned that an accident occurred or is about to occur and provide them with information that can easily be used for locating the accident site; and

(2) help the safety investigation authority concerned to locate the accident site and the aircraft wreckage so that they can collect evidence in a reasonable time frame.

Therefore, if an aircraft in the scope of **CAT.IDE.A.280** complies with **CAT.GEN.MPA.210**, this aircraft is not required to be equipped with an automatic ELT. Similarly, if an aircraft in the scope of **CAT.IDE.A.285** complies with **CAT.GEN.MPA.210**, this aircraft is not required to be equipped with a 8.8-kHz underwater locating device (ULD).

(b) The airborne system used to comply with point **CAT.GEN.MPA.210** could rely, for example, on an emergency locator transmitter of a distress tracking type (ELT(DT)), on an automatic deployable flight recorder (ADFR), or on the transmission of position reports at short time intervals (high-rate tracking (HRT)).

(c) Subpart A of the Certification Specifications for Airborne Communications, Navigation and Surveillance (CS-ACNS) contains general conditions applicable to the airborne system. Subpart E of CS-ACNS contains specific conditions for meeting the purpose of point **CAT.GEN.MPA.210**.

(d) If other transmitting equipment than an ELT is used by the airborne system for complying with **CAT.GEN.MPA.210**, AMC1 CNS.OR.100 to Part-CNS of the ATM/ANS Regulation contains conditions applicable to the provider of the transmission service that is used by that equipment.

(e) While AMC1 CNS.OR.100 only addresses the transmission of information to the SAR authorities, the capability to also transmit that information to the operator is advisable.

The following GM2 CAT.GEN.MPA.210 is inserted:

GM2 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes

EXPLANATION OF TERMS

The terms used in point **CAT.GEN.MPA.210** and **AMC1 CAT.GEN.MPA.210** are explained below for better understanding:

— 'accident during which the aeroplane is severely damaged' refers to an accident during which the aeroplane sustains damage or structural failure that adversely affects its structural strength, performance, or flight characteristics, and would normally require a major repair or replacement of the affected component, except for:

  — an engine failure or damage to the engine, when the damage is limited to a single engine (including its cowlings or accessories);

  — damage limited to propellers, wing tips, antennas, probes, vanes, tyres, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aeroplane skin (such as small dents or puncture holes);

  — minor damage to the landing gear; and

  — damage resulting from hail or bird strike (including holes in the radome);

— 'accurately determine… the location of the point of end of flight' means locating the point of end of flight with a position accuracy that is sufficient for safety investigation purposes, and when the accident conditions are survivable, also for SAR purposes;

— 'activation of the airborne system' means the transition of the airborne system from another state to the activated state;

— 'ATM/ANS Regulation' refers to UK Regulation (EU) 2017/373 of 1 March 2017 or any later UK regulation laying down common requirements for providers of air traffic management/air navigation services;

— 'automatic means' refers to means that do not require any human action to perform their intended function;

— 'automatic activation of the airborne system' means activation of the airborne system that is automatically triggered by airborne equipment;

— 'deactivation of the airborne system' means the transition of that system from the activated state to another state;

— 'distress tracking repository (DTR)' means a centrally managed facility that would function as a single point of access to the ADT position;

— 'point of end of flight' means, depending on the nature of the accident, the point where the aircraft crashed into land or water, or landed on land or water, or was destroyed;

— 'required functions of the airborne system' refers to the 'functions of the system', (defined in the CS-ACNS), that are applicable to locating an aircraft in distress;

— 'robust and automatic means refers to means designed to work properly under the circumstances of survivable accidents, and under the circumstances of most non-survivable accidents;

— 'activate the airborne system ' means that the airborne system transmits signals to the DTR to enable the determination of the location of the point of end of flight. Activation of the airborne system does not automatically alert SAR services.; and

— 'transmission service' refers to the service that makes the information sent by the airborne system available to the relevant stakeholders.

The following GM3 CAT.GEN.MPA.210 is inserted:

GM3 CAT.GEN.MPA.210 Location of an aircraft in distress — Aeroplanes

Requests for focal point registration should be sent to aircrafttracking@icao.int. The operator is to provide the operator is to provide the following information.

User Category	Focal Point information	Organizational information
Operator	Full name and Email address	3-letter designator(s) in use by the operator Telephony designator(s) in use by the operator Operator name

Upon receipt of this information, ICAO will set up the focal point account in the OPS Control Directory and allocate to the focal point responsibility for the relevant 3-letter designator, FIR or RCC as appropriate.

AMC2 CAT.IDE.A.280 is replaced by the following:

AMC2 CAT.IDE.A.280 Emergency locator transmitter (ELT)

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT, that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT(AP) does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on

the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic deployable (ELT(AD)) ~~a~~ .An ELT that is rigidly attached to the aircraft before the crash and that is automatically ~~ejected~~ deployed and activated by an impact, and, in some cases, also by ~~hydrostatic~~ water sensors. ~~Manual deployment is also provided.~~ This type of ELT should float in water and is intended to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

(4) Distress tracking ELT (ELT(DT)). An ELT that is designed to be activated upon automatic detection of conditions indicative of a distress situation. This type of ELT is intended to provide information prior to the crash, to aid SAR teams in locating the crash site and/or any survivor(s).

~~(4)~~(5) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).

(b) To minimise the possibility of damage in the event of a crash impact, the ELT(AF), ELT(AP), ELT(AD), or ELT(DT) should be rigidly fixed to the aircraft structure, as far aft as practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Unless an automatic ELT is installed, the ELT(DT) should have capability C (crash survivability) and capability H1 (121.5-MHz homing signal) as specified in EUROCAE ED-62B 'Minimum Operational Performance Standard for Aircraft Emergency Locator Transmitters', dated December 2018, or in any later equivalent standard that is produced by EUROCAE.

~~(c)~~ (d) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III communications systems and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

GM1 CAT.IDE.A.280 is replaced by the following:

GM1 CAT.IDE.A.280 Emergency locator transmitter (ELT)

TERMINOLOGY

~~'ELT' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.~~

(a) An 'automatic ELT' means an ELT(AF), ELT(AP), or ELT(AD). Other types of ELTs are not considered 'automatic ELTs'.

(b) A 'water sensor' means a sensor that detects water immersion, including at low depth.

Note: This terminology also applies to GM1 NCC.IDE.A.215, GM1 NCC.IDE.H.215, GM1 NCO.IDE.A.170, GM1 NCO.IDE.H.170, GM1 SPO.IDE.A.190, and GM1 SPO.IDE.H.190.

The following GM2 CAT.IDE.A.280 is inserted:

GM2 CAT.IDE.A.280 Emergency locator transmitter (ELT)

ADDITIONAL GUIDANCE

(a) It is advisable to install automatic ELTs that transmit encoded position data and that meet the operational performance requirements of EUROCAE Document ED-62B, or RTCA DO-204B, or any later equivalent standard.

(b) Guidance material for the inspection of an ELT can be found in FAA Advisory Circular (AC) 91-44A 'Installation and Inspection Procedures for Emergency Locator Transmitters and Receivers', Change 1, dated February 2018.

The following AMC1 CAT.IDE.A.285(f) is inserted:

AMC2 CAT.IDE.A.285(f) Flight over water

ROBUST AND AUTOMATIC MEANS TO LOCATE THE POINT OF END OF FLIGHT AFTER AN ACCIDENT

The 'robust and automatic means to accurately determine, following an accident where the aeroplane is severely damaged, the location of the point of end of flight' should comply with point **CAT.GEN.MPA.210.**

AMC2 CAT.IDE.H.280 is replaced by the following:

AMC2 CAT.IDE.H.280 Emergency locator transmitter (ELT)

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic Fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.

(2) Automatic Portable (ELT(AP)). An automatically activated ELT, which is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored in the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic ~~D~~deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ~~ejected~~ deployed and activated by an impact, and, in some cases, also by ~~hydrostatic~~ water sensors. ~~Manual deployment is also provided~~. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

~~(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).~~

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III Communications Systems and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

GM1 CAT.IDE.H.280 is replaced by the following:

GM1 CAT.IDE.H.280 Emergency locator transmitter (ELT)

TERMINOLOGY

~~'ELT' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.~~

(a) An 'automatic ELT' means an ELT(AF), ELT(AP), or ELT(AD). Other types of ELTs are not considered 'automatic ELTs'.

(b) A 'water sensor' means a sensor that detects water immersion, including at low depth.

The following GM2 CAT.IDE.H.280 is inserted:

GM2 CAT.IDE.H.280 Emergency locator transmitter (ELT)

ADDITIONAL GUIDANCE

(a) It is advisable to install automatic ELTs that transmit encoded position data and that meet the operational performance requirements of EUROCAE Document ED-62B, or RTCA DO-204B, or any later equivalent standard.

(b) Guidance material for the inspection of an ELT can be found in FAA Advisory Circular (AC) 91-44A 'Installation and Inspection Procedures for Emergency Locator Transmitters and Receivers', Change 1, dated February 2018.

AMC 1 CAT.IDE.H.300(b)(3) & CAT.IDE.305(b) is replaced by the following:

AMC1 CAT.IDE.H.300(b)(3) & CAT.IDE.H.305(b) Flight over water & Survival equipment

SURVIVAL ELT

(a) The survival ELT (ELT(S)) is an ELT removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed to be tethered either to a life raft or a survivor.

(b) An ELT(AP) may be used to replace one required ELT(S) provided that it meets the ELT(S) requirements. A water-activated ELT(S) is not an ELT(AP).

AMC1 SPA.HOFO.145 is replaced by the following:

AMC1 SPA.HOFO.145 Flight data monitoring (FDM) programme

FDM PROGRAMME

Refer to **AMC1 ORO.AOC.130** for a description of the FDM programme.

~~Note: Appendix 1 to AMC1 ORO.AOC.130 is not valid for helicopters.~~

GM2 SPA.HOFO.145 is replaced by the following:

GM2 SPA.HOFO.145 Flight data monitoring (FDM) programme

~~FDM~~ ADDITIONAL GUIDANCE AND INDUSTRY GOOD PRACTICE

(a) Additional guidance material for the establishment of an FDM programme can be ~~is~~ found in:

~~(a)~~ (1) International Civil Aviation Organization (ICAO) Doc 10000 — Manual on Flight Data Analysis Programmes (FDAP); and

~~(b)~~ (2) UK CAA Civil Aviation Publication (CAP) 739 — Flight Data Monitoring.

(b) Examples of industry good practice for the establishment of FDM can be found in:

(1) HeliOffshore— Helicopter Flight Data Monitoring (HFDM) Recommended Practice for Oil and Gas Passenger Transport Operations, Version 1.0, September 2020 (HO-HFDM-RP-v1.0);

(2) European Operators Flight Data Monitoring forum (EOFDM) — Preparing a memorandum of understanding for an FDM programme;

(3) EOFDM — Best practice document: Key performance indicators for a Flight Data Monitoring programme; and

(4) EOFDM — 'Breaking the silos', Fully integrating Flight Data Monitoring into the Safety Management System.

(c) ~~The following table~~ Table 1 provides examples of FDM ~~events~~ definitions that may be further developed using operator- and helicopter-specific limits. This ~~The~~ table is considered illustrative and non-exhaustive. Appendix 5 to HO-HFDM-RP-v1.0 contains other examples of FDM event definitions. More important than the number of FDM event definitions that are programmed in the FDM software is that those definitions cover, as much as practicable, the operational risks that have been identified by the operator.

Table 1 — Examples of FDM events and their definitions

Event title/description	Parameters required	Comments
Ground		
Outside air temperature (OAT) high — Operating limits	OAT	To identify when the helicopter is operated at the limits of OAT.
Sloping-ground high-pitch attitude	Pitch attitude, ground switch (similar)	To identify when the helicopter is operated at the slope limits.
Sloping-ground high-roll attitude	Roll attitude, ground switch (similar)	To identify when the helicopter is operated at the slope limits.
Rotor brake on at an excessive number of rotations (main rotor speed) (NR)	Rotor brake discreet, NR	To identify when the rotor brake is applied at too high NR.
Ground taxiing speed — max	Ground speed (GS), ground switch (similar)	To identify when the helicopter is ground taxied at high speed (wheeled helicopters only).
Air taxiing speed — max	GS, ground switch (similar), radio altitude (Rad Alt)	To identify when the helicopter is air taxied at high speed.
Excessive power during ground taxiing	Total torque (Tq), ground switch (similar), GS	To identify when excessive power is used during ground taxiing.
Pedal — max left-hand (LH) and right-hand (RH) taxiing	Pedal position, ground switch (similar), GS or NR	To identify when the helicopter flight controls (pedals) are used to excess on the ground. GS or NR to exclude control test prior to rotor start.
Excessive yaw rate on ground during taxiing	Yaw rate, ground switch (similar), or Rad Alt	To identify when the helicopter yaws at a high rate when on the ground.
Yaw rate in hover or on ground	Yaw rate, GS, ground switch (similar)	To identify when the helicopter yaws at a high rate when in a hover.
High lateral acceleration (rapid cornering)	Lateral acceleration, ground switch (similar)	To identify high levels of lateral acceleration, when ground taxiing, that indicate high cornering speed.
High longitudinal acceleration (rapid braking)	Longitudinal acceleration, ground switch (similar)	To identify high levels of longitudinal acceleration, when ground taxiing, that indicate excessive braking.
Cyclic-movement limits during taxiing (pitch or roll)	Cyclic stick position, ground switch (similar), Rad Alt, NR or GS	To identify excessive movement of the rotor disc when running on ground. GS or NR to exclude control test prior to rotor start.
Excessive longitudinal and lateral cyclic rate of movement on ground	Longitudinal cyclic pitch rate, lateral cyclic pitch rate, NR	To detect an excessive rate of movement of cyclic control when on the ground with rotors running.
Lateral cyclic movement — closest to LH and RH rollover	Lateral cyclic position, pedal position, roll attitude, elapsed time, ground switch (similar)	To detect the risk of a helicopter rollover due to an incorrect combination of tail rotor pedal position and lateral cyclic control position when on ground.
Excessive cyclic control with insufficient collective pitch on ground	Collective pitch, longitudinal cyclic pitch, lateral cyclic pitch	To detect an incorrect taxiing technique likely to cause rotor head damage.
Inadvertent lift-off	Ground switch (similar), autopilot discreet	To detect inadvertent lifting into hover.
Flight — Take-off and landing		

Event title/description	Parameters required	Comments
Day or night landing or take-off	Latitude and Longitude (Lat & Long), local time or UTC	To provide day/night relevance to detected events.
Specific location of landing or take-off	Lat & Long, ground switch (similar), Rad Alt, total Tq	To give contextual information concerning departures and destinations.
Gear extension and retraction — airspeed limit	Indicated airspeed (IAS), gear position	To identify when undercarriage airspeed limitations are breached.
Gear extension & retraction — height limit	Gear position, Rad Alt	To identify when undercarriage altitude limitations are breached.
Heavy landing	Normal/vertical acceleration, ground switch (similar)	To identify when hard/heavy landings take place.
Cabin heater on (take-off and landing)	Cabin heater discreet, ground switch (similar)	To identify use of engine bleed air during periods of high power demand.
High GS prior to touchdown (TD)	GS, Rad Alt, ground switch (similar), elapsed time, latitude, longitude	To assist in the identification of 'quick stop' approaches.
Flight — Speed		
High airspeed — with power	IAS, Tq 1, Tq 2, pressure altitude (Palt), OAT	To identify excessive airspeed in flight.
High airspeed — low altitude	IAS, Rad Alt	To identify excessive airspeed in low-level flight.
Low airspeed at altitude	IAS, Rad Alt	To identify a 'hover out of ground' effect.
Airspeed on departure (< 300 ft)	IAS, ground switch (similar), Rad Alt	To identify shallow departure.
High airspeed — power off	IAS, Tq 1, Tq 2 or one engine inoperative (OEI) discreet, Palt, OAT	To identify limitation exceedance of power-off airspeed.
Downwind flight within 60 sec of take-off	IAS, GS, elapsed time	To detect early downwind turn after take-off.
Downwind flight within 60 sec of landing	IAS, GS, elapsed time	To detect late turn to final shortly before landing.
Flight — Height		
Altitude — max	Palt	To detect flight outside of the published flight envelope.
Climb rate — max	Vertical speed (V/S), or Palt, or Rad Alt, Elapsed time	Identification of excessive rates of climb (RoC) can be determined from an indication/rate of change of Palt or Rad Alt.
High rate of descent	V/S	To identify excessive rates of descent (RoD).
High rate of descent (speed or height limit)	V/S, IAS or Rad Alt or elevation	To identify RoD at low level or low speed.
Settling with power (vortex ring)	V/S, IAS, GS, Tq	To detect high-power settling with low speed and with excessive rate of descent.
Minimum altitude in autorotation	NR, total Tq, Rad Alt	To detect late recovery from autorotation.
Low cruising (inertial systems)	GS, V/S, elevation, Lat & Long	To detect an extended low-level flight. Ground speed is less accurate with more false alarms. Lat & Long used for geographical boundaries.
Low cruising (integrated systems)	Rad Alt, elapsed time, Lat & Long, ground switch (similar)	To detect an extended low-level flight.
Flight — Attitude and controls		

Event title/description	Parameters required	Comments
Excessive pitch (height related — turnover (T/O), cruising or landing)	Pitch attitude, Rad Alt elevation, Lat & Long	To identify inappropriate use of excessive pitch attitude during flight. Height limits may be used (i.e. on take-off and landing or < 500 ft) — Lat & Long required for specific-location-related limits. Elevation less accurate than Rad Alt. Elevation can be used to identify the landing phase in a specific location.
Excessive pitch (speed related — T/O, cruising or landing)	Pitch attitude, IAS, GS, Lat & Long	To identify inappropriate use of excessive pitch attitude during flight. Speed limits may be used (i.e. on take-off and landing or in cruising) — Lat & Long required for specific-location-related limits. GS less accurate than IAS.
Excessive pitch rate	Pitch rate, Rad Alt, IAS, ground switch (similar), Lat & Long	To identify inappropriate use of excessive rate of pitch change during flight. Height limits may be used (i.e. on take-off and landing). IAS only for IAS limit, ground switch (similar) and Lat & Long required for specific-location-related limits.
Excessive roll/bank attitude (speed or height related)	Roll attitude, Rad Alt, IAS/GS	To identify excessive use of roll attitude. Rad Alt may be used for height limits, IAS/GS may be used for speed limits.
Excessive roll rate	Roll rate, Rad Alt, Lat & Long, Ground switch (similar)	Rad Alt may be used for height limits, Lat & Long and ground switch (similar) required for specific-location-related and air/ground limits.
Excessive yaw rate	Yaw rate	To detect excessive yaw rates in flight.
Excessive lateral cyclic control	Lateral cyclic position, ground switch (similar)	To detect movement of the lateral cyclic control to extreme left or right positions. Ground switch (similar) required for pre or post T/O.
Excessive longitudinal cyclic control	Longitudinal cyclic position, ground switch (similar)	To detect movement of the longitudinal cyclic control to extreme forward or aft positions. Ground switch (similar) required for pre or post T/O.
Excessive collective pitch control	Collective position, ground switch (similar)	To detect exceedances of the aircraft flight manual (AFM) collective pitch limit. Ground switch (similar) required for pre or post T/O.
Excessive tail rotor control	Pedal position, ground switch (similar)	To detect movement of the tail rotor pedals to extreme left and right positions. Ground switch (similar) required for pre or post T/O.
Manoeuvre G loading or turbulence	Lat & Long, normal accelerations, ground switch (similar) or Rad Alt	To identify excessive G loading of the rotor disc, both positive and negative. Ground switch (similar) required to determine air/ground. Rad Alt required if height limit required.

Event title/description	Parameters required	Comments
Pilot workload/turbulence	Collective and/or cyclic and/or tail rotor pedal position and change rate (Lat & Long)	To detect high workload and/or turbulence encountered during take-off and landing phases. Lat & Long required for specific landing sites. A specific and complicated algorithm for this event is required. See United Kingdom Civil Aviation Authority (UK CAA) Paper 2002/02.
Cross controlling	Roll rate, yaw rate, pitch rate, GS, accelerations	To detect an 'out of balance' flight. Airspeed could be used instead of GS.
Quick stop	GS (min and max), V/S, pitch	To identify inappropriate flight characteristics. Airspeed could be used instead of GS.
Flight — General		
OEI — Air	OEI discreet, ground switch (similar)	To detect OEI conditions in flight.
Single engine flight	No 1 engine Tq, No 2 engine Tq	To detect single-engine flight.
Torque split	No 1 engine Tq, No 2 engine Tq	To identify engine-related issues.
Pilot event	Pilot event discreet	To identify when flight crews have depressed the pilot event button.
Traffic collision avoidance system (TCAS) traffic advisory (TA)	TCAS TA discreet	To identify TCAS alerts.
Training computer active	Training computer mode active or discreet	To identify when helicopter have been on training flights.
High/low rotor speed — power on	NR, Tq (ground switch (similar), IAS, GS)	To identify mishandling of NR. Ground switch (similar), IAS or ground speed required to determine whether helicopter is airborne.
High/low rotor speed — power off	NR, Tq (ground switch (similar), IAS, GS)	To identify mishandling of NR. Ground switch (similar), IAS or ground speed to determine whether helicopter is airborne.
Fuel content low	Fuel contents	To identify low-fuel alerts.
Helicopter terrain awareness and warning system (HTAWS) alert	HTAWS alerts discreet	To identify when HTAWS alerts have been activated.
Automatic voice alert device (AVAD) alert	AVAD discreet	To identify when AVAD alerts have been activated.
Bleed air system use during take-off (e.g. heating)	Bleed air system discreet, ground switch (similar), IAS	To identify use of engine bleed air during periods of high power demand.
Rotors' running duration	NR, elapsed time	To identify rotors' running time for billing purposes.
Flight — Approach		
Stable approach heading change	Magnetic heading, Rad Alt, ground switch (similar), gear position, elapsed time	To identify unstable approaches.
Stable approach pitch attitude	Pitch attitude, Rad Alt, ground switch (similar), gear position	To identify unstable approaches.
Stable approach rod GS	Altitude rate, Rad Alt, ground switch (similar), gear position	To identify unstable approaches.
Stable approach track change	Track, Rad Alt, ground switch (similar), gear position	To identify unstable approaches.

Event title/description	Parameters required	Comments
Stable approach angle of bank	Roll attitude, Rad Alt, ground switch (similar), gear position	To identify unstable approaches.
Stable approach — rod at specified height	Altitude rate, Rad Alt, ground switch (similar), gear position	To identify unstable approaches.
Stable approach — IAS at specified height	IAS, Rad Alt, ground switch (similar), gear position	To identify unstable approaches.
Glideslope deviation above or below	Glideslope deviation	To identify inaccurately flown instrument landing system (ILS) approaches.
Localiser deviation left and right	Localiser deviation	To identify inaccurately flown ILS approaches.
Low turn to final	Elevation, GS, V/S, heading change	Airspeed could be used instead of GS.
Premature turn to final	Elevation, GS, V/S, heading change	Airspeed could be used instead of GS.
Stable approach — climb	IAS (min & max), V/S (min & max), elevation	To identify unstable approaches.
Stable approach — descent	IAS (min & max), V/S, elevation	To identify unstable approaches.
Stable approach — bank	IAS (min & max), V/S, elevation, roll	To identify unstable approaches.
Stable approach — late turn	Heading change, elevation, GS	To identify unstable approaches.
Go-around	Gear select (Rad Alt)	To identify missed approaches. Rad Alt for height limit.
Rate of descent on approach	Altitude rate, Rad Alt, Lat & Long, ground switch (similar)	To identify high rates of descent when at low level on approach. Rad Alt if below specified height, Lat & Long for specified location required.
Flight — Autopilot		
Condition of autopilot in flight	Autopilot discreet	To detect flight without autopilot engaged; per channel for multichannel autopilots.
Autopilot engaged within 10 sec after take-off	Autopilot engaged discreet, elapsed time, ground switch (similar), total Tq, Rad Alt	To identify inadvertent lift-off without autopilot engaged.
Autopilot engaged on ground (postflight or preflight)	Autopilot engaged discreet, elapsed time, ground switch (similar), total Tq, Rad Alt	To identify inappropriate use of autopilot when on ground. Elapsed time required to allow for permissible short periods.
Excessive pitch attitude with autopilot engaged on ground (offshore)	Pitch attitude, autopilot discreet, ground switch (similar), Lat & Long	To identify potential for low NR when helicopter pitches on floating helideck.
Airspeed hold engaged — airspeed (departure or non-departure)	Autopilot modes discreet, IAS, (ground switch (similar), total Tq, Rad Alt)	To detect early engagement of autopilot higher modes. Ground switch (similar), total Tq and Rad Alt to determine if the flight profile is ‘departure’.
Airspeed hold engaged — altitude (departure or non-departure)	Autopilot modes discreet, Rad Alt, (IAS, ground switch (similar), total Tq)	To detect early engagement of autopilot higher modes. IAS, ground switch (similar), total Tq to determine if the flight profile is ‘departure’.
Alt mode engaged — altitude (departure or non-departure)	Autopilot modes discreet, Rad Alt, (ground switch (similar), total Tq, IAS)	To detect early engagement of autopilot higher modes. Ground switch (similar), total Tq and Rad Alt to determine if the flight profile is ‘departure’.

Event title/description	Parameters required	Comments
Alt mode engaged — airspeed (departure or non-departure)	Autopilot modes discreet, IAS, (ground switch (similar), total Tq, Rad Alt)	To detect early engagement of autopilot higher modes. IAS, ground switch (similar), total Tq to determine if the flight profile is 'departure'.
Heading mode engaged — speed	Autopilot modes discreet, IAS	To detect engagement of autopilot higher modes below minimum speed limitations. Ground switch (similar), total Tq and Rad Alt to determine if the flight profile is 'departure'.
V/S mode active — below specified speed	Autopilot modes discreet, IAS	To detect engagement of autopilot higher modes below minimum speed limitations.
VS mode engaged — altitude (departure or non-departure)	Autopilot modes discreet, IAS, (WOW, total Tq, Rad Alt)	To detect early engagement of autopilot higher modes. Ground switch (similar), total Tq and Rad Alt to determine if the flight profile is 'departure'.
Flight director (FD) engaged — speed	FD discreet, IAS	To detect engagement of autopilot higher modes below minimum speed limitations.
FD-coupled approach or take off — airspeed	FD discreet, IAS, ground switch (similar)	To detect engagement of autopilot higher modes below minimum speed limitations.
Go-around mode engaged — airspeed	Autopilot modes discreet, IAS, ground switch (similar), total Tq, Rad Alt	To detect engagement of autopilot higher modes below minimum speed limitations.
Flight without autopilot channels engaged	Autopilot channels	To detect flight without autopilot engaged; per channel for multichannel autopilots.

AMC2 NCC.IDE.A.215 is replaced by the following:

AMC2 NCC.IDE.A.215 Emergency locator transmitter (ELT)

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) Point (a) of **AMC2 CAT.IDE.A.280** lists the applicable types of ELTs. ~~The ELT required by this provision should be one of the following:~~

~~(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.~~

~~(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).~~

~~(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.~~

~~(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life raft or a survivor. A water activated ELT(S) is not an ELT(AP).~~

(b) To minimise the possibility of damage in the event of a crash impact, ~~the automatic ELT~~ the ELT(AF), ELT(AP), ELT(AD), and ELT(DT) should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Point (c) of **AMC2 CAT.IDE.A.280** on crash survivability and homing-signal capability applies.

~~(c)~~ (d) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

The following GM1 NCC.IDE.A.215 is inserted:

GM1 NCC.IDE.A.215 Emergency locator transmitter (ELT)

TERMINOLOGY

GM1 CAT.IDE.A.280 provides explanations of terms used in point **NCC.IDE.A.215** and in the related AMC.

The following GM2 NCC.IDE.A.215 is inserted:

GM2 NCC.IDE.A.215 Emergency locator transmitter (ELT)

ADDITIONAL GUIDANCE

The guidance provided in **GM2 CAT.IDE.A.280** is also applicable to point **NCC.IDE.A.215**.

AMC2 NCC.IDE.H.215 is replaced by the following:

AMC2 NCC.IDE.H.215 Emergency locator transmitter (ELT)

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) Point (a) of AMC2 CAT.IDE.H.280 lists the applicable types of ELTs. ~~The ELT required by this provision should be one of the following:~~

~~(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid SAR teams in locating the crash site.~~

~~(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-~~

~~mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).~~

~~(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.~~

~~(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).~~

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

The following GM1 NCC.IDE.H.215 is inserted:

GM1 NCC.IDE.H.215 Emergency locator transmitter (ELT)

TERMINOLOGY

GM1 CAT.IDE.H.280 provides explanations of terms used in point **NCC.IDE.H.215** and in the related AMC.

The following GM2 NCC.IDE.H.215 is inserted:

GM2 NCC.IDE.H.215 Emergency locator transmitter (ELT)

ADDITIONAL GUIDANCE

The guidance provided in **GM2 CAT.IDE.H.280** is also applicable to point **NCC.IDE.H.215**.

The following AMC1 NCC.IDE.H.227(b)(3) is inserted:

AMC1 NCC.IDE.H.227(b)(3) Life rafts, survival ELTs, and survival equipment on extended overwater flights

SURVIVAL ELT

AMC1 CAT.IDE.H.300(b)(3) & **CAT.IDE.H.305(b**) provides the types of ELT that may be installed on a required life raft.

AMC2 NCO.IDE.A.170 is replaced by the following:

AMC2 NCO.IDE.A.170 Emergency locator transmitter (ELT)

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ~~ejected~~, deployed and activated by an impact, and, in some cases, also by ~~hydrostatic~~ water sensors. ~~Manual deployment is also provided.~~ This type of ELT should float in water and is intended to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III, and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

GM1 NCO.IDE.A.170 is replaced by the following:

GM1 NCO.IDE.A.170 Emergency locator transmitter (ELT)

TERMINOLOGY

~~(a) An ELT is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.~~

~~(b) A PLB is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.~~

GM1 CAT.IDE.A.280 contains explanations of terms used in point **NCO.IDE.A.170** and in the related AMC.

AMC2 NCO.IDE.H.170 is replaced by the following:

AMC2 NCO.IDE.H.170 Emergency locator transmitter (ELT)

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid SAR teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ~~ejected,~~ deployed and activated by an impact, and, in some cases, also by ~~hydrostatic~~ water sensors. ~~Manual deployment is also provided.~~ This type of ELT should float in water and is intended to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III, and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

GM1 NCO.IDE.H.170 is replaced by the following:

GM1 NCO.IDE.H.170 Emergency locator transmitter (ELT)

TERMINOLOGY

~~(a) An ELT is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.~~

~~(b) A PLB is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.~~

GM1 CAT.IDE.H.280 contains explanations of terms used in point **NCO.IDE.H.170** and in the related AMC.

AMC2 SPO.IDE.A.190 is replaced by the following:

AMC2 SPO.IDE.A.190 Emergency locator transmitter (ELT)

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

(a) Point (a) of **AMC2 CAT.IDE.A.280** lists the applicable types of ELTs. ~~The ELT required by this provision should be one of the following:~~

~~(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.~~

~~(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).~~

~~(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ejected, deployed and activated by an impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site.~~

~~(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).~~

(b) To minimise the possibility of damage in the event of a crash impact, ~~the automatic ELT~~ the ELT(AF), ELT(AP), ELT(AD), or ELT(DT) should be rigidly fixed to the aircraft structure, as far aft as practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Point (c) of **AMC2 CAT.IDE.A.280** on crash survivability and homing-signal capability applies.

~~(c)~~ (d) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

GM1 SPO.IDE.A.190 is replaced by the following:

GM1 SPO.IDE.A.190 Emergency locator transmitter (ELT)

TERMINOLOGY

~~(a) An ELT is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.~~

~~(b) A PLB is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.~~

GM1 CAT.IDE.A.280 contains explanations of terms used in point **SPO.IDE.A.190** and in the related AMC.

The following GM3 SPO.IDE.A.190 is inserted:

GM3 SPO.IDE.A.190 Emergency locator transmitter (ELT)

ADDITIONAL GUIDANCE

The guidance provided in **GM2 CAT.IDE.A.280** is also applicable to point **SPO.IDE.A.190.**

AMC2 SPO.IDE.H.190 is replaced by the following:

AMC2 SPO.IDE.H.190 Emergency locator transmitter (ELT)

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid SAR teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically ~~ejected,~~ deployed and activated by an impact, and, in some cases, also by ~~hydrostatic~~ water sensors. ~~Manual deployment is also provided.~~ This type of ELT should float in water and is intended to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

GM1 SPO.IDE.H.190 is replaced by the following:

GM1 SPO.IDE.H.190 Emergency locator transmitter (ELT)

TERMINOLOGY

~~(a) An ELT is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may be manually activated.~~

~~(b) A PLB is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.~~

GM1 CAT.IDE.H.280 contains explanations of terms used in point **SPO.IDE.H.190** and in the related AMC.

The following GM3 SPO.IDE.H.190 is inserted:

GM3 SPO.IDE.H.190 Emergency locator transmitter (ELT)

ADDITIONAL GUIDANCE

The guidance provided in **GM2 CAT.IDE.H.280** is applicable to point **SPO.IDE.H.190**.