

Standardised European Rules of the Air

UK Acceptable Means of Compliance and Guidance Material

for

Regulation (EU) No. 932/2021 as retained (and amended in UK domestic law) under the European Withdrawal Act 2018

List of Revisions

Published	Reason for revision
January 2021	UK AMC and GM (form of EASA AMC and GM current and applicable on 31 December 2020, adopted by CAA on 1 January 2021 and provisions in use in the UK on or before 31 December 2020 as set out in CAA CAP 413 Radiotelephony Manual)
October 2021	Revisions to AMC1 SERA.6001(a)(3);(4);(5);(6);(7) and GM1 SERA.6001(a)(3);(4);(5);(6);(7), (adopted by ORS9 CAA Decision 9 on 18 October 2021).
March 2022	New AMC and GM to SERA.6005 adopted by ORS9 CAA Decision 10 on 13 January 2022 (text reflects Version 2 of ORS9 CAA Decision 10).

NOTE FROM THE EDITOR

This document contains acceptable means of compliance and guidance material adopted by the UK CAA. The reference number indicates the Article or paragraph in the corresponding Regulation which it relates to.

All references to Regulations are to the UK law bearing that title or number, being EU retained law as retained (and amended by UK domestic law) pursuant to the European Union (Withdrawal) Act 2018.

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GM1 Article 2(25) Air-taxiing

The actual height during air-taxiing may vary, and some helicopters may require air-taxiing above 8 m (25 ft) AGL to reduce ground effect turbulence or provide clearance for cargo sling loads.

GM1 Article 2(27) Air traffic advisory service

AIR TRAFFIC ADVISORY SERVICE

- (a) Air traffic advisory service does not afford the degree of safety and cannot assume the same responsibilities as air traffic control (ATC) service in respect of the avoidance of collisions, since the information regarding the disposition of traffic in the area concerned available to the unit providing air traffic advisory service may be incomplete.
- (b) Aircraft wishing to conduct IFR flights within advisory airspace, but not electing to use the air traffic advisory service, are nevertheless to submit a flight plan, and notify changes made thereto to the unit providing that service.
- (c) ATS units providing air traffic advisory service:
 - (1) *advise* the aircraft to depart at the time specified and to cruise at the levels indicated in the flight plan if it does not foresee any conflict with other known traffic;
 - (2) *suggest* to aircraft a course of action by which a potential hazard may be avoided, giving priority to an aircraft already in advisory airspace over other aircraft desiring to enter such advisory airspace; and
 - (3) *pass* to aircraft traffic information comprising the same information as that prescribed for area control service.

GM1 Article 2(28) Air traffic control clearance

- (a) For convenience, the term 'air traffic control clearance' is frequently abbreviated to 'clearance' when used in appropriate contexts.
- (b) The abbreviated term 'clearance' may be prefixed by the words 'taxi', 'take-off', 'departure', 'en route', 'approach' or 'landing' to indicate the particular portion of flight to which the air traffic control clearance relates.

GM1 Article 2(34) Air traffic services reporting office

An air traffic services reporting office may be established as a separate unit or combined with an existing unit, such as another air traffic services unit, or a unit of the aeronautical information service.

GM1 Article 2(38) Alternate aerodrome

The aerodrome from which a flight departs may also be an en-route or a destination alternate Page **11** of **91** | March 2022 aerodrome for that flight.

GM1 Article 2(39) Altitude

- (a) A pressure type altimeter calibrated in accordance with the Standard Atmosphere when set to a QNH altimeter setting will indicate altitude (above the mean sea level).
- (b) The term 'altitude' indicates altimetric rather than geometric altitude.

GM1 Article 2(41) Approach control unit

The purpose of the definition is to describe the specific services associated to approach control unit. This does not preclude the possibility for an approach control unit to provide air traffic control services to flights other than those arriving or departing.

GM1 Article 2(45) Area navigation (RNAV)

Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

GM1 Article 2(46) ATS route

- (a) The term 'ATS route' is used to mean variously airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.
- (b) An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and, as determined by the competent authority, the lowest safe altitude.

GM1 Article 2(48) Automatic dependent surveillance — contract (ADS-C)

The abbreviated term 'ADS-C' is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract, or an emergency mode.

GM1 Article 2(48a) ADS-C agreement

The terms of the ADS-C agreement, which establishes the conditions of the ADS-C data reporting, will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.

GM1 Article 2(51) Change-over point

Change-over points are established to provide the optimum balance in respect of signal strength and quality between ground facilities at all levels to be used and to ensure a common source of azimuth

guidance for all aircraft operating along the same portion of a route segment.

GM1 Article 2(58) Controlled airspace

Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D and E.

GM1 Article 2(78) Flight level

A pressure type altimeter calibrated in accordance with the Standard Atmosphere, when set to a pressure of 1 013,2 hPa, may be used to indicate flight levels.

GM1 Article 2(84) Height

- (a) A pressure type altimeter calibrated in accordance with the Standard Atmosphere, when set to a QFE altimeter setting, will indicate height (above the QFE reference datum).
- (b) The term 'height' indicates altimetric rather than geometric height.

GM1 Article 2(89a) Instrument approach operation

Lateral and vertical guidance utilised in an instrument approach procedure refers to the guidance provided either by:

- (a) a ground-based navigation aid; or
- (b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

GM1 Article 2(90) Instrument approach procedure

Instrument approach operations are classified based on the designed lowest operating minima below which an approach operation should only be continued with the required visual reference as follows:

- (a) Type A: a minimum descent height or decision height (DH) at or above 75 m (250 ft); and
- (b) Type B: a DH below 75 m (250 ft). Type B instrument approach operations are categorised as:
 - (1) Category I (CAT I): a DH not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range (RVR) not less than 550 m;
 - (2) Category II (CAT II): a DH lower than 60 m (200 ft) but not lower than 30 m (100 ft) and an RVR not less than 300 m;
 - (3) Category IIIA (CAT IIIA): a DH lower than 30 m (100 ft) or no DH and an RVR not less than 175 m;
 - (4) Category IIIB (CAT IIIB): a DH lower than 15 m (50 ft) or no DH and an RVR less than 175 m but not less than 50 m; and
 - (5) Category IIIC (CAT IIIC): no DH and no RVR limitations.

Where DH and RVR fall into different categories of operation, the instrument approach operation

would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation, or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).

The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation, the required visual reference is the runway environment.

GM1 Article 2(97) Night

To enable practical application of the definition of night, evening and morning civil twilight may be promulgated pertinent to the date and position.

GM1 Article 2(114) Runway-holding position

In radiotelephony phraseology, the term 'holding point' is used to designate the runway-holding position.

GM2 Article 2(114) Runway-holding position

Runway-holding positions also exist at aerodromes with no ATC. In such circumstances authorisation from an aerodrome control tower is not possible.

GM1 Article 2(121) Significant point

There are three categories of significant points: ground-based navigation aid, intersection, and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids.

GM1 to Article 2(129a) Toy aircraft

Directive 2009/48/EC (the Toy Safety Directive) requires that toys, including the chemicals they contain, shall not jeopardise the safety or health of users or third parties when they are used as intended or in a foreseeable way, bearing in mind the behaviour of children. The Toy Safety Directive additionally requires that toys made available on the market shall bear the CE marking. The CE marking indicates the conformity of the product with the Union legislation applying to the product and providing for CE marking.

GM1 Article 2(138) Unmanned free balloons

Unmanned free balloons are classified as heavy, medium or light in accordance with the specifications contained in Appendix 2 to this Regulation.

GM1 Article 2(141) Visibility

- (a) The two distances which may be defined by a given visibility have different values in the air of a given extinction coefficient. Visibility based on seeing and recognising an object is represented by the meteorological optical range (MOR) (Article 2(141)(a)). Visibility based on seeing and identifying lights varies with the background illumination (Article 2(141)(b)).
- (b) The definition of visibility applies to the observations of visibility in local routine and special reports, to the observations of prevailing and minimum visibility reported in METAR and SPECI, and to the observations of ground visibility.

GM1 Article 4 Exemptions for special operations

GENERAL

- (a) The exemptions covered by **Article 4** are intended for cases where the operation is of sufficient public interest to warrant allowing non-compliance with this Regulation, including the acceptance of the additional safety risks involved in such operations. Possible exemptions for normal operations, which are outside the scope of this Article, are covered by the specific provisions in the Annex (e.g. in provisions containing formulations such as 'as permitted by the competent authority', 'unless otherwise specified by the competent authority', etc.).
- (b) Depending on the case, the competent authority may decide to grant the exemption to individual flights, groups of flights, or types of operations performed by specified operators.
- (c) The exemptions may be granted either permanently, or as a temporary measure. Where the exemption is granted permanently, particular attention should be paid to ensuring that the conditions of the exemptions continue to be complied with over time.
- (d) As referred to in **Article 4**(3), and depending on national rules, some of these operations may be performed under the Operational Air Traffic (OAT) rules in certain Member States and, thus, are entirely outside the scope of this Regulation.

GM2 Article 4 'Exemptions for special operations'

The competent authority, when granting exemptions in accordance with Article 4, should consider not only case-by-case requests coming from individual entities, but also may grant general exemptions for groups of entities entitled to carry out the listed activities.

GM1 Article 8.2 Transitional and additional measures

Without prejudice to its publication in other relevant sections of the Aeronautical Information Publication (AIP), information pertaining to Article 8.2 should be grouped and published in the national AIP section GEN 1.6.

Examples:

(a) If the competent authority decides to permit VFR flights at night in accordance with SERA.5005(c), general information for the permission should be published in the AIP section GEN 1.6 with reference to the section in the AIP where the details for the conditions applicable for VFR flights at night are published;

- (b) If the competent authority designates certain parts of airspace as Radio Mandatory Zones (RMZs) and/or as Transponder Mandatory Zones (TMZs) in accordance with SERA.6005, the general information for such designation should be published in the AIP section GEN 1.6 with reference to the section in the AIP where the details for the established RMZs and/or TMZs are published;
- (c) If the competent authority selects separation minima in accordance with SERA.8010(c)(2), general information for such selection should be published in AIP section GEN 1.6 with reference to the section in the AIP where the details for the these minima are published.

It should be noted that the above examples do not cover all possible cases which may require publication of information relevant to Article 8.2 in the national AIP section GEN 1.6.

ANNEX: RULES OF THE AIR SECTION 1 FLIGHT OVER THE HIGH SEAS No AMC or GM SECTION 2 APPLICABILITY AND COMPLIANCE

GM1 SERA.2005 Compliance with the rules of the air

APPLICABLE LOCAL PROVISIONS

Applicable local provisions include local aerodrome regulations that are published in the relevant Aeronautical Information Publications (AIPs).

Such local aerodrome regulations may contain requirements for the operation of the aircraft transponder on the movement area of an aerodrome with the intent to ensure provision of surveillance data to the air traffic services unit providing services at the aerodrome, as well as other aerodrome units (e.g. apron management services).

GM1 SERA.2005(b) Compliance with the rules of the air

GENERAL

When determining whether to operate in accordance with the visual flight rules or the instrument flight rules, a pilot may elect to fly in accordance with instrument flight rules in visual meteorological conditions, or may be required to do so by the competent authority.

SECTION 3 GENERAL RULES AND COLLISION AVOIDANCE

CHAPTER 1 PROTECTION OF PERSONS AND PROPERTY

GM1 SERA.3105 Minimum heights

MINIMUM HEIGHTS ESTABLISHED BY THE COMPETENT AUTHORITY ABOVE THE REQUIRED MINIMUM HEIGHTS

In cases where it is considered that the minimum heights specified in **SERA.5005** and **SERA.5015** are not sufficient, the competent authority may establish appropriate structures, such as controlled, restricted or prohibited airspace, and define specific conditions through national arrangements. In all cases, the related Aeronautical Information Publication (AIP) and charts should be made easy to comprehend for airspace users.

GM2 SERA.3105 Minimum heights

MINIMUM HEIGHTS PERMITTED BY THE COMPETENT AUTHORITY BELOW THE REQUIRED MINIMUM HEIGHTS

The permission from the competent authority to fly at lower levels than those stipulated in **SERA.5005(f)** and **SERA.5015(b)** may be granted either as a general exception for unlimited number of cases or for a specific flight upon specific request. The competent authority is responsible for ensuring that the level of safety resulting from such permission is acceptable.

CHAPTER 2 AVOIDANCE OF COLLISIONS

GM1 SERA.3201 General

VIGILANCE ON BOARD AN AIRCRAFT

Regardless of the type of flight or the class of airspace in which the aircraft is operating, it is important that vigilance for the purpose of detecting potential collisions be exercised on board an aircraft. This vigilance is important at all times including while operating on the movement area of an aerodrome.

GM1 SERA.3210(d)(3) Right-of-way

USE OF STOP BARS — CONTINGENCY MEASURES

When considering contingency arrangements for situations where the stop bars cannot be turned off because of a technical problem, the air traffic service provider should take into account that such contingency arrangements should significantly differ from normal operations and should not undermine the principle that a lit stop bar must not be crossed. The service provider may consider, inter alia, the following:

- (a) physically disconnecting the respective lit stop bar from its power supply;
- (b) physically obscuring the lights of the lit stop bar; or
- (c) providing for a marshaller or a follow-me vehicle to lead the aircraft to cross the lit stop bar.

GM1 SERA.3210(d)(4)(ii)(B) Right-of-way

CONTROL OF PERSONS AND VEHICLES AT AERODROMES

In prescribing the minimum separation between vehicles and taxiing aircraft, the availability of lighting, markings, signals and signage should normally be taken into account.

GM1 SERA.3215(a);(b) Lights to be displayed by aircraft

GENERAL

Lights fitted for other purposes, such as landing lights and airframe floodlights, may be used in addition to the anti-collision lights to enhance aircraft conspicuity.

AMC1 SERA.3215(a)(1);(3) Lights to be displayed by aircraft

BALLOONS LIGHTS

The anti-collision light required for free manned balloons which are certified for VFR at night in accordance with CS 31HB/GB.65 Night lighting should be considered as acceptable means to comply with SERA.3215(a)(1) and SERA.3215(a)(3).

GM1 SERA.3215(a)(1);(3) Lights to be displayed by aircraft

BALLOONS LIGHTS

The technical specifications that such anti-collision lights specified in **AMC1 SERA 3215(a)(1);(3)** need to meet can be found in the special conditions 'SC D-0131HB_GB External and Internal Lights for Free Balloon Night Flight Issue 2'¹.

GM1 SERA.3220(b) Simulated instrument flights

SAFETY PILOT

- (a) For the purposes of this rule a safety pilot is a pilot who holds a licence which entitles him/her to act as pilot-in-command of the aircraft and is able and prepared to take control of the aircraft at any time during the flight. The safety pilot will maintain lookout, or a competent observer in case the safety pilot does not have full vision of each side of the aircraft, and avoid collisions on behalf of the person flying under simulated instrument conditions.
- (b) A control seat is a seat which affords the person sitting in it sufficient access to the flying controls so as to enable him/her to fly the aircraft unimpeded.

GM1 SERA.3230 Water operations

INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA

In addition to the provisions of **SERA.3230**, rules set forth in the International Regulations for Preventing Collisions at Sea, developed by the International Conference on Revision of the International Regulations for Preventing Collisions at Sea (London, 1972), may be applicable in certain cases.

collision avoidance

GM1 SERA.3230(b) Water operations

LIGHTS TO BE DISPLAYED BY AIRCRAFT ON THE WATER

The International Regulations for Preventing Collisions at Sea specify that the rules concerning lights shall be complied with from sunset to sunrise. Any lesser period between sunset and sunrise established in accordance with **SERA.3230(b)** cannot, therefore, be applied in areas where the International Regulations for Preventing Collisions at Sea apply, e.g. on the high seas.

CHAPTER 3 SIGNALS

CHAPTER 4 TIME

GM1 SERA.3401(d) General

TIME IN AIR TRAFFIC SERVICES

In most cases the correct time is obtained through alternative arrangements. The existence of such arrangements should be indicated in the State Aeronautical Information Publication (AIP).

SECTION 4 FLIGHT PLANS

GM1 SERA.4001 Submission of a flight plan

GENERAL

- (a) A flight plan may cover only part of a flight, as necessary, to describe that portion of the flight or those manoeuvres which are subject to air traffic control.
- (b) The term 'submit a flight plan' refers to the action by the pilot or the operator to provide ATS with flight plan information. The term 'filed flight plan' refers to the flight plan as received and accepted by ATS whereas 'transmit a flight plan' refers to the action by a pilot to submit the flight plan, or submit abbreviated flight plan by radiotelephony to the ATS unit concerned.

AMC1 SERA.4001(c) Submission of a flight plan

In cases where no air traffic services (ATS) reporting office has been established, the flight plan should be submitted to the ATS unit performing the functions of such an office, or via approved direct methods as indicated in the aeronautical information publication (AIP).

GM1 SERA.4005(a) Contents of a flight plan

ABBREVIATED FLIGHT PLAN

An abbreviated flight plan transmitted in the air by radiotelephony for the crossing of controlled airspace, or any other areas or routes designated by the competent authority, normally contains, as a minimum: call sign, type of aircraft, point of entry, point of exit and level. Additional elements may be required by the competent authority.

GM2 SERA.4005(a) Contents of a flight plan

INFORMATION ABOUT THE OPERATOR IN THE FLIGHT PLAN IN CASE OF PROVIDING ALERTING SERVICE

According to ICAO Annex 11, an ATS unit shall, when practicable, inform the aircraft operator when an alerting service is provided to an aircraft. In order to facilitate quick and effective coordination, it is advisable to provide in the flight plan (item 18 'Other information') information sufficient to enable the ATS unit to contact the on-duty staff of the aircraft operator if such information has not been provided to the ATS unit by other means.

GM1 SERA.4020 Closing a flight plan

ARRIVAL REPORTS

Whenever an arrival report is required, failure to comply with the provisions of **SERA.4020** may cause serious disruption in the air traffic services and incur great expenses in carrying out unnecessary search and rescue operations.

SECTION 5 Visual meteorological conditions, visual flight rules, special VFR and instrument flight rules

SECTION 5 VISUAL METEOROLOGICAL CONDITIONS, VISUAL FLIGHT RULES, SPECIAL VFR AND INSTRUMENT FLIGHT RULES

GM1 SERA.5005(c)(3)(iii) Visual flight rules

NIGHT VFR ON TOP

When flying in airspace classes B, C, D, E, F, or G, more than 900 m (3 000 ft) above mean sea level (MSL) or 300 m (1 000 ft) above terrain, whichever is higher, the pilot may elect to fly above a cloud layer (VFR on top). When making the decision on whether to fly above or below a cloud at night, consideration should be given at least but not limited to the following:

- (a) The likelihood of weather at destination allowing a descent in visual conditions;
- (b) Lighting conditions below and above the cloud layer;
- (c) The likelihood of the cloud base descending, if flight below cloud is chosen, thus resulting in terrain clearance being lost;
- (d) The possibility of flight above the cloud leading to flight between converging cloud layers;
- (e) The possibility of successfully turning back and returning to an area where continuous sight of surface can be maintained; and
- (f) The possibilities for the pilot to establish their location at any point of the route to be flown, taking into consideration also the terrain elevation and geographical and man-made obstacles.

AMC1 SERA.5005(f) Visual flight rules

VFR MINIMUM HEIGHTS — PERMISSION FROM THE COMPETENT AUTHORITY

The competent authority should specify the conditions under which the permission is or may be granted, including the minimum heights above the terrain, water or the highest obstacle within a radius of 150 m (500 ft) from an aircraft practising forced landings, a balloon or an aircraft executing ridge or hill soaring.

GM1 SERA.5005(f) Visual flight rules

VFR MINIMUM HEIGHTS — PERMISSION FROM THE COMPETENT AUTHORITY

Subject to an appropriate safety assessment, permission from the competent authority may also be granted for cases like:

- (a) aircraft operating in accordance with the procedure promulgated for the notified route being flown;
- (b) helicopters operating at a height that will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface;
- (c) aircraft picking up or dropping tow ropes, banners or similar articles at an aerodrome;
- (d) any other flights not specified above, where specific exemption is required to accomplish a specific task.

SECTION 5 Visual meteorological conditions, visual flight rules, special VFR and instrument flight rules

GM1 SERA.5010 Special VFR in control zones

The list of type of operations subject to permit by the competent authority to deviate from the requirements for special visual flight rules (VFR) flights is not exhaustive. The competent authority may grant a permit for other kind of helicopter operations such as power line inspections, helicopter hoist operations, etc.

AMC1 SERA.5010(a)(3) Special VFR in control zones

SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS

The 140 kt speed should not be used by helicopters operating at a visibility below 1 500 m. In such case, a lower speed appropriate to the actual conditions should be applied by the pilot.

GM1 SERA.5010(a)(3) Special VFR in control zones

SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS

The 140 kt speed is to be considered as an absolute maximum acceptable speed in order to maintain an acceptable level of safety when the visibility is 1 500 m or more. Lower speeds should be applied according to elements such as local conditions, number and experience of pilots on board, using the guidance of the table below:

Visibility (m)	Advisory speed (kt)
800	50
1 500	100
2 000	120

GM1 SERA.5010(b)(2) Special VFR in control zones

When assessing the prevailing flight visibility, the pilots should use their best judgement. The assessment should be based, for example, on the pilot's overall flight experience, knowledge of local conditions and procedures, visible landmarks, etc. Furthermore, the pilot should possess the latest weather observations and forecasts.

AMC1 SERA.5010(b)(3) Special VFR in control zones

SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS

The 140 kt-speed should not be used by helicopters operating at a visibility below 1 500 m. In such case, a lower speed appropriate to the actual conditions should be applied by the pilot.

SECTION 5 Visual meteorological conditions, visual flight rules, special VFR and instrument flight rules

GM1 SERA.5010(c) Special VFR in control zones

When the reported ground visibility at the aerodrome is less than 1 500 m, ATC may issue a special VFR clearance for a flight crossing the control zone and not intending to take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or aerodrome traffic circuit when the flight visibility reported by the pilot is not less than 1 500 m, or, for helicopters, not less than 800 m.

GM1 SERA.5015(b) Instrument flight rules (IFR) — Rules applicable to all IFR flights

MINIMUM LEVELS

When determining which are the highest obstacles within 8 km of the estimated position of the aircraft, the estimate will take account of the navigational accuracy which can be achieved on the relevant route segment, having regard to the navigational facilities available on the ground and in the aircraft.

GM1 SERA.5015(c)(3) Instrument flight rules (IFR) — Rules applicable to all IFR flights

No reply, other than the acknowledgment 'IFR FLIGHT CANCELLED AT ... (time)', should normally be made by an ATS unit.

GM1 SERA.5025(a) IFR — Rules applicable to IFR flights outside controlled airspace

CRUISING LEVELS

Although an IFR flight operating in level cruising flight outside controlled airspace is to be flown at a cruising level appropriate to its track, as specified in the table of cruising levels, this does not preclude the use of cruise climb techniques.

GM1 SERA.5025(c) IFR — Rules applicable to IFR flights outside controlled airspace

POSITION REPORTS

Aircraft electing to use the air traffic advisory service whilst operating under IFR within specified advisory airspace are expected to comply with the provisions of '**Section 8** — Air traffic Control Service', except that the flight plan and changes thereto are not subject to clearances and that two- way communication will be maintained with the unit providing the air traffic advisory service.

SECTION 6 AIRSPACE CLASSIFICATION

AMC1 SERA.6001 Classification of airspaces

GENERAL

Where ATS airspaces adjoin vertically, i.e. one above the other, flights at a common level should comply with the requirements of, and be given services applicable to, the less restrictive class of airspace.

GM1 SERA.6001 Classification of airspaces

GENERAL

- (a) Class B airspace is considered less restrictive than Class A airspace; Class C airspace less restrictive than Class B airspace, etc.
- (b) The speed limitation of 250 kt for VFR flights in airspace Classes C, D, E, F, G and for IFR flights in airspace Classes D, E, F, G is intended to facilitate visual acquisition of flights which are not separated.
- (c) Wherever there is a need to accommodate within a given airspace class operations compatible with a less restrictive class, the following may be used:
 - (1) reclassification of the airspace concerned;
 - (2) redesigning the volume of airspace concerned by defining airspace restrictions or reservations, or subvolumes of less restrictive classes of airspace (e.g. corridors).

AMC1 SERA.6001(a)(3);(4);(5);(6);(7) Classification of airspaces

ORS9 CAA Decision No 9

SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE CAA

Approval by the CAA of an alleviation of the 250 knot speed limitation below 3 050 m (10 000 ft) may be granted for particular activities within specific airspace classes. Such an approval should be based on a safety assessment and procedures submitted by the operator and be subject to conditions stipulated by the CAA.

GM1 SERA.6001(a)(3);(4);(5);(6);(7) Classification of airspaces

ORS9 CAA Decision No 9

SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE CAA

- (a) When applying for an approval to exceed the airspace speed limit, the following should, as a minimum, be considered when developing the safety assessment and proposed operational procedures:
 - (1) Activities requiring flight in excess of the airspace speed limit such as:
 - (i) aerobatics;
 - (ii) Flying Display practice and participation;

- (iii) training for the purpose of attaining specific qualification(s) in the aeroplane concerned; or
- (iv) transit

for which approvals are being sought.

- (2) Air traffic, airspace classes requirements, and airspace design, the procedures designed for the airspace, and the potential use of clearances to maintain own separation as described in GM1 to SERA.8005(b).
- (3) Rationale for exceeding the airspace speed limit: type of aircraft involved including the relevant performance data stated in the approved Aircraft Flight Manual (AFM), proposed speeds and maximum durations at those speeds, and why such flight cannot take place above 3 050 m (10,000 ft) AMSL.
- (4) Measures to protect other relevant airspace users including the filing of a flight plan, seeking where possible a surveillance-based air traffic service (and consideration of actions in the event such an air traffic service is unavailable), use of appropriate collision warning equipment as required, and flight planning and preparation to avoid known areas of high traffic density.
- (5) Flight crew training and experience in conducting these activities and managing crew workload.
- (b) Operators of historic or ex-military aircraft requiring an airspace speed limit approval should refer to additional guidance published by the CAA on this topic.

GM2 SERA.6001(a)(3);(4);(5);(6);(7) Classification of airspaces

ORS9 CAA Decision No.9

SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE CAA

- (a) For localised alleviations from the speed limitation, the safety assessment is normallyconducted by the ATS provider and is subject to approval by the CAA.
- (b) Where alleviation is applied universally across UK airspace, the CAA will ensure that appropriate safety assessment has been conducted.

AMC1 SERA.6001(a)(8) Classification of airspaces

GENERAL

Class F airspace should only be implemented where the air traffic services are inadequate for the provision of air traffic control, and the limited advice on collision hazards otherwise provided by flight information service will not be adequate. Where air traffic advisory service is implemented, this should be considered as a temporary measure only until such time as it can be replaced by air traffic control service or, in cases where the traffic situation changes such that advisory service is no longer required, replaced by flight information service.

GM1 SERA.6001(a)(8) Classification of airspaces

DURATION OF TEMPORARY MEASURE

(a) When establishing Class F airspace, its intended temporary duration after which it should be replaced by an alternative classification should be specified in the AIP of the Member State.

(b) The intended temporary duration of Class F airspace should not be longer than 3 years.

EXAMPLE

(c) Certain CTR airspace may change its classification on a daily basis (e.g. from 06:00 to 20:00 the airspace is classified as Class A, and from 20:00 until 23:59 and from 00:00 until 05:59 is classified as Class F). In this case, the duration of these arrangements should not exceed 3 years.

GM1 SERA.6005 Requirements for communications and SSR transponder

OBJECTIVE OF RADIO AND TRANSPONDER MANDATORY ZONES

- (a) The objective of a radio mandatory zone (RMZ) and a transponder mandatory zone (TMZ) is to enhance the conspicuity of aircraft operating within, or in the vicinity of, complex, or otherwise busy airspace when the establishment of a more restrictive classification of airspace is not warranted, in order to maintain a balance between safe, efficient operations and fair, equitable access for all airspace users. Enhanced conspicuity can enable, as appropriate:
 - (1) airborne collision warning and/or avoidance systems;
 - (2) a 'known' or 'recognised' air traffic environment which, in turn, permits ATS to provide more specific traffic information on collision hazards; and,
 - (3) ground-based safety nets such as short-term conflict alert (STCA) and minimum safe altitude warning (MSAW).
- (b) In addition, a RMZ may also be notified to facilitate:
 - (1) the provision of flight information, alerting and search and rescue services; or,
 - (2) coordination with appropriate military units or with ATS units in adjacent States in order to avoid the possible need for interception for the purpose of identification.

GM2 SERA.6005 Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

RADIO AND TRANSPONDER MANDATORY ZONES – UNMANNED AIRCRAFT

Air Navigation Order (ANO) 2016 Article 23 describes exceptions from application of provisions of the Order for certain classes of aircraft, with paragraph (1)(c) relating to any unmanned aircraft other than those unmanned aircraft that are subject to certification.

ANO 2016 Schedule 1 defines "Unmanned aircraft subject to certification" as any unmanned aircraft forming part of an unmanned aircraft system (UAS) required to be certified under Article 40(1)(a), (b) or (c) of Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 as retained (and amended in UK domestic law) under the European Withdrawal Act 2018.

Pursuant to Article 23(1)(c) of ANO 2016 and Article 7(2) of UK Reg (EU) 2019/947, other than those unmanned aircraft that are subject to certification, unmanned aircraft are not required to comply with the requirements of a notified RMZ/TMZ unless specifically required to do so within the terms of a UAS Operational Authorisation or Light UAS Operator Certificate issued by the CAA.

ORS9 CAA Decision No.10

GM3 SERA.6005 Requirements for communications and SSR transponder

DESIGN OF RADIO AND TRANSPONDER MANDATORY ZONES

The existence of a RMZ/TMZ does not confer or suggest any particular airspace classification; it adopts the background classification of the airspace that it is embedded within.

GM1 SERA.6005(a) Requirements for communications and SSR transponder

RADIO MANDATORY ZONES

RMZ are established to enhance situational awareness and therefore flight safety within a given volume of airspace, whilst minimising the impact upon suitably qualified pilots in appropriately equipped aircraft.

GM2 SERA.6005(a) Requirements for communications and SSR transponder

CARRIAGE OF RADIO COMMUNICATION EQUIPMENT

The requirements for carriage of radio communication equipment are detailed in the UK Air Ops Regulation (UK Reg (EU) No 965/2012) and paragraph 2(b) of the table in ANO 2016 Schedule 6 Part 2 paragraph 3. These requirements are summarised in AIP GEN 1.5 Section 5.1.2.

GM3 SERA.6005(a) Requirements for communications and SSR transponder

ENTRY INTO A RADIO MANDATORY ZONE

- (a) Aircraft wishing to enter RMZ in class E airspace are reminded of the requirements detailed in SERA.6001(a)(5) for flight within airspace of that classification.
- Pilots should be aware that the ANSP may issue a SSR Mode 3A code to an aircraft with a (b) functioning SSR transponder.

GM1 SERA.6005(a)(1) Requirements for communications and SSR transponder

PROVISION OF ATS WITHIN A RADIO MANDATORY ZONE

Where ATS are provided within the RMZ, in maintaining a continuous watch on the appropriate airground communication channel, pilots will be provided with ATS appropriate to the airspace classification and the flight rules in accordance with which the flight is being operated.

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

AMC1 SERA.6005(a)(1) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

ESTABLISHING TWO-WAY RADIOCOMMUNICATIONS

- (a) Two-way radiocommunications are considered to have been achieved once the pilot has provided the information required in the initial call and has received acknowledgement from ATS.
- (b) If a pilot is instructed to "STANDBY" following their initial call, two-way radiocommunications have not been achieved and the pilot should remain outside the RMZ until their initial call has been acknowledged by the ANSP.

AMC2 SERA.6005(a)(1) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

AIRCRAFT UNABLE TO COMPLY WITH THE REQUIREMENTS FOR ENTRY INTO A RADIO MANDATORY ZONE

- (a) Where aircraft are based at aerodromes or operating sites located within a RMZ and radio communications are not possible either prior to getting airborne, or at all, pilots of such flights should:
 - (1) seek to agree letters of agreement with the ANSP describing alternative provisions for compliance; and,
 - (2) establish two-way radio communications (where appropriate) at the earliest opportunity after take-off.

Acting in accordance with the provisions of such letters of agreement will be considered to constitute acting in compliance with SERA 6005(a)(1).

(b) ANSPs may permit aircraft to operate in a RMZ without the required radio communication equipment. Pilots should adhere to the procedures and conditions promulgated for the specific RMZ in the relevant aeronautical information publications by the ANSP (in circumstances other than sub-paragraph (a) above).

GM1 to AMC1 SERA.6005(a)(1) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

AIRCRAFT UNABLE TO COMPLY WITH THE REQUIREMENTS FOR ENTRY INTO A RADIO MANDATORY ZONE

Letters of Agreement should include a clear and unambiguous set of procedures to ensure the safety of flight within the RMZ and should be reviewed regularly, and at least triennially, except where analysis of air safety incidents indicates a need to undertake an immediate review.

GM2 to AMC1 SERA.6005(a)(1) Requirements for communications and SSR transponder

AIRCRAFT UNABLE TO COMPLY WITH THE REQUIREMENTS FOR ENTRY INTO A RADIO MANDATORY ZONE

Access to the RMZ for aircraft with no or non-functioning radio equipment is subject to the conditions prevailing at the time of the request. Such conditions include but are not limited to the types and density of air traffic operating or planned to operate within the RMZ and the actual or forecast meteorological conditions. Pilots are reminded to anticipate that they may not receive approval from the ANSP and plan their flight accordingly.

AMC1 SERA.6005(a)(2) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

ENTRY INTO A RADIO MANDATORY ZONE

In addition to those elements of the initial call described in SERA.6005(a)(2), pilots should report their flight rules and any other information as prescribed by the ANSP and published within the Aeronautical Information Publication (AIP).

GM1 to AMC1 SERA.6005(a)(2) Requirements for communications and SSR transponder

ENTRY INTO A RADIO MANDATORY ZONE

Radiotelephony phraseology relating to RMZ is detailed within AMC1 SERA.14001 Paragraph 7 and the Radiotelephony Manual (CAP 413) Chapter 9 Paragraph 9.49).

GM1 SERA.6005(a)(2) Requirements for communications and SSR transponder

ENTRY INTO A RADIO MANDATORY ZONE

Whenever practicable, pilots should seek to establish two-way communications with the ANSP when 15 NM or 5 minutes flying time from the RMZ boundary, whichever is the greater.

GM1 SERA.6005(b) Requirements for communications and SSR transponder

TRANSPONDER MANDATORY ZONE

A TMZ is established for overriding safety reasons where the airspace classification would not normally require the carriage of a transponder but where a change to a more restrictive classification of controlled airspace is not warranted. A TMZ creates a 'recognised air traffic environment' within which ATS, where provided, are more able to provide enhanced levels of safety to aircraft and can enable the operation of airborne and ground-based safety nets. The existence of a TMZ does not confer or suggest any particular airspace classification.

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

ORS9 CAA Decision No.10

GM2 SERA.6005(b) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

 CARRIAGE OF RADIO NAVIGATION EQUIPMENT
(a) The requirements for carriage of radio navigation equipment are detailed in UK Reg (EU) No 1207/2011 and Paragraphs (4)(d) and (5)(b) of the table in ANO 2016 Schedule 6 Part 2 (Scale E2)

refers). These requirements are summarised in AIP GEN 1.5 Section 5.3.1.3.

- (b) These highlight the requirement for flights operating in airspace designated by the CAA as a TMZ to carry and operate SSR Mode S Elementary Surveillance transponders, unless in compliance with alternative provisions prescribed for that particular airspace by the air navigation service provider (ANSP). Such alternative provisions may include the use of alternate forms of electronic conspicuity data, such as ADS-B, and that satisfies the pressure altitude reporting requirement for a TMZ, where their use has been addressed within the airspace change safety assessment.
- (c) AIP GEN 1.5 5.3.5.2 highlights that, in exceptional circumstances, an application for an exemption from the SSR Mode S Elementary Surveillance transponder requirement may be made.

GM1 SERA.6005(b)(1) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

ENTRY INTO A TRANSPONDER MANDATORY ZONE

- (a) Aircraft carrying and operating serviceable SSR Mode S Elementary Surveillance transponders or alternative forms of electronic conspicuity which meet the notified criteria may enter and transit a TMZ in class G airspace and are not required to satisfy additional entry conditions.
- (b) Aircraft wishing to enter TMZ in class E airspace are, additionally, required to comply with the requirements for flight within airspace of that classification.

AMC1 SERA.6005(b)(1) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

AIRCRAFT UNABLE TO COMPLY WITH THE REQUIREMENTS FOR ENTRY INTO A TRANSPONDER MANDATORY ZONE

Where aircraft are based at aerodromes or operating sites located within a TMZ and are unable to comply with the notified requirements for flight in a TMZ, pilots of such flights should seek to agree letters of agreement with the ANSP describing alternative provisions for compliance. Acting in accordance with the provisions of the letter of agreement will be considered to constitute acting in compliance with SERA 6005(b)(1).

GM1 to AMC1 SERA.6005(b)(1) Requirements for communications and transponder

ORS9 CAA Decision No.10

AIRCRAFT UNABLE TO COMPLY WITH THE REQUIREMENTS FOR ENTRY INTO A TRANSPONDER MANDATORY ZONE

Letters of Agreement should include a clear and unambiguous set of procedures to ensure the safety of flight within the TMZ and be reviewed regularly, and at least triennially, except where analysis of air safety incidents indicates a need to undertake an immediate review.

GM2 to AMC1 SERA.6005(b)(1) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

AIRCRAFT UNABLE TO COMPLY WITH THE REQUIREMENTS FOR ENTRY INTO A TRANSPONDER MANDATORY ZONE

Access to TMZ for aircraft that are unable to comply with the notified requirements for entry into a TMZ (see point (a) of GM2 to SERA.6005(b)) is subject to the conditions prevailing at the time of the request. Such conditions include but are not limited to the types and density of air traffic operating or planned to operate within the TMZ, and the actual or forecast meteorological conditions. Pilots of such aircraft are reminded to anticipate that they may not receive approval from the ANSP and should plan their flight accordingly.

AMC1 SERA.6005(c) Requirements for communications and SSR transponder

ORS9 CAA Decision No.10

PROMULGATION OF RMZ AND TMZ IN AERONAUTICAL INFORMATION PUBLICATIONS

- (a) For the purpose of ANO 2016 Schedule 5 Articles 15 and 17 respectively, RMZs and TMZs should be notified as follows:
 - (1) UK AIP:
 - (i) AIP ENR 2.2 Other Regulated Airspace;
 - (ii) AD 2.17 ATS Airspace (for RMZs/TMZs serving aerodromes); and
 - (iii) AIP ENR and AD charts as appropriate.
 - (2) Aeronautical Chart ICAO 1:500 000, Topographical Air Chart of the UK 1:250 000 and 1:50 000 VFR charts.
- (b) Establishment of a RMZ or TMZ should be supported by appropriate awareness materials which could include an associated NOTAM and Aeronautical Information Circular as appropriate.

SECTION 7 AIR TRAFFIC SERVICES

GM1 SERA.7001 General — Objectives of the air traffic services

GENERAL

These provisions are general statements which represent high-level safety objectives to be met when providing ATS and which are the basis of all the provisions of this Part.

AMC1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

INFORMATION REGARDING TRAFFIC ON CONFLICTING PATH

- (a) Information regarding traffic on a conflicting path should be given, whenever practicable, in the following form:
 - (1) relative bearing of the conflicting traffic in terms of the 12-hour clock;
 - (2) distance from the conflicting traffic in kilometres or nautical miles;
 - (3) direction in which the conflicting traffic appears to be proceeding; and
 - (4) level and type of aircraft or, if unknown, relative speed of the conflicting traffic, e.g. slow or fast.
- (b) Pressure-altitude-derived level information, even when unverified, should be used in the provision of collision hazard information because such information, particularly if available from an otherwise unknown aircraft (e.g. a VFR flight) and given to the pilot of a known aircraft, could facilitate the location of a collision hazard. If the level information has not been verified, the accuracy of the information should be considered uncertain and the pilot should be informed accordingly.

GM1 to (a)(1) of AMC1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

In cases where using the terms of the 12-hour clock is not practicable, like when the aircraft is turning, the direction of the unknown aircraft may be given by compass points, e.g. northwest, south, etc.;

GM1 to (a)(4) of AMC1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

The level may be described either as a flight level, altitude or height, or as a relative vertical distance from the aircraft provided with traffic information (e.g. 1 000 ft above or 1 000 ft below).

GM1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

INFORMATION REGARDING TRAFFIC ON CONFLICTING PATH OUTSIDE CONTROLLED AIRSPACE

When an identified IFR flight operating outside controlled airspace is observed to be on a conflicting path with another aircraft, the pilot should be:

- (a) informed of the traffic, and if so requested by the pilot or if, in the opinion of the controller, the situation warrants, a course of avoiding action should be suggested; and
- (b) notified when the conflict no longer exists.

GM2 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

The information presented on a situation display may be used to provide identified aircraft with information regarding any aircraft observed to be on a conflicting path with the identified aircraft, and suggestions or advice regarding avoiding action.

GM3 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

The provision of collision hazard information does not absolve pilots of VFR flights from their responsibilities for avoiding terrain/obstacles and for maintaining visual meteorological conditions.

GM4 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

Collision hazard information should be provided where practicable. This should be done taking account of the priorities related to various tasks, such as provision of separation in accordance with the airspace classification, as well as equipment and workload limitations.

GM1 SERA.7005(a) Coordination between the aircraft operator and air traffic services

GENERAL

The expression 'due regard' is meant to indicate that the air traffic services units, in their coordination with the aircraft operators, should take into account the obligations of the operators in accordance with the United Kingdom's rules on air operations, and provide them with the information they require to operate in accordance with those rules.

SECTION 8 AIR TRAFFIC CONTROL SERVICE

GM1 SERA.8005(b) Operation of air traffic control service

CLEARANCES TO MAINTAIN OWN SEPARATION

Clearances for a pilot to maintain own separation in respect of a specific portion of the flight in airspace Classes D and E below 3 050 m (10 000 ft) during climb or descent, during day in visual meteorological conditions are based on the fact that in those airspace classes a speed restriction of 250 kt is applied to all flights, allowing pilots of both aircraft to observe other flights in time to avoid collision.

GM1 SERA.8010(b) Separation minima

GENERAL

The purpose of this provision is to ensure, in the first case, compatibility on both sides of the line of transfer of traffic and, in the other case, adequate separation between aircraft operating on both sides of the common boundary.

GM1 SERA.8015(a) Air traffic control clearances

Clearances to VFR flights in airspace classes C and D do not imply any form of separation:

- (a) in Class C between VFR flights; and
- (b) in Class D between IFR and VFR flights or between VFR flights.

For the case of special VFR flights, refer to **SERA.8005(b)**.

GM1 SERA.8015(b)(4) Air traffic control clearances

OPERATION SUBJECT TO CLEARANCE — POTENTIAL RECLEARANCE IN FLIGHT

The intent of the provision relating to potential reclearance is to facilitate reclearance to a revised destination, normally beyond the filed destination aerodrome.

GM1 SERA.8015(d)(5) Air traffic control clearances

CONTENT OF THE CLEARANCES — TIME OF EXPIRY

The time of expiry of the clearance indicates the time after which the clearance will be automatically cancelled if the flight has not been commenced.

GM1 SERA.8015(e)(1) Air traffic control clearances

The nature of the change should include a description of the route and levels to the point where it joins the previously cleared route, or, if the aircraft will not re-join the previous route, to the destination.

GM1 SERA.8015(e)(4) Air traffic control clearances

READ-BACK OF CPDLC MESSAGES

When so indicated by local safety assessments, ANSP may require that the receipt of some of the CPDLC message types (in particular those addressing trajectory changes) be acknowledged by voice.

GM1 SERA.8015(f)(2) Air traffic control clearances

PROVISIONS FOR CLEARANCES AND INSTRUCTIONS — ALTIMETRY

The provision of transition level may be accomplished by voice communications, ATIS broadcast or data link.

GM1 SERA.8015(f)(4) Air traffic control clearances

COORDINATION OF CLEARANCES — DOWNSTREAM CLEARANCE

- (a) In such cases it is assumed that contact of a downstream ATC unit is initiated by the pilot. Therefore, the rules require that the aircraft maintain the necessary two-way communication with the current ATC unit.
- (b) In cases where an aircraft cannot maintain two-way communication whilst obtaining a downstream clearance, the pilot needs to seek the acceptance to leave momentarily the communication channel of the current ATC unit prior to contacting a downstream ATC unit.

GM1 SERA.8015(g) Air traffic control clearances

CONDITIONAL CLEARANCES

An example of a conditional clearance is 'SCANDINAVIAN 941, BEHIND DC9 ON SHORT FINAL, LINE UP BEHIND'. This implies the need for the aircraft receiving the conditional clearance to identify the aircraft or vehicle causing the conditional clearance.

GM1 SERA.8025(a)(2) Position reports

RESUMPTION OF CPDLC POSITION REPORTING

The resumption of controller–pilot data link communications (CPDLC) position reporting can be achieved through automatic dependent surveillance — contract (ADS-C).

GM1 SERA.8035(a) Communications

GENERAL

In a HF environment, SELCAL or similar automatic signalling devices satisfy the requirement tomaintain an air-ground voice communication watch.

(a) An aircraft may be permitted to communicate temporarily with a control unit other than the unit controlling the aircraft.
AMC1 SERA.8035 Communications

ESTABLISHMENT OF PILOT-CONTROLLER COMMUNICATIONS

Direct pilot–controller communications should be established prior to the provision of ATSsurveillance services unless special circumstances, such as emergencies, dictate otherwise.

AMC2 SERA.8035 Communications

ACKNOWLEDGEMENT OF MESSAGES

- (a) When a CPDLC emergency message is received, the controller shall acknowledge receipt of the message by the most efficient means available.
- (b) Except as provided by (a), when a controller or pilot communicates via CPDLC, the response should be via CPDLC. When a controller or pilot communicates via voice, the response should be via voice.

SECTION 9 FLIGHT INFORMATION SERVICE

GM1 SERA.9005(b)(1) Scope of flight information service

INFORMATION RELATED TO WEATHER CONDITIONSAT DEPARTURE, DESTINATION, AND ALTERNATE AERODROMES

Pilots normally obtain information on the weather conditions from the appropriate office before the flight. When available, outstanding or safety-relevant information is normally provided by radio communication within 60 minutes from the aerodrome of destination unless the information has been made available through other means.

GM1 SERA.9005(b)(2) Scope of flight information service

INFORMATION RELATED TO COLLISION HAZARDS

Information relating to collision hazards includes only known activities that constitute risks to the aircraft concerned. The availability of such information to air traffic services may sometimes be incomplete (e.g. limitations in radar or radio coverage, optional radio contact by pilots, limitations in the accuracy of reported information by pilots, or unconfirmed level of information) and, therefore, air traffic services cannot assume responsibility for its issuance at all times or for its accuracy.

SECTION 10 ALERTING SERVICE

GM1 SERA.10001(b) Application

The absence of an 'operations normal' message does not constitute a situation of urgency. In the absence of such a report, ATS should endeavour to contact the aircraft on available frequencies. A failure to contact the aircraft could lead to any type of measure including the declaration of 'uncertainty phase'.

SECTION 11 INTERFERENCE, EMERGENCY CONTINGENCIES AND INTERCEPTION

GM1 SERA.11001 General

EMERGENCY DESCENT PROCEDURES

When an aircraft operated as a controlled flight experiences sudden decompression or amalfunction requiring an emergency descent, the aircraft should, if able:

- (1) initiate a turn away from the assigned route or track before commencing the emergency descent;
- (2) advise the appropriate ATC unit as soon as possible of the emergency descent;
- (3) set transponder to Code 7700 and select the emergency mode on the automatic dependent surveillance/controller–pilot data link communications (ADS/CPDLC) system, if applicable;
- (4) turn on aircraft exterior lights;
- (5) watch for conflicting traffic both visually and by reference to airborne collision avoidance system (ACAS) (if equipped); and
- (6) coordinate its further intentions with the appropriate ATC unit.
- (b) The aircraft is not to descend below the lowest published minimum altitude that will provide a minimum vertical clearance of 300 m (1 000 ft) or, in designated mountainous terrain, of 600 m (2 000 ft) above all obstacles located in the area specified.
- (c) Immediately upon recognising that an emergency descent is in progress, ATC units are to acknowledge the emergency on radiotelephony.

In particular, when recognising that an emergency descent is in progress, ATC may, as required by the situation:

- (1) suggest a heading to be flown, if able, by the aircraft carrying out the emergency descent in order to achieve separation from other aircraft concerned;
- (2) state the minimum altitude for the area of operation, only if the level-off altitude stated by the pilot is below such minimum altitude, together with the applicable QNH altimeter setting; and
- (3) as soon as possible, provide separation from conflicting traffic, or issue essential traffic information, as appropriate.

When deemed necessary, ATC will broadcast an emergency message, or cause such message to be broadcast, to other aircraft concerned to warn them of the emergency descent.

AMC1 SERA.11005 Unlawful interference

(a) Whenever unlawful interference with an aircraft is known or suspected or a bomb threat warning has been received, ATS units should promptly attend to requests by, or to anticipated needs of, the aircraft, including requests for relevant information relating to air navigation facilities, procedures and services along the route of flight and at any aerodrome of intended landing, and should take such action as is necessary to expedite the conduct of all phases of the

flight.

ATS units should also:

- (1) transmit, and continue to transmit, information pertinent to the safe conduct of the flight, without expecting a reply from the aircraft;
- (2) monitor and plot the progress of the flight with the means available, and coordinate transfer of control with adjacent ATS units without requiring transmissions or other responses from the aircraft, unless communication with the aircraft remains normal;
- (3) inform, and continue to keep informed, appropriate ATS units, including those in adjacent flight information regions (FIRs), which may be concerned with the progress of the flight;
- (4) notify:
 - (i) the operator or its designated representative;
 - (ii) the appropriate rescue coordination centre in accordance with appropriate alerting procedures; and
 - (iii) the appropriate authority designated by the State; and
- (5) relay appropriate messages, relating to the circumstances associated with the unlawful interference, between the aircraft and designated authorities.
- (b) The following additional procedures should apply if a threat is received indicating that a bomb or other explosive device has been placed on board a known aircraft. The ATS unit receiving the threat information should:
 - (1) if in direct communication with the aircraft, advise the flight crew without delay of the threat and the circumstances surrounding the threat; or
 - (2) if not in direct communication with the aircraft, advise the flight crew by the most expeditious means through other ATS units or other channels.
- (c) The ATS unit in communication with the aircraft should ascertain the intentions of the flight crew and report those intentions to other ATS units which may be concerned with the flight.
- (d) The aircraft should be handled in the most expeditious manner while ensuring, to the extent possible, the safety of other aircraft and that personnel and ground installations are not put at risk.
- (e) Aircraft in flight should be given re-clearance to a requested new destination without delay. Any request by the flight crew to climb or descend for the purpose of equalising or reducing the differential between the outside air pressure and the cabin air pressure should be approved as soon as possible.
- (f) An aircraft on the ground should be advised to remain as far away from other aircraft and installations as possible and, if appropriate, to vacate the runway. The aircraft should be instructed to taxi to a designated or isolated parking area in accordance with local instructions. Should the flight crew disembark passengers and crew immediately, other aircraft, vehicles and personnel should be kept at a safe distance from the threatened aircraft.
- (g) ATS units should not provide any advice or suggestions concerning action to be taken by the flight crew in relation to an explosive device.
- (h) An aircraft known or believed to be the subject of unlawful interference or which for other reasons needs isolation from normal aerodrome activities should be cleared to the designated isolated parking position. Where such an isolated parking position has not been designated, or if the designated position is not available, the aircraft should be cleared to a position within the

area or areas selected by prior agreement with the aerodrome authority. The taxi clearance should specify the taxi route to be followed to the parking position. This route should be selected with a view to minimising any security risks to the public, other aircraft and installations at the aerodrome.

GM1 to AMC1 SERA.11005(a)(1) Unlawful interference

Verbal reference to unlawful interference should not be made by the controller unless it is first made by the pilot in a radio communication transmission, since it might attract the attention of the hijacker (or of other aircraft) and have detrimental consequences.

GM1 SERA.11005 Unlawful interference

The following procedures are intended as guidance for use by aircraft when unlawful interference occurs and the aircraft is unable to notify an ATS unit of this fact.

- (a) If the pilot-in-command cannot proceed to an aerodrome, they should attempt to continue flying on the assigned track and at the assigned cruising level at least until able to notify an ATS unit or until within radar or ADS-B coverage.
- (b) When an aircraft subjected to an act of unlawful interference must depart from its assigned track or its assigned cruising level without being able to make radiotelephony contact with ATS, the pilot-in-command should, whenever possible:
 - (1) attempt to broadcast warnings on the VHF channel in use or the VHF emergency frequency, and other appropriate channels, unless considerations aboard the aircraft dictate otherwise. Other equipment such as on-board transponders and data links should also be used when it is advantageous to do so and circumstances permit; and
 - (2) proceed in accordance with applicable special procedures for in-flight contingencies, where such procedures have been established and promulgated in the Regional Supplementary Procedures (Doc 7030); or
 - (3) if no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for an IFR flight by:
 - (i) 150 m (500 ft) in an area where a vertical separation minimum of 300 m (1 000 ft) is applied; or
 - (ii) 300 m (1 000 ft) in an area where a vertical separation minimum of 600 m (2 000 ft) is applied.

GM1 SERA.11010 Strayed or unidentified aircraft

GENERAL

- (a) An aircraft may be considered, at the same time, as a 'strayed aircraft' by one unit and as an 'unidentified aircraft' by another unit. This possibility should be taken into account when complying with the provisions of SERA.11010(a)(1)(iii) and SERA.11010(b)(2) and (b)(3).
- (b) Navigational assistance by an air traffic services unit is particularly important if the unit becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its safety.

GM1 SERA.11012 Minimum fuel and fuel emergency

The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing, and any change to the existing clearance may result in landing with less than planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

GM1 SERA.11013(b) Degraded aircraft performance

DEGRADATION OR FAILURE OF THE RNAV SYSTEM

(a) If an aircraft cannot meet the requirements due to a failure or degradation of the RNAV system that is detected before departure from an aerodrome where it is not practicable to effect a repair, the aircraft concerned should be permitted to proceed to the nearest suitable aerodrome where the repair can be made. When granting clearance to such aircraft, ATC should

take into consideration the existing or anticipated traffic situation and may have to modify the time of departure, flight level or route of the intended flight. Subsequent adjustments may become necessary during the course of the flight.

With respect to the degradation/failure in flight of an RNAV system, while the aircraft is operating on an ATS route requiring the use of RNAV 5:

- (1) aircraft should be routed via VOR/DME-defined ATS routes; or
- (2) if no such routes are available, aircraft should be routed via conventional navigation aids, i.e. VOR/DME; or

When the above procedures are not feasible, the ATC unit should, where practicable, provide the aircraft with radar vectors until the aircraft is capable of resuming its own navigation.

With respect to the degradation/failure in flight of an RNAV system, while the aircraft is operating on an arrival or departure procedure requiring the use of RNAV:

- (1) the aircraft should be provided with radar vectors until the aircraft is capable of resuming its own navigation; or
- (2) the aircraft should be routed by conventional navigation aids, i.e. VOR/DME.

Subsequent ATC action in respect of an aircraft that cannot meet the specified requirements due to a failure or degradation of the RNAV system, will be dependent upon the nature of the reported failure and the overall traffic situation. Continued operation in accordance with the current ATC clearance may be possible in many situations. When this cannot be achieved, a revised clearance may be required to revert to VOR/DME navigation.

GM1 SERA.11013(c) Degraded aircraft performance

LOSS OF VERTICAL NAVIGATION PERFORMANCE REQUIRED FOR RVSM

An in-flight contingency affecting flight in RVSM airspace pertains to unforeseen circumstances that directly impact on the ability of one or more aircraft to operate in accordance with the vertical navigation performance requirements of RVSM airspace.

GM1 SERA.11014 ACAS resolution advisory (RA)

Nothing in the procedures specified in **SERA.11014** should prevent pilots-in-command from exercising their best judgement and full authority in the choice of the best course of action to resolve a traffic conflict or avert a potential collision.

GM2 SERA.11014 ACAS resolution advisory (RA)

The ability of ACAS to fulfil its role of assisting pilots in the avoidance of potential collisions is dependent on the correct and timely response by pilots to ACAS indications. Operational experience has shown that the correct response by pilots is dependent on the effectiveness of the initial and recurrent training in ACAS procedures.

GM3 SERA.11014 ACAS resolution advisory (RA)

Pilots should not manoeuvre their aircraft in response to traffic advisories (TAs) only.

GM4 SERA.11014 ACAS resolution advisory (RA)

Visually acquired traffic may not be the same traffic causing an RA. The visual perception of an encounter may be misleading, particularly at night.

GM5 SERA.11014 ACAS resolution advisory (RA)

In the case of an ACAS–ACAS coordinated encounter, the RAs complement each other in order to reduce the potential for a collision. Manoeuvres, or lack of manoeuvres, that result in vertical rates opposite to the sense of an RA could result in a collision with the intruder aircraft.

GM6 SERA.11014 ACAS resolution advisory (RA)

Unless informed by the pilot, ATC does not know when ACAS issues RAs. It is possible for ATC to issue instructions that are unknowingly contrary to ACAS RA indications. Therefore, it is important that ATC be notified when an ATC instruction or clearance is not being followed because it conflicts with an RA.

GM7 SERA.11014 ACAS resolution advisory (RA)

Pilots should use appropriate procedures by which an aeroplane climbing or descending to an assigned altitude or flight level may do so at a rate less than 8 m/s (or 1 500 ft/min) throughout the last 300 m (or 1 000 ft) of climb or descent to the assigned altitude or flight level when the pilot is made aware of another aircraft at or approaching an adjacent altitude or flight level, unless otherwise instructed by ATC. These procedures are intended to avoid unnecessary ACAS II RAs in aircraft at or approaching adjacent altitudes or flight levels. For commercial operations, these procedures should be specified by the operator.

GM2 SERA.11015 Interception

- 1. General
 - 1.1 Interception of civil aircraft should be avoided and should be undertaken only as a last resort. If undertaken, the interception should be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome. Practice interception of civil aircraft is not to be undertaken unless prior agreement has been reached to conduct such activity with the pilot and operator of the civil aircraft concerned.
 - 1.2 To eliminate or reduce the need for interception of civil aircraft, it is important that:
 - (a) all possible efforts be made by intercept control units to secure identification of any aircraft which may be a civil aircraft, and to issue any necessary instructions or advice to such aircraft, through the appropriate ATS units. To this end, it is essential that means of rapid and reliable communications between intercept control units and ATS units be established and that agreements be formulated concerning exchanges of information between such units on the movements of civil aircraft, in accordance with the provisions of SERA.4001(b)(4), SERA.11010(a)(1)(iv), SERA.11010(a)(3)(ii), SERA.11010(b), and SERA.11010(b)(5);
 - (b) areas prohibited to all civil flights and areas in which civil flight is not permitted without special authorisation by the State be clearly promulgated in the AIP together with the risk, if any, of interception in the event of penetration of such areas. When delineating such areas in close proximity to promulgated ATS routes, or other frequently used tracks, account should be taken of the availability and overall systems accuracy of the navigation systems to be used by civil aircraft and their ability to remain clear of the delineated areas;
 - (c) the establishment of additional navigation aids be considered where necessary to ensure that civil aircraft are able to safely circumnavigate prohibited or, as required, restricted areas.
 - 1.3 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure coordinated actions by the pilots and ground units concerned. To this end, it is essential that steps be taken to ensure that:
 - (a) all pilots of civil aircraft are made fully aware of the actions to be taken by them and the visual signals to be used;
 - (b) operators or pilots-in-command of civil aircraft implement the capability of aircraft to communicate on 121,5 MHz and the availability of interception procedures and visual signals on board aircraft,
 - (c) all ATS personnel are made fully aware of the actions to be taken by them in accordance with the provisions of SERA.4001(b)(4), SERA.11010(a)(1)(iv), SERA.11010(a)(3)(ii), SERA.11010(b) and SERA.11010(b)(5);
 - (d) all pilots-in-command of intercepting aircraft are made aware of the general performance limitations of civil aircraft and of the possibility that intercepted civil aircraft may be in a state of emergency due to technical difficulties or unlawful interference;

(e) clear and unambiguous instructions are issued to intercept control units and to pilots-in-command of potential intercepting aircraft, covering interception manoeuvres, guidance of intercepted aircraft, action by intercepted aircraft, air- to-air visual signals, radio-communication with intercepted aircraft, and the need to refrain from resorting to the use of weapons;

Note. See paragraphs 2 to 6.

- (f) intercept control units and intercepting aircraft are provided with radiotelephony equipment so as to enable them to communicate with intercepted aircraft on the emergency frequency 121,5 MHz,
- (g) secondary surveillance radar and/or ADS-B facilities are made available to the extent possible to permit intercept control units to identify civil aircraft in areas where they might otherwise be intercepted. Such facilities should permit recognition of aircraft identity and immediate recognition of any emergency or urgency conditions.
- 2. Interception manoeuvres
 - 2.1 A standard method should be established for the manoeuvring of aircraft intercepting a civil aircraft in order to avoid any hazard for the intercepted aircraft. Such method should take due account of the performance limitations of civil aircraft, the need to avoid flying in such proximity to the intercepted aircraft that a collision hazard may be created, and the need to avoid crossing the aircraft's flight path or to perform any other manoeuvre in such a manner that the wake turbulence may be hazardous, particularly if the intercepted aircraft is a light aircraft.
 - 2.2 An aircraft equipped with an ACAS, which is being intercepted, may perceive the interceptor as a collision threat and thus initiate an avoidance manoeuvre in response to an ACAS RA. Such a manoeuvre might be misinterpreted by the interceptor as an indication of unfriendly intentions. It is important therefore that pilots of intercepting aircraft equipped with a secondary surveillance radar (SSR) transponder suppress the transmission of pressure-altitude information (in Mode C replies or in the AC field of Mode S replies) within a range of at least 37 km (20 NM) of the aircraft being intercepted. This prevents the ACAS in the intercepted aircraft from using RAs in respect of the interceptor, while the ACAS traffic advisory information will remain available.
 - 2.3 Manoeuvres for visual identification

The following method is recommended for the manoeuvring of intercepting aircraft for the purpose of visually identifying a civil aircraft:

Phase I

The intercepting aircraft should approach the intercepted aircraft from astern. The element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, within the field of view of the pilot of the intercepted aircraft, and initially not closer to the aircraft than 300 m. Any other participating aircraft should stay well clear of the intercepted aircraft, preferably above and behind. After speed and position have been established, the aircraft should, if necessary, proceed with Phase II of the procedure.

Phase II

The element leader, or the single intercepting aircraft, should begin closing in gently on the intercepted aircraft, at the same level, until no closer than absolutely necessary to

obtain the information needed. The element leader, or the single intercepting aircraft, should use caution to avoid startling the flight crew or the passengers of the intercepted aircraft, keeping constantly in mind the fact that manoeuvres considered normal to an intercepting aircraft may be considered hazardous to passengers and crews of civil aircraft. Any other participating aircraft should continue to stay well clear of the intercepted aircraft. Upon completion of identification, the intercepting aircraft should withdraw from the vicinity of the intercepted aircraft as outlined in Phase III.

Phase III

The element leader, or the single intercepting aircraft, should break gently away from the intercepted aircraft in a shallow dive. Any other participating aircraft should stay well clear of the intercepted aircraft and re-join their leader.

- 2.4 Manoeuvres for navigational guidance
 - 2.4.1 If, following the identification manoeuvres in Phase I and Phase II above, it is considered necessary to intervene in the navigation of the intercepted aircraft, the element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, to enable the pilot-in-command of the latter aircraft to see the visual signals given.
 - 2.4.2 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given. If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series 1 signal in Table S11-1, are unsuccessful, other methods of signalling may be used for this purpose, including as a last resort the visual effect of the reheat/afterburner, provided that no hazard is created for the intercepted aircraft.
- 2.5 It is recognised that meteorological conditions or terrain may occasionally make it necessary for the element leader, or the single intercepting aircraft, to take up a position on the right (starboard) side, slightly above and ahead of the intercepted aircraft. In such case, the pilot-in-command of the intercepting aircraft must take particular care that the intercepting aircraft is clearly visible at all times to the pilot-in-command of the intercepted aircraft.
- 3. Guidance of an intercepted aircraft
 - 3.1 Navigational guidance and related information should be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.
 - 3.2 When navigational guidance is given to an intercepted aircraft, care must be taken that the aircraft is not led into conditions where the visibility may be reduced below that required to maintain flight in visual meteorological conditions and that the manoeuvres demanded of the intercepted aircraft do not add to already existing hazards in the event that the operating efficiency of the aircraft is impaired.
 - 3.3 In the exceptional case where an intercepted civil aircraft is required to land in the territory overflown, care must also be taken that:
 - the designated aerodrome is suitable for the safe landing of the aircraft type concerned, especially if the aerodrome is not normally used for civil air transport operations;
 - (b) the surrounding terrain is suitable for circling, approach and missed approach manoeuvres;

- (c) the intercepted aircraft has sufficient fuel remaining to reach the aerodrome;
- (d) if the intercepted aircraft is a civil transport aircraft, the designated aerodrome has a runway with a length equivalent to at least 2 500 m at MSL and a bearing strength sufficient to support the aircraft; and
- (e) whenever possible, the designated aerodrome is one that is described in detail in the relevant AIP.
- 3.4 When requiring a civil aircraft to land at an unfamiliar aerodrome, it is essential that sufficient time be allowed for it to prepare for a landing, bearing in mind that only the pilot-in-command of the civil aircraft can judge the safety of the landing operation in relation to runway length and aircraft mass at the time.
- 3.5 It is particularly important that all information necessary to facilitate a safe approach and landing be given to the intercepted aircraft by radiotelephony.
- 4. Air-to-air visual signals

The visual signals to be used by intercepting and intercepted aircraft are those set forth in Tables S11-1 and S11-2. It is essential that intercepting and intercepted aircraft adhere strictly to those signals and interpret correctly the signals given by the other aircraft, and that the intercepting aircraft pay particular attention to any signals given by the intercepted aircraft to indicate that it is in a state of distress or urgency.

- 5. Radio communication between the intercept control unit or the intercepting aircraft and the intercepted aircraft
 - 5.1 When an interception is being made, the intercept control unit and the intercepting aircraft should:
 - (a) first attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121,5 MHz, using the call signs 'INTERCEPT CONTROL', 'INTERCEPTOR (call sign)' and 'INTERCEPTED AIRCRAFT' respectively, and
 - (b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the competent authority, or to establish contact through the appropriate ATS unit(s).
 - 5.2 If radio contact is established during interception, but communication in a common language is not possible, attempts must be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table S11-3 and transmitting each phrase twice.
- 6. Refraining from the use of weapons

The use of tracer bullets to attract attention is hazardous, and it is expected that measures will be taken to avoid their use so that the lives of persons on board and the safety of aircraft will not be endangered.

7. Coordination between intercept control units and ATS units

It is essential that close coordination be maintained between an intercept control unit and the appropriate ATS unit during all phases of an interception of an aircraft which is, or might be, a civil aircraft, in order for the ATS unit to be kept fully informed of the developments and of the action required of the intercepted aircraft.

AMC1 SERA.11015(a) Interception

REGULATIONS AND ADMINISTRATIVE DIRECTIVES ISSUED BY MEMBER STATES GOVERNING INTERCEPTION OF CIVIL AIRCRAFT

- (a) In accordance with the provisions on interception of civil aircraft in Annex 2 to the Convention on the International Civil Aviation, the national provisions put in place under SERA.11015(a) should ensure that:
 - (1) interception of civil aircraft is undertaken only as a last resort;
 - (2) an interception is limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or congested areas, or instruct it to effect a landing at a designated aerodrome;
 - (3) practice interception of civil aircraft is not undertaken, unless it has been previously agreed with the pilot-in-command of the aircraft to be intercepted and ATC has been informed accordingly that the interception is to take place;
 - (4) navigational guidance and related information is given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and
 - (5) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is suitable for the safe landing of the aircraft type concerned.
- (b) Member States should publish a standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft. Such method should be designed to avoid any hazard for the intercepted aircraft.
- (c) Member States should ensure that provision is made for the use of secondary surveillance radar or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.

GM1 SERA.11015(a) Interception

REGULATIONS AND ADMINISTRATIVE DIRECTIVES ISSUED BY MEMBER STATES GOVERNING INTERCEPTION OF CIVIL AIRCRAFT

Member States that comply with an alternative means of compliance different from AMC1 SERA.11015(a) Interception over the territory and territorial waters of the State are required to notify ICAO of a difference to ICAO Annex 2. Over the high seas ICAO Annex 2 is to be applied without exception in accordance with the Chicago Convention and SERA.1001(a).

ANNEX: Rules of the Air

SECTION 12 Services related to meteorology — Aircraft observations and reports by voice communications

SECTION 12 SERVICES RELATED TO METEOROLOGY — AIRCRAFT OBSERVATIONS AND REPORTS BY VOICE COMMUNICATIONS

GM1 SERA.12005(c) Special aircraft observations

In a busy environment where the transmission of complete special aircraft observations would have a negative impact on the frequency occupancy, ATC may instruct the aircraft to make the complete report on an alternative frequency.

AMC1 SERA.12020 Exchange of air-reports

SPECIAL AIR-REPORTS

Special air-reports should be transmitted with the least possible delay to aircraft likely to be affected and should cover the portion of the route up to one hour's flying time ahead of the aircraft.

GM1 SERA.12020(a)(3) Exchange of air-reports

OTHER ATS UNITS CONCERNED

Other ATS units concerned are those that have flights under their jurisdiction which are expected to enter the airspace concerned at a later stage of flight. Those flights could, for instance, require rerouting before entering the airspace concerned. As an example, a special air-report concerning volcanic ash or volcanic eruption could be necessary to transmit to aircraft by ATS units in the FIR adjacent to that affected by the air-report.

SECTION 13 SSR TRANSPONDER

GM1 SERA.13001 Operation of an SSR transponder

Pilots of aircraft engaged in formation join-ups are expected to continue operating the transponder until established in formation. Once established in formation, all except the lead aircraft should be instructed to 'squawk standby'.

GM1 SERA.13001(c) Operation of an SSR transponder

Pilots of non-powered aircraft are also encouraged to operate the transponder during flight outside airspace where carriage and operation of SSR transponder is mandatory.

GM1 SERA.13005(a) SSR transponder Mode A code setting

If a pilot has selected Mode A Code 7500 and has been requested to confirm this code by ATC, the pilot should, according to circumstances, either confirm this or not reply at all. If the pilot does not reply, ATC should take this as confirmation that the use of Code 7500 is not an inadvertent false code selection.

AMC1 SERA.13005(c) SSR transponder Mode A code setting

When requested by ATC to confirm the code selected, the pilot should:

- (a) verify the Mode A code setting on the transponder;
- (b) reselect the assigned code if necessary; and
- (c) confirm to ATC the setting displayed on the controls of the transponder.

GM1 SERA.13010(b) Pressure-altitude-derived information

ERRONEOUS LEVEL INFORMATION

- (a) If the displayed level information is not within the approved tolerance value or when a discrepancy in excess of the approved tolerance value is detected subsequent to verification, the pilot should be advised accordingly and requested to check the pressure setting and confirm the aircraft's level.
- (b) If, following confirmation of the correct pressure setting, the discrepancy continues to exist, the following action should be taken by ATC according to circumstances:
 - (1) request the pilot to select and operate an alternative transponder, if available, and reverify that the displayed level information is within the approved tolerance; or
 - (2) request the pilot to stop Mode C or ADS-B altitude data transmission, provided this does not cause the loss of position and identity information, and notify the next control positions or ATC unit concerned with the aircraft of the action taken; or
 - (3) inform the pilot of the discrepancy and request that the relevant operation continue in order to prevent loss of position and identity information of the aircraft and, when so

prescribed by the local instructions, override the label-displayed level information with the reported level. In addition, the ATC unit should notify the next control position or ATC unit concerned with the aircraft of the action taken.

(c) It should be highlighted that ACAS will accept mode C replies that are erroneous, and it is possible to issue an RA based on these inputs. When the measures described in (b)(1) cannot be implemented, the controller should take into account the likelihood of generating ACAS RA in the provision of ATS.

GM1 SERA.13020(a) SSR transponder failure when the carriage of a functioning transponder is mandatory

TRANSPONDER FAILURE AFTER DEPARTURE

When an aircraft experiencing transponder failure after departure is operating or expected to operate in an area where the carriage of a functioning transponder with specified capabilities is mandatory, the ATC units concerned should endeavour to provide for continuation of the flight to the aerodrome of first intended landing in accordance with the flight plan. However, in certain traffic situations, either in terminal areas or en-route, continuation of the flight may not be possible, particularly when failure is detected shortly after take-off. The aircraft may then be required to return to the departure aerodrome or to land at the nearest suitable aerodrome acceptable to the operator concerned and to ATC.

GM1 SERA.13020(b) SSR transponder failure when the carriage of a functioning transponder is mandatory

TRANSPONDER FAILURE BEFORE DEPARTURE

In case of a transponder failure which is detected before departure from an aerodrome where it is not practicable to effect a repair, the aircraft concerned should be permitted to proceed, as directly as possible, to the nearest suitable aerodrome where repair can be made. When granting clearance to such aircraft, ATC should take into consideration the existing or anticipated traffic situation and may have to modify the time of departure, flight level or route of the intended flight. Subsequent adjustments may become necessary during the course of the flight.

¹ Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky (OJ L 305, 23.11.2011, p. 35).

SECTION 14 VOICE COMMUNICATION PROCEDURES

AMC1 SERA.14001 General

For standardised phraseology, refer to the **Appendix I**.

GM1 SERA.14001 for Appendix 1 General

The phraseology in **AMC1 SERA.14001** does not include phrases and regular radiotelephony procedure words contained in SERA Section 14.

Words in parentheses indicate that specific information, such as a level, a place or a time, etc. must be inserted to complete the phrase, or alternatively that optional phrases may be used. Words in square parentheses indicate optional additional words or information that may be necessary in specific instances.

Appendix 1 to AMC1 SERA.14001 General

1. ATC PHRASEOLOGIES

1.1 General

	Circumstances	Phraseologies
1.1.1	Description of levels (subsequently referred to as '(<i>level</i>)')	a) FLIGHT LEVEL (number); or b) [HEIGHT] (number) METRES; or c) [ALTITUDE] (number) FEET.
	Note.— In circumstances where clarification is required, the word 'ALTITUDE' or 'HEIGHT' may be included, e.g. 'DESCEND TO ALTITUDE TWO THOUSAND FEET'.	d) (number) FEET/METRES ABOVE (or BELOW)
	when passing level information in form of vertical distance from the other traffic	
1.1.2	Level changes, reports and	a) CLIMB (or DESCEND);
	rates	followed as necessary by: 1) TO [HEIGHT or ALTITUDE] (level)
	instruction that a climb (or	2) FLIGHT LEVEL (level)
	descent) to a level within the	3) TO AND MAINTAIN BLOCK (level) TO (level);
	vertical range defined is to	4) TO REACH (level) AT (or BY) (time or significant
	commence	5) REPORT LEAVING (<i>or</i> REACHING, <i>or</i> PASSING) (<i>level</i>);
		6) AT (number) METRES PER SECOND (or FEET PER
		WINUTE) [UK GKEATEK (OF UK LESS)]; 7) REPORT STARTING ACCELERATION (or
		DECELERATION).

	procedur
for SST aircraft only to require action at a specific time or place to require action when convenient to require an aircraft to climb or descend maintaining own separation and VMC when there is doubt that an aircraft can comply with a clearance or instruction when a pilot is unable to comply with a clearance or instruction after a flight crew starts to deviate from any ATC clearance or instruction to comply with an ACAS resolution advisory (RA) (Pilot and controller interchange) after the response to an ACAS RA is completed and a	 b) MAINTAIN AT LEAST (number) METRES (or FEET) ABOVE (or BELOW)(aircraft call sign); c) REQUEST LEVEL (or FLIGHT LEVEL or ALTITUDE) CHANGE FROM (name of unit) [AT (time or significant point)]; d) STOP CLIMB (or DESCENT) AT (level); e) CONTINUE CLIMB (or DESCENT) TO (level); f) EXPEDITE CLIMB (or DESCENT) [UNTIL PASSING (level)]; g) WHEN READY, CLIMB (or DESCEND) TO (level); h) EXPECT CLIMB (or DESCENT) AT (time or significant point); *i) REQUEST DESCENT AT (time); j) IMMEDIATELY; k) AFTER PASSING (significant point); i) AT (time or significant point); m) WHEN READY (instruction); n) MAINTAIN OWN SEPARATION AND VMC [FROM (level)] [TO (level)]; o) MAINTAIN OWN SEPARATION AND VMC ABOVE (or BELOW, or TO) (level); p) IF UNABLE, (alternative instructions) AND ADVISE; *q) UNABLE; *t) CLEAR OF CONFLICT, RETURNING TO (assigned clearance);
to require an aircraft to	p) ΜΑΙΝΙΤΑΙΝ Ο\/Ν SEDARATION AND \/ΜC [EROM
to require an ancrat to	
climb of descend maintaining	
own separation and vivic	(orBELOW or TO) (level).
when there is doubt that an	p) IF UNABLE, (alternative instructions) AND ADVISE;
aircraft can comply with a	
clearance or instruction	
when a pilot is unable to	*q) UNABLE;
comply with a clearance or	
instruction	
after a flight crew starts to	*r) TCAS RA;
clearance or instruction to	
comply with an ACAS	
resolution advisory (RA) (Pilot	
and controller interchange)	
after the response to an	*t) CLEAR OF CONFLICT, RETURNING TO (assigned
ACAS RA is completed and a	clearance);
instruction is initiated (Pilot	u) ROGER (of allernative instructions);
and controller interchange)	
after the response to an	*v) CLEAR OF CONFLICT (assigned clearance)
ACAS RA is completed and the	RESUMED;
assigned ATC clearance or	w) ROGER (or alternative instructions);
instruction has been resumed	
(Pliot and controller	
after an ATC clearance or	*X LINARIE TCASRA
instruction contradictory to	v) ROGER
the ACAS RA is received, the	
flight crew will follow the RA	
and inform ATC directly (Pilot	
and controller interchange)	l

	clearance to cancel level	z) CLIMB TO (level) [LEVEL RESTRICTION(S) (SID
	restriction(s) of the vertical	designator) CANCELLED (or) LEVEL RESTRICTION(S)
	profile of a SID during climb	(SID designator) AT (point) CANCELLED];
	clearance to cancel level	aa) DESCEND TO (level) [LEVEL RESTRICTION(S)
	restriction(s) of the vertical	(STARdesignator) CANCELLED (or) LEVEL
	profile of a STAR during	RESTRICTION(S) (STAR designator) AT (point)
	descent	CANCELLED].
		'*' denotes pilot transmission.
1.1.3	Minimum fuel	*a) MINIMUM FUEL:
	indication of minimum fuel	b) ROGER [NO DELAY EXPECTED or EXPECT (delay
		information)].
		'*' denotes pilot transmission.
1.1.4	Transfer of control and/or	a) CONTACT (unit call sign) (frequency) [NOW];
	frequency change	b) AT (or OVER) (time or place)[or WHEN]
		[PASSING/LEAVING/REACHING (level)] CONTACT
		(unit call sign) (frequency);
		c) IF NO CONTACT (instructions);
	Note.— An aircraft may be	d) STAND BY FOR (unit call sign) (frequency);
	requested to 'STAND BY' on a	*e) REQUEST CHANGE TO (frequency);
	frequency when it is intended	f) FREQUENCY CHANGE APPROVED;
	that the ATS unit will initiate	g) MONITOR (unit call sign) (frequency);
	communications soon and to	<pre>*h) MONITORING (frequency);</pre>
	MONITOR' a frequency when	i) WHEN READY, CONTACT (unit call sign)
	Information is being broadcast	(frequency);
	thereon.	j) REMAIN THIS FREQUENCY.
		'*' denotes pilot transmission.
1.1.5	8.33 KHz channel spacing	
	Note in this persenable the	
	Note. — In this paragraph, the	
	term point is used only in the	
	context of naming the	
	8.33 KHZ channel spacing	
	concept and does not	
	constitute any change to	
	existing ICAO provisions or	
	phraseology regarding the use	
	of the term 'decimal'.	
	to request confirmation of	a) CONFIRM EIGHT POINT THREE THREE;
	8.33 KHZ Capability	
	to multate 8.33 kHz	D) AFFIRM EIGHT POINT THREE THREE;
	to indicate lack of 8.33 kHz	*C) NEGATIVE EIGHT POINT THREE THREE;
	capability	
	to request OHF capability	
	to indicate UHF capability	
	to indicate lack of UHF	T) NEGATIVE UHF;
	to request status in respect	g) CONFIRM EIGHT POINT THREE THREE EXEMPTED;
	of 8.33 KHZ exemption	
	to indicate 8.33 kHz	T) AFFIRM LIGHT POINT THREE THREE EXEMPTED;
	exempted status	
	to indicate 8.33 KHZ non-	"I) NEGATIVE EIGHT POINT THREE THREE EXEMPTED;
	exempleu slalus	

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	to indicate that a certain	j) DUE EIGHT POINT THREE THREE REQUIREMENT.
	clearance is given because	'*' denotes pilot transmission.
	otherwise a non-equipped	
	and/or non-exempted aircraft	
	would enter airspace of	
	mandatory carriage	
1.1.6	Change of call sign	
	to instruct an aircraft to	a) CHANGE YOUR CALL SIGN TO (new call sign)[UNTIL
	change its type of call sign	FURTHER ADVISED];
	to advise an aircraft to	b) REVERT TO FLIGHT PLAN CALL SIGN (Cull Sign) [AT
	indicated in the flight plan	(significant point)].
117	Traffic information	a) TRAFFIC (information):
1.1./	to pass traffic information	b) NO REPORTED TRAFFIC:
	to acknowledge traffic	*c) LOOKING OUT:
	information	
	mornation	*e) NEGATIVE CONTACT [reasons]
		f)[ADDITIONAL] TRAFFIC (direction) BOUND (type of
		aircraft) (level) ESTIMATED (or OVER) (significant
		point) AT (time);
		g) TRAFFIC IS (classification) UNMANNED FREE
		BALLOON(S) WAS [or ESTIMATED] OVER (place) AT
		(time) REPORTED level(s)) [or LEVEL UNKNOWN]
		MOVING (direction) (other pertinent information, if
		any).
1 1 0		aenotes pilot transmission.
1.1.8	Meteorological conditions	a) [SURFACE] WIND (<i>number</i>) DEGREES (<i>speed</i>) (<i>units</i>);
		KILOMETRES PER HOUR (or KNOTS):
		Note.— Wind is always expressed by giving the mean
		direction and speed and any significant variations
		thereof.
		c) VISIBILITY (distance) (units) [direction];
		d) RUNWAY VISUAL RANGE (<i>or</i> RVR) [RUNWAY
		(number)] (distance) (units);
		e) RUNWAY VISUAL RANGE (or RVR) RUNWAY (number)
	for multiple BVB	NOT AVAILABLE (OF NOT REPORTED);
	observations	T) RUNWAY VISUAL RANGE (OF RVR) [RUNWAY (number)] (first position) (distance) (units) (second
	00301 Vations	nosition) (distance) (units) (third nosition) (distance)
		(units)
		Note 1. — Multiple RVR observations are always
		representative of the touchdown zone, midpoint zone
		and the roll-out/stop-end zone respectively.
		Note 2. — Where reports for three locations are given,
		the indication of these locations may be omitted,
		provided that the reports are passed in the order of
		toucnaown zone, followed by the midpoint zone and
	in the event that $D_{1/D}$	enuing with the roll-out/stop-end zone report.
	information on anyone	g) KUNWAY VISUAL KANGE (0/ KVK) [KUNWAY (number]] (first position) (distance) (units) (second
	position is not available, this	nosition) NOT AVAILABLE (third nosition) (distance)
	information will be included in	(units):
	the appropriate sequence	h) PRESENT WEATHER (details);

	information to a pilot changing from IFR flight to VFR flight where it is likely that flight in VMC cannot be maintained	 i) CLOUD (amount, [(type)] and height of base) (units) (or SKY CLEAR); j) CAVOK; Note.— 'CAVOK' pronounced 'CAV-O-KAY'. k) TEMPERATURE [MINUS] (number) (and/or DEWPOINT [MINUS] (number)); l) QNH (number)[units]; m) QFE (number) [(units)]; n) (aircraft type) REPORTED (description) ICING (or TURBULENCE) [IN CLOUD] (area) (time); o) REPORT FLIGHT CONDITIONS. p) INSTRUMENT METEOROLOGICAL CONDITIONS REPORTED (or forecast) IN THE VICINITY OF (location)
1.1.9	Position reporting to omit position reports until a specified position	a) NEXT REPORT AT <i>(significant point);</i> b) OMIT POSITION REPORTS [UNTIL <i>(specify)</i>];
1.1.10	Additional reports to request a report at a specified place or distance to report at a specified place or distance to request a report of	 c) RESUME POSITION REPORTING. a) REPORT PASSING (significant point); b) REPORT (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point); *c) (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point); d) REPORT PASSING (three digits) RADIAL (name of VOR) VOR; e) REPORT (GNSS or DME) DISTANCE FROM
	present position to report present position	 (significant point) or (name of DME station); *f) (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point). '*' denotes pilot transmission.
1.1.11	Aerodrome information (Applicable until 3 Nov 2021)	a) [(location)] RUNWAY SURFACE CONDITION RUNWAY (number) (condition);
		 b) [(location)] RUNWAY SURFACE CONDITIONRUNWAY (number) NOT CURRENT; c) LANDING SURFACE (condition); d) CAUTION CONSTRUCTION WORK (location); e) CAUTION (specify reasons) RIGHT (or LEFT), (or BOTH SIDES) OF RUNWAY [number]; f) CAUTION WORK IN PROGRESS (or OBSTRUCTION) (position and any necessary advice); g) RUNWAY REPORT AT (observation time) RUNWAY (number) (type of precipitant) UP TO (depth of deposit) MILLIMETRES. ESTIMATED SURFACE FRICTION GOOD (or MEDIUM TO GOOD, or MEDIUM, or MEDIUM TO POOR, or POOR; h) BRAKING ACTION REPORTED BY (aircraft type) AT (time) GOOD (or MEDIUM to GOOD, or MEDIUM, or MEDIUM to POOR, or POOR); i) RUNWAY (or TAXIWAY) (number)WET [or STANDING WATER, or SNOW REMOVED (length and width as applicable), or TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or

		 COMPACTED SNOW, or SLUSH, or FROZEN SLUSH, or ICE, or WET ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS, or FROZEN RUTS AND RIDGES)]; j) UNOFFICIAL OBSERVATION FROM THE TOWER (weather information); k) UNOFFICIAL OBSERVATION FROM A PILOT'S REPORT (weather information).
1.1.11	Aerodrome information (Applicable as of 4 November 2021)	 a) [(location)] ISSUED AT (date and time UTC) RUNWAY (number) followed as necessary by: 1) SURFACE CONDITION [CODE (three digit number)]; 2) DRY, or WET ICE, or WATER ON TOP OF COMPACTED SNOW, or DRY SNOW, or DRY SNOW ON TOP OF ICE, or WET SNOW ON TOP OF ICE, or ICE, or SLUSH, or STANDING WATER, or COMPACTED SNOW, or WET SNOW, or DRY SNOW ON TOP OF COMPACTED SNOW, or WET, or FROST; 3) DEPTH ((depth of deposit) MILLIMETRES or NOT REPORTED); 4) COVERAGE ((number) PERCENT or NOT REPORTED); 5) AVAILABLE WIDTH (number) METRES; 6) LENGTH REDUCED TO (number) METRES; 7) DRIFTING SNOW; 8) LOOSE SAND; 9) CHEMICALLY TREATED; 10) SNOWBANK (number) METRES [LEFT, or RIGHT, or LEFT AND RIGHT] [OF or FROM] CENTRELINE; 11) TAXIWAY (identification of taxiway) SNOWBANK (number) METRES [LEFT, or RIGHT, or LEFT AND RIGHT] [OF or FROM] CENTRELINE; 12) ADJACENT SNOWBANKS; 13) TAXIWAY (identification of taxiway) POOR; 14) APRON (identification of taxiway) POOR; 14) APRON (identification of taxiway) POOR; 15) Plain language remarks. b) [(location)] RUNWAY SURFACE CONDITION RUNWAY (number) NOT CURRENT; C) LANDING SURFACE (condition); d) CAUTION CONSTRUCTION WORK (location); e) CAUTION WORT IN PROGRESS (or OBSTRUCTION) (position and any necessary advice); TAXIWAY (identification of taxiway) WET [or STANDING WATER, or SNOW REMOVED (length and width as applicable), or CHEMICALLY TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or COMPACTED SNOW, or SLUSH, or IFROZEN SLUSH, or ICE, or WET ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS, or FROZEN RUTS AND RIDGES or LOOSE SAND]; i) UNOFFICIAL OBSERVATION FROM THE TOWER (uveather information):

		j) UNOFFICIAL OBSERVATION FROM A PILOT'S REPORT
1.1.12	Operational status of visual	a) (specify visual or non-visual aid) RUNWAY (number)
	and non-visual aids	(description of deficiency);
		b) (type) LIGHTING (unserviceability);
		c) GBAS/SBAS/MLS/ILS CATEGORY (category)
		(Serviceability state); d) TAXIWAX LIGHTING (description of deficiency);
		e) (type of visual approach slope indicator) RUNWAY
		(number) (description of deficiency).
1.1.13	Reduced vertical separation	
	minimum (RVSM) operations	
	to ascertain RVSM approval	a) CONFIRM RVSM APPROVED;
	status of an aircraft	
	status	
	to report RVSM non-	*c) NEGATIVE RVSM [(supplementary information, e.g.
	approved status followed by	State aircraft)];
	supplementary information	
	to deny ATC clearance into	d) UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE,
	RVSIM airspace	MAINTAIN [OF DESCEND TO, OF CLIMB TO] (IEVEI);
	turbulence affects the	e) ONABLE RUSINI DOL TORBOLLINCE,
	capability of an aircraft to	
	maintain height-keeping	
	requirements for RVSM	
	to report that the	*f) UNABLE RVSM DUE EQUIPMENT;
	equipment of an aircraft has	
	aviation system performance	
	standards	
	to request an aircraft to	g) REPORT WHEN ABLE TO RESUME RVSM;
	provide information as soon	
	as RVSM-approved status has	
	been regained or the pilot is	
	operations	
	to request confirmation	h) CONFIRM ABLE TO RESUME RVSM;
	that an aircraft has regained	
	RVSM-approved status or a	
	operations	
	to report ability to resume	*i) READY TO RESUME RVSM.
	RVSM operations after an	'*' denotes pilot transmission.
	equipment or weather-	
	related contingency	
1.1.14	GNSS Service status	AVAILABLE [DUE TO INTEREFRENCE]).
		1)IN THE VICINITY OF (location)(radius) [BETWEEN
		(levels)];
		or
		2) IN THE AREA OF (description) (or IN (name) FIR)
		[BETWEEN (IEVEIS)];
		(specify operation) [FROM (time) TO (time) (or
		UNTIL FURTHER NOTICE)];

SECTION 14 Voice communication procedures

			 *c) BASIC GNSS UNAVAILABLE [DUE TO (reason, e.g. LOSS OF RAIM or RAIM ALERT)]; *d) GBAS (or SBAS) UNAVAILABLE. e) CONFIRM GNSS NAVIGATION : and *f) AFFIRM GNSS NAVIGATION. '*' denotes pilot transmission.
	1.1.15	RNAV RNAV arrival or departure procedure cannot be accepted by the pilot	*UNABLE (<i>designator</i>) DEPARTURE [<i>or</i> ARRIVAL] DUE RNAV TYPE
		pilot is unable to comply with an assigned terminal area procedure	*UNABLE (designator) DEPARTURE [or ARRIVAL] (reasons)
		ATC unable to assign an RNAV arrival or departure procedure requested by a pilot due to the type of on-board RNAV equipment	UNABLE TO ISSUE (<i>designator</i>) DEPARTURE [<i>or</i> ARRIVAL] DUE RNAV TYPE
		ATC unable to assign an arrival or departure procedure requested by the pilot	UNABLE TO ISSUE (<i>designator</i>) DEPARTURE [<i>or</i> ARRIVAL] (<i>reasons</i>)
		confirmation whether a specific RNAV arrival or departure procedure can be	ADVISE IF ABLE (<i>designator</i>) DEPARTURE [<i>or</i> ARRIVAL]
		informing ATC of RNAV degradation or failure	*(aircraft call sign) UNABLE RNAV DUE EQUIPMENT
		informing ATC of no RNAV capability	*(aircraft call sign) NEGATIVE RNAV (*) denotes pilot transmission
	1.1.16	Degradation of aircraft navigation performance	UNABLE RNP (specify type) (or RNAV) [DUE TO (reason, e.g. LOSS OF RAIM or RAIM ALERT)].
1.2	Area	control services	
		Circumstances	Phraseologies
	1.2.1	Issuance of a clearance	a) (name of unit) CLEARS (aircraft call sign);
			c) RECLEARED (amended clearance details) [REST OF
			d) RECLEARED (amended route portion) TO (significant point of original route) [REST OF
			CLEARANCEUNCHANGED];
			ZONE)[VIA (significant point or route)] AT (level)
			f) LEAVE CONTROLLED AIRSPACE (or CONTROL
			ZONE)[VIA (significant point or route)] AT (level) (or CLIMBING, or DESCENDING);
			g) JOIN (specify) AT (significant point) AT (level) [AT (time)]
	1.2.2	Indication of route and	a) FROM (location) TO (location);
		clearance limit	b) TO (location),
			followed as necessary by:

1) DIRECT;

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1.2.3	Maintenance of specified levels	 2) VIA (route and/or significant points); 3) VIA FLIGHT PLANNED ROUTE; 4) VIA (distance) DME ARC (direction) OF (name ofDME station); c) (route) NOT AVAILABLE DUE (reason) ALTERNATIVE[S] IS/ARE (routes) ADVISE. a) MAINTAIN (level) [TO (significant point)]; b) MAINTAIN (level) UNTIL PASSING (significant point); c) MAINTAIN (level) UNTIL (minutes) AFTER PASSING (significant point); d) MAINTAIN (level) UNTIL (time); e) MAINTAIN (level) UNTIL ADVISED BY (name of unit); f) MAINTAIN (level) WHILE IN CONTROLLED AIRSPACE; h) MAINTAIN BLOCK (level) TO (level).
1.2.4	Specification of cruising levels	 Note. — The term 'MAINTAIN' is not to be used in lieu of 'DESCEND' or 'CLIMB' when instructing an aircraft to change level. a) CROSS (significant point) AT (or ABOVE, or BELOW) (level); b)CROSS (significant point) AT (time) OR LATER (or BEFORE) AT (level); c) CRUISE CLIMB RETWEEN (levels) (or ABOVE (level));
125	Francisco de const	d) CROSS (distance) MILES, (GNSS or DME) [(direction)] OF (name of DME station) OR (distance)[(direction)] OF (significant point) AT (or ABOVE or BELOW) (level).
1.2.5	Emergency descent	 b) ATTENTION ALL AIRCRAFT IN THE VICINITY OF [or AT] (significant point or location) EMERGENCY DESCENT IN PROGRESS FROM (level) (followed as necessary by specific instructions, clearances, trafficinformation, etc.). '*' denotes pilot transmission.
1.2.6	If clearance cannot be issued	EXPECT CLEARANCE type of clearance) AT (time).
1.2.7	When clearance for deviation cannot be issued	UNABLE, TRAFFIC (direction) BOUND (type of aircraft) (level) ESTIMATED (or OVER) (significant point) AT (time) CALL SIGN (call sign) ADVISE INTENTIONS.
1.2.8	Separation instructions	 a) CROSS (significant point) AT (time) [OR LATER (or OR BEFORE)]; b) ADVISE IF ABLE TO CROSS (significant point) AT (time or level); c) MAINTAIN MACH (number) [OR GREATER (or OR LESS)] [UNTIL (significant point)]; d) DO NOT EXCEED MACH (number); e) CONFIRM ESTABLISHED ON THE TRACK BETWEEN (significant point) AND (significant point) [WITH ZERO OFFSET]; *f) ESTABLISHED ON THE TRACK BETWEEN (significantpoint) AND (significant point) [WITH ZERO OFFSET]; *f) MAINTAIN TRACK BETWEEN (significant point) AND

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Na la cc re 1.2.9 In fly to	ote. When used to apply a teral VOR/GNSS separation onfirmation of zero offset is quired. structions associated with ring a track (offset), parallel the cleared route	 (significant point). REPORT ESTABLISHED ON THE TRACK; *h) ESTABLISHED ON THE TRACK; i) CONFIRM ZERO OFFSET; *j) AFFIRM ZERO OFFSET. '*' denotes pilot transmission a) ADVISE IF ABLE TO PROCEED PARALLEL OFFSET; b) PROCEED OFFSET (distance) RIGHT/LEFT OF (route) (track)[CENTRE LINE] [AT (significant point or time)] [UNTIL (significant point or time)]; c) CANCEL OFFSET (instructions to rejoin cleared flight route or other information).
1.3 Approad	ch control services	
Ci 1.3.1 De	rcumstances eparture instructions	 Phraseologies a) [AFTER DEPARTURE] TURN RIGHT (or LEFT) HEADING (three digits) (or CONTINUE RUNWAY HEADING) (or TRACK EXTENDED CENTRE LINE) TO (level or significant point) [(other instructions as required)]; b) AFTER REACHING (or PASSING) (level or significant point) (instructions); c) TURN RIGHT (or LEFT) HEADING (three digits) TO level) [TO INTERCEPT (track, route, airway, etc.)]; d) (standard departure name and number) DEPARTURE; e) TRACK (three digits) DEGREES [MAGNETIC (or TRUE)] TO (or FROM) (significant point) UNTIL (time, or REACHING (fix or significant point or level)) [BEFORE PROCEEDING ON COURSE]; f) CLEARED VIA (designation).
1.3.2 Aj	when a pilot requests a	 a) CLEARED (or PROCEED) VIA (designation); b) CLEARED TO (clearance limit) VIA (designation); c) CLEARED (or PROCEED) VIA (details of route to be followed); d) CLEARED (type of approach) APPROACH [RUNWAY (number)]; e) CLEARED (type of approach) RUNWAY (number) FOLLOWED BY CIRCLING TO RUNWAY (number); f) CLEARED APPROACH [RUNWAY (number)]; g) COMMENCE APPROACHAT (time); *h) REQUEST STRAIGHT-IN [(type of approach)] APPROACH [RUNWAY (number)]; i) CLEARED STRAIGHT-IN [(type of approach)] APPROACH [RUNWAY (number)]; j) REPORT VISUAL; k) REPORT RUNWAY [LIGHTS] IN SIGHT; *I) REQUEST VISUAL APPROACH;
vi: to	sual approach to request if a pilot is able accept a visual approach	m) CLEARED VISUAL APPROACH RUNWAY (number); n)ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY (number);
	in case of successive visual	 o) CLEARED VISUAL APPROACH RUNWAY (number), MAINTAIN OWN SEPARATION FROM PRECEDING

approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight	 (aircraft type and wake turbulence category as appropriate) [CAUTION WAKE TURBULENCE]; p)REPORT (significant point); [OUTBOUND, or INBOUND]; q) REPORT COMMENCING PROCEDURE TURN; *r) REQUEST VMC DESCENT; s) MAINTAIN OWN SEPARATION; t) MAINTAIN VMC; u) ARE YOU FAMILIAR WITH (name) APPROACHPROCEDURE; *v) REQUEST (type of approach) APPROACH [RUNWAY number)]; '*' denotes pilot transmission.
Holding clearances	
visual	a)HOLD VISUAL [OVER] (position), (or BETWEEN (two prominent landmarks)):
published holding	b) CLEARED (or PROCEED) TO (significant point, name
procedure over a facility or fix	of facility or fix) [MAINTAIN (or CLIMB or DESCEND
	TO) (level)] HOLD [(direction)] AS PUBLISHED
	EXPECT APPROACH CLEARANCE (or FURTHER
	CLEARANCE) AT (<i>TIME)</i> ;
when a detailed holding	d) CLEARED (or PROCEED) TO (significant point name
clearance is required	 of facility or fix) [MAINTAIN (or CLIMB or DESCEND TO) (level)] HOLD [(direction)] [(specified) RADIAL, COURSE, INBOUND TRACK (three digits) DEGREES] [RIGHT (or LEFT) HAND PATTERN] [OUTBOUND TIME(number) MINUTES] EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (time) (additional instructions, if necessary); e) CLEARED TO THE (three digits) RADIAL OF THE (name) VOR AT (distance) DME FIX [MAINTAIN (or CLIMB or DESCEND TO) (level)] HOLD [(direction)] [RIGHT (or LEFT) HAND PATTERN] [OUTBOUND TIME(number) MINUTES] EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (time) (additional instructions, if necessary); f) CLEARED TO THE (three digits) RADIAL OF THE (name) VOR AT (distance) DME FIX [MAINTAIN (or CLIMB or DESCEND TO) (level)] HOLD BETWEEN (additional instructions, if necessary); f) CLEARED TO THE (three digits) RADIAL OF THE (name) VOR AT (distance) DME FIX [MAINTAIN (or CLIMB or DESCEND TO) (level)] HOLD BETWEEN (distance) AND (distance) DME [RIGHT (or LEFT) HAND PATTERN] EXPECT APPROACH CLEARANCE
	(or FURTHER CLEARANCE) AT (time) (additional
	instructions, if necessary).
	'*' denotes pilot transmission.
Expected approach time	a) NO DELAY EXPECTED;
	D) EARECTED ARRKUACH TIME (TIME);
	d) DELAY NOT DETERMINED (reasons)
	approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight Holding clearances visual published holding procedure over a facility or fix when a detailed holding clearance is required

1.4 Phraseologies for use on and in the vicinity of the aerodrome

	Circumstances	Phraseologies
1.4.1	Identification of aircraft	SHOW LANDING LIGHTS.

1.4.2	Acknowledgement by visual	a)ACKNOWLEDGE BY MOVING AILERONS (or
	means	RUDDER);
		b) ACKNOWLEDGE BY ROCKING WINGS;
		c) ACKNOWLEDGE BY FLASHING LANDING LIGHTS.
1.4.3	Starting procedures	
	to request permission tostart	*a) [aircraft location] REQUEST START-UP;
	engines	*b) [aircraft location] REQUEST START-UP,
		INFORMATION IS identification);
	ATC replies	c) START-UP APPROVED;
		d) START-UP AT <i>(time)</i> ;
		e) EXPECT START-UP AT (time);
		f) START-UP AT OWN DISCRETION;
		c) EXPECT DEPARTURE (time) START-UP AT OWN
		DISCRETION.
		denotes pilot transmission.
1.4.4	Push back procedures	
	aircraft/ATC	*a) [aircraft location] REQUEST PUSHBACK;
		b) PUSHBACK APPROVED;
		C) STAND BY;
		d) PUSHBACK AT OWN DISCRETION;
		e) EXPECT (<i>number</i>) MINUTES DELAY DUE (<i>reason</i>).
1 4 5	Taulias and address	to) REQUEST TOW (company, name) (giver aft type)
1.4.5	lowing procedures	EPOM (location) TO (location):
	ATC response	h)TOW APPROVED VIA (specific routing
	ATC response	to be followed):
		d) STAND BY
		't' denotes transmission from aircraft/tow vehicle
		combination
146	To request time check and/or	*a) REQUEST TIME CHECK:
1.4.0	aerodrome data for departure	b) TIME (time):
	when no ATIS broadcast is	*c) REQUEST DEPARTURE INFORMATION
	available	d) RUNWAY (number). WIND (direction and speed)
		(units) QNH QFE) (number) [(units)]
		TEMPERATURE [MINUS] (number), [VISIBILITY
		(distance) (units) (orRUNWAY VISUAL RANGE
		RVR) (distance) (units))] [TIME (time)].
		Note. If multiple visibility and RVR observations are
		available, those that represent the roll-out/stop
		end zone should be used for take-off.
		'*' denotes pilot transmission.
1.4.7	Taxi procedures	
	for departure	*a) [aircraft type] [wake turbulence category if
		'heavy'][aircraft location] REQUEST TAXI
		[intentions];
		*b) [aircraft type] [wake turbulence category if
		'heavy'] [aircraft location] (flight rules) TO
		(aerodrome of destination) REQUEST TAXI
		[INTENTIONS];
		() TAXETO HOLDING POINT [NUMBER] [KUNWAY
		(INTIDE) [TOLD STOKT OF KUNWAY (NUMBER) (OF
		*d) [aircraft type] [wake turbulence category if
		<i>'heavy'</i> REOLIEST DETAILED TAXLINISTRUCTIONIS

		,
	where detailed taxi	e)TAXI TO HOLDING POINT [number] [RUNWAY
	instructions are required	(number)] VIA (specific route to be followed) [TIME
		(time)] [HOLD SHORT OF RUNWAY number) (or
		CROSS RUNWAY number))];
	where aerodrome	f) TAXI TO HOLDING POINT [number] (followed by
	information is not available	aerodrome information as applicable) [TIME
	from an alternative source such	(time)];
	as ATIS	g) TAKE (or TURN) FIRST or SECOND) LEFT or RIGHT);
		h) TAXI VIA (identification of taxiway);
		i) TAXI VIA RUNWAY (number);
		i) TAXI TO TERMINAL (or other location, e.g. GENERAL
		AVIATION AREA) [STAND (number)];
	for helicopter operations	*k) REQUEST AIR-TAXIING FROM (or VIA) TO (location
		or routing as appropriate);
		I) AIR-TAXI TO (or VIA) (location or routing as
		appropriate) [CAUTION (dust, blowing snow, loose
		debris, taxiing light aircraft, personnel, etc.)];
		m) AIR TAXI VIA (direct, as requested, or specified
		route) TO (location, heliport, operating or
		movementarea, active or inactive runway). AVOID
		(aircraft or vehicles or personnel);
	after landing	*n) REQUEST BACKTRACK;
		o)BACKTRACK APPROVED;
		p)BACKTRACK RUNWAY (number);
	general	*q) [(aircraft location)] REQUEST TAXI TO (destination
		on aerodrome);
		r) TAXI STRAIGHT AHEAD;
		s) TAXI WITH CAUTION;
		t) GIVE WAY TO (description and position of other
		aircraft);
		*u) GIVING WAY TO <i>(traffic)</i> ;
		*v) TRAFFIC (or type of aircraft) IN SIGHT;
		w) TAXI INTO HOLDING BAY;
		x) FOLLOW (description of other aircraft or vehicle);
		y) VACATE RUNWAY;
		*z) RUNWAY VACATED;
		aa) EXPEDITE TAXI [(reason)];
		*bb) EXPEDITING;
		cc) [CAUTION] TAXI SLOWER [reason];
		*dd) SLOWING DOWN.
		'*' denotes pilot transmission.
1.4.8	Holding	‡a) HOLD (direction) OF (position, runway number,
		etc.);
		<pre>‡b) HOLD POSITION;</pre>
		Fc) HOLD (distance) FROM (position);
	to hold not closer to arunway	Fa) HOLD SHORT OF (position);
	than specified	Te) HOLDING;
		"T) HULDING SHUKI.
		∓ requires specific acknowledgement from the pilot.
		denotes pilot transmission. The procedure
		words 'RUGER' and 'WILCO' are insufficient
		acknowledgement of the instructions 'HOLD,
		HULDPUSITION and HULD SHUKT OF (position)'.
		In each case the acknowledgement is to be by

		the phraseology 'HOLDING' or 'HOLDING SHORT' asappropriate
1 4 0	Τ	*a) DEQUEST CROSS DUNIMAY (number)
1.4.9	To cross a runway	a) REQUEST CROSS RUNWAY (number);
		Note. If the control tower is unable to see the
		crossing aircraft (e.g. night, low visibility), the
		instruction shouldalways be accompanied by a
		request to report when the aircraft has vacated the
		runway.
		b) CROSS RUNWAY (number) [REPORT VACATED];
		c) EXPEDITE CROSSING RUNWAY (number)
		TRAFFIC(aircraft type) (distance)
		KILOMETRES or MILES) FINAL:
		d) TAXI TO HOI DING POINT [number] [RUNWAY
		(number)] VIA (specific route to be followed)
		[HOLDSHORT OF RUNWAY (number)] or
		[CPOSS PUNIWAY (number)]
	Note. The pilot will when	
	Note. The phot will, when	(*' denotes nilet transmission
	requested, report RUNWAY	denotes pilot transmission.
	VACATED [®] when the entire	
	aircraft is beyond the	
	relevant runway-holding	
	position.	
1.4.10	Preparation for take-off	a) UNABLE TO ISSUE (designator) DEPARTURE
		(reasons);
		b) REPORT WHEN READY [FOR DEPARTURE];
		c) ARE YOU READY [FOR DEPARTURE]?;
		d) ARE YOU READY FOR IMMEDIATE DEPARTURE?;
		*e) READY;
	clearance to enter runway	f) LINE UP [AND WAIT];
	and await take-off clearance	†g) LINE UP RUNWAY (number);
		h) LINE UP. BE READY FOR IMMEDIATE DEPARTURE;
	conditional clearances	‡i) (condition) LINE UP (brief reiteration of the
		condition);
	acknowledgement of a	*j) (condition) LINING UP (brief reiteration of the
	conditional clearance	condition);
	confirmation or otherwise of	k) [THAT IS] CORRECT (or NEGATIVE) [I SAY AGAIN].
	the readback of	(as appropriate)
	Conditional clearance	
	request for departure froman	*1) DECLIECT DEDADTUDE EDOM DUNIMAY (number)
	intersection take off position	INTERSECTION (decignation or name of
	intersection take-on position	intersection (designation of name of
	approval of requested	m) APPROVED, TAXI TO HOLDING POINT RUNWAY
	departure from an	(number), INTERSECTION (designation or name of
	intersection take-off position	intersection)
	denial of requesteddeparture	n)NEGATIVE, TAXI TO HOLDING POINT RUNWAY
	from an	(number), INTERSECTION (designation or name of
	intersection take-off position	intersection)
	ATC-initiated intersection	o)ADVISE ABLE TO DEPART FROM RUNWAY
	take-off	(number),INTERSECTION (designation or name of
		intersection)
	advising take-off run	p) TORA RUNWAY (number). FROM INTERSECTION
	available from an intersection	(designation or name of intersection). (distance)
	take-off position	METRES
	take on position	1

	issuing multiple line-up	q)LINE UP AND WAIT RUNWAY (number),
	instruction	INTERSECTION (name of intersection), (essential
		local traffic information)
	request for a visual departure	*r) REQUEST VISUAL DEPARTURE [DIRECT]
		TO/UNTII
		(navaid wavnoint altitude)
	ATS initiated visual departure	
	Ars initiated visual departure	5) ADVISE ABLE TO ACCEPT VISUAL DEPARTORE
		[DIRECT] TO/ONTIL (<i>navaia, waypoint/attitude</i>)
	clearance for visual departure	t) VISUAL DEPARTURE RUNWAY (number)
		APPROVED, IURN LEFT/RIGHT [DIRECT] TO
		(navaid, heading, waypoint) [MAINTAIN VISUAL
		REFERENCE UNTIL (altitude)]
	read-back of visual departure	*u) VISUAL DEPARTURE TO/UNTIL (navaid,
	clearance	waypoint/altitude)
		'*' denotes pilot transmission.
		'+' When there is the possibility of confusion during
		multiple runway operations.
		'‡' Provisions concerning the use of conditional
		clearances are contained in SERA 8015 (g)
		and $(h)(2)$
		anu(n)(2).
		NOLE. TORA IS PIONOUNCEU TOR-AH .
1.4.11	Take-off clearance	a) RUNWAY (<i>number</i>) CLEARED FOR TAKE-
		OFF[REPORTAIRBORNE];
	when reduced runway	b) (traffic information) RUNWAY (number) CLEARED
	separation is used	FOR TAKE-OFF;
	when take-off clearance has	c) TAKE OFF IMMEDIATELY OR VACATE
	not been complied with	RUNWAY[(instructions)];
		d) TAKE OFF IMMEDIATELY OR HOLD SHORT OF
		RUNWAY;
	to cancel a take-off clearance	e)HOLD POSITION, CANCEL TAKE-OFF I SAY
		AGAINCANCEL TAKE-OFF (reasons);
		*f) HOLDING;
	to stop a take off after an	g) STOP IMMEDIATELY [(repeat aircraft call sian)
	aircraft has common and take off	STOPIMMEDIATELYI
	roll	*h) STOPPING:
	for helicenter energies	i) CLEARED FOR TAKE OFF [FROM (location)]
	for helicopter operations	I) CLEARED FOR TAKE-OFF [FROM [IOCULIOII]]
		(present position, tuxiway, jinai approach and
		take-off area, runway and number);
) AFTER DEPARTURE INSTRUCTIONS;
		K) AFTER DEPARTURE TURIN RIGHT (OF LEFT, OF
		(*/ demote a silet terrange issient UCI DING and
		* denotes pliot transmission. HOLDING and
		STOPPING are the procedural responses to e) and
4 4 4 2	- II I I I I I	gliespectively.
1.4.12	I urn or climb instructions	*a) REQUEST RIGHT (OF LEFT) TURN;
	after take-off	b) RIGHT (OF LEFT) TURN APPROVED;
		c) WILL ADVISE LATER FOR RIGHT (or LEFT) TURN;
	to request airborne time	d) REPORT AIRBORNE;
		e) AIRBORNE (<i>time</i>);
		 AFTER PASSING (level) (instructions);
	heading to be followed	g) CONTINUE RUNWAY HEADING (instructions);
	when a specific track is to be	 h) TRACK EXTENDED CENTRE LINE (instructions);
	followed	i) CLIMB STRAIGHT AHEAD (instructions).
		'*' denotes pilot transmission.
		*a) [aircraft type] (position) (level) FOR LANDING;

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1.4.13	Entering an aerodrome traffic circuit when ATIS information is available	 b)JOIN [(direction of circuit)] (position in circuit) (runway number) [SURFACE] WIND (direction and speed) (units) [TEMPERATURE [MINUS] (number)] QNH (or QFE) (number) [units)] [TRAFFIC (detail)]; c) MAKE STRAIGHT-IN APPROACH, RUNWAY (number)[SURFACE] WIND (direction and speed) (units) [TEMPERATURE [MINUS] (number)] QNH (orQFE) (number) [(units)] [TRAFFIC (detail)]; *d) (aircraft type) (position)(level)INFORMATION (ATIS identification) FORLANDING; e) JOIN (position in circuit) [RUNWAY (number)] QNH(or QFE) (number) [(units)] [TRAFFIC (detail)].
1.4.14	In the circuit	 *a) (position in circuit, e.g. DOWNWIND/FINAL); b) NUMBER FOLLOW (aircraft type and position) [additional instructions if required]. '*' denotes pilot transmission.
1.4.15	Approach instructions Note. The report 'LONG FINAL' is made when aircraft turn on to final approach at a distance greater than 7 km (4 NM) from touchdown or when an aircraft on a straight-in approach is15 km (8 NM) from touchdown. In both cases, a report 'FINAL' is required at7 km (4 NM) from touchdown.	 a) MAKE SHORT APPROACH; b) MAKE LONG APPROACH (or EXTEND DOWNWIND); c) REPORT BASE (or FINAL, or LONG FINAL); d) CONTINUE APPROACH [PREPARE FOR POSSIBLE GOAROUND].
1.4.16	Landing clearance when reduced runway separation is used special operations to make an approach along, or parallel to a runway, descending to an agreed minimum level to fly past the control tower or other observation point for the purpose of visual inspection by persons on the ground for helicopter operations	 a) RUNWAY (number) CLEARED TO LAND; b) (traffic information) RUNWAY (number) CLEARED TO LAND; c) CLEARED TOUCH AND GO; d) MAKE FULL STOP; *e) REQUEST LOW APPROACH (reasons); f) CLEARED LOW APPROACH [RUNWAY (number)] [(altitude restriction if required) (go around instructions)]; *g) REQUEST LOW PASS (reasons); h) CLEARED LOW PASS [as in f)]; *i) REQUEST STRAIGHT-IN (or CIRCLING APPROACH, LEFT or RIGHT) TURN TO (location)); j) MAKE STRAIGHT-IN (or CIRCLING APPROACH, LEFT (or RIGHT) TURN TO (location, runway, taxiway, finalapproach and take-off area)) [ARRIVAL or ARRIVAL ROUTE) (number, name, or code)]. [HOLD SHORT OF (active runway, extended runway centre line, other)]. [REMAIN (direction or distance) FROM (runway, runway centre line, other helicopter or aircraft)]. [CAUTION (power

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		lines, unlighted obstructions, wake turbulence,
		etc.)]. CLEARED TO LAND.
		'*' denotes pilot transmission.
1.4.17	Delaying aircraft	a) CIRCLE THE AERODROME;
		b) ORBIT (RIGHT, or LEFT) [FROM PRESENT
		POSITION];
		c) MAKE ANOTHER CIRCUIT.
1.4.18	Missed approach	a) GO AROUND;
		*b) GOING AROUND.
		'*' denotes pilot transmission.
1.4.19	Information to aircraft	
	when pilot requested visual	a) LANDING GEAR APPEARS DOWN
	inspection of landing gear	b)RIGHT (or LEFT, or NOSE) WHEEL APPEARS UP
		(orDOWN);
		c) WHEELS APPEAR UP;
		d)RIGHT (or LEFT, or NOSE) WHEEL DOES NOT
		APPEARUP (<i>or</i> DOWN);
	wake turbulence	e)CAUTION WAKE TURBULENCE [FROM ARRIVING
		(orDEPARTING) (type of aircraft)] [additional
		information as required];
	jet blast on apron or taxiway	f) CAUTION JET BLAST;
	propeller-driven aircraft	g) CAUTION SLIPSTREAM.
	slipstream	
1.4.20	Runway vacating and	a) CONTACT GROUND (frequency);
	communications after landing	b) WHEN VACATED CONTACT GROUND (frequency);
		c) EXPEDITE VACATING;
		d) YOUR STAND (or GATE) (designation);
		e) TAKE (or TURN) FIRST (or SECOND, or
		CONVENIENT)LEFT (or RIGHT) AND CONTACT
		GROUND (frequency);
	for helicopter operations	f) AIR-TAXI TO HELICOPTER STAND (or) HELICOPTER
		PARKING POSITION (area);
		g) AIR-TAXI TO (or VIA) (location or routing as
		appropriate) [CAUTION (dust, blowing snow, loose
		aepris, taxiing light aircraft, personnel, etc.)];
		n) AIK-IAXI VIA (direct, as requested, or specified
		nouce) TO (nocation, neinport, operating or
		(nivement area, active or inactive runway). AVOID
		(aircraft or vehicles or personnel).

1.5 Phraseologies to be used related to CPDLC

	Circumstances	Phraseologies
1.5.1	Operational status failure of CDPLC failure of a single CDPLC message to correct CDPLC clearances, instructions, information or requests to instruct all stations or a specific flight to avoid sending CDPLC requests for a limited time	 a) [ALL STATIONS] CPDLC FAILURE (instructions); c) CPDLC MESSAGE FAILURE (appropriate clearance, instruction, information or request); c) DISREGARD CPDLC (message type) MESSAGE, BREAK (correct clearance, instruction, information or request); d) [ALL STATIONS] STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [(reason)];

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... to resume normal use of CDPLC

e) [ALL STATIONS] RESUME NORMAL CPDLC OPERATIONS.

2. ATS SURVEILLANCE SERVICE PHRASEOLOGIES

Note. The following comprise phraseologies specifically applicable when an ATS surveillance system is used in the provision of air traffic services. The phraseologies detailed in the sections above for use in the provision of air traffic services are also applicable, as appropriate, when an ATS surveillance system is used.

2.1 General ATS surveillance service phraseologies

	Circumstances	Phraseologies
2.1.1	Identification of aircraft	 a) REPORT HEADING [AND FLIGHT LEVEL (or ALTITUDE)]; b) FOR IDENTIFICATION TURN LEFT (or RIGHT) HEADING (three digits); c) TRANSMIT FOR IDENTIFICATION AND REPORT HEADING; d) RADAR CONTACT [position]; e) IDENTIFIED [position]; f) NOT IDENTIFIED [reason], [RESUME (or CONTINUE)OWN NAVIGATION].
2.1.2	Position information	POSITION (distance) (direction) OF (significant point) (or OVER or ABEAM (significant point)).
2.1.3	Vectoring instructions	 a) LEAVE (significant point) HEADING (three digits); b) CONTINUE HEADING (three digits); c) CONTINUE PRESENT HEADING; d) FLY HEADING (three digits); e) TURN LEFT (or RIGHT) HEADING (three digits) [reason]; f) TURN LEFT (or RIGHT) (number of degrees) DEGREES [reason]; g) STOP TURN HEADING (three digits); h) FLY HEADING (three digits), WHEN ABLE PROCEEDDIRECT (name) (significant point); i) HEADING IS GOOD.
2.1.4	Termination of vectoring	 a) RESUME OWN NAVIGATION (position of aircraft) (specific instructions); b) RESUME OWN NAVIGATION [DIRECT] (significant point) [MAGNETIC TRACK (three digits) DISTANCE (number) KILOMETRES (or MILES)].
2.1.5	Manoeuvres (in case of unreliable directional instruments on board aircraft) Note. When it is necessary to specify a reason for vectoring or for the above manoeuvres, the	 a) MAKE A THREE SIXTY TURN LEFT (or RIGHT) [reason]; b) ORBIT LEFT (or RIGHT) [reason]; c) MAKE ALL TURNS RATE ONE (or RATE HALF, or (number) DEGREES PER SECOND) START AND STOP ALL TURNS ON THE COMMAND 'NOW'; d) TURN LEFT (or RIGHT) NOW; e) STOP TURN NOW.

	following phraseologies should	
	be used:	
	a) DUE TRAFFIC:	
	b) FOR SPACING:	
	c) = FOR DELAY	
	d) FOR DOWNWIND (or BASE	
	or FINAL)	
216	Speed control	a) REPORT SPEED.
2.1.0	speed control	*b) SPEED (number) KILOMETRES PER HOUR (or
		KNOTS)
		c) MAINTAIN (number) KILOMETRES PER HOUR (or
		KNOTS) [OR GREATER (or OR LESS)] [UNTI
		(significant point)]:
		d) DO NOT EXCEED (number) KILOMETRES PER
		HOUR (arKNOTS):
		a) MAINTAIN DESENT SDEED
		e) MAINTAIN FRESENT SPEED, f) INCREASE (or REDUCE) SPEED TO (number)
		KILOMETRES DER HOUR (or KNOTS) [OR
		CPEATED (or OP LESS)]
		g) INCREASE (or BEDILCE) SPEED BY (number)
		KILOMETRES PER HOUR (arknots)
		h) DESLIME NORMAL SDEED:
		i) REDUCE TO MINIMUM CLEAN SPEED:
		J) REDUCE TO WINNIVIOW CLEAN SPEED,
		K) NO [ATC] SPEED RESTRICTIONS.
		* denotes pliot transmission.
		Note An arriving aircraft may be instructed to
		maintain its 'maximum sneed' 'minimum clean
		sneed' 'minimumsneed' or a snerified sneed
		'Minimum clean speed' signifies the minimum speed
		at which an aircraft can be flown in a clean
		configuration i.e. without deployment of lift-
		augmentation devices speed brakes or landing
		aear.
217	Position reporting	geun
2.1.7	to omit position reports	a) OMIT POSITION REPORTS [LINTH (specify)]
		b) NEXT REPORT AT (significant point):
		c) REPORTS REQUIRED ONLY AT (significant
		noint(s)).
		d) RESUME POSITION REPORTING
218	Traffic information and	a)TRAFFIC (number) O'CLOCK (distance)
2.1.0	avoiding action	(direction offlight) (any other pertinent
	avoiding action	information1:
		1) UNKNOWN:
		2) SLOW MOVING:
		3) FAST MOVING:
		4) CLOSING;
		5) OPPOSITE (or SAME) DIRECTION;
		6) OVERTAKING;
		7) CROSSING LEFT TO RIGHT (<i>or</i> RIGHT TO LEFT):
	(if known)	8) (aircraft type);
	· · · · ·	9) (level);
	when passing level	10) [YOUR CLEARED LEVEL]
	information to aircraft climbing	11) CLIMBING (or DESCENDING);
	6	

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(or descending, in form of	
,	vertical distance from the other	
1	traffic	
	to request avoiding action	*b) REQUEST VECTORS;
		c) DO YOU WANT VECTORS?;
1	when passing unknown traffic	d) CLEAR OF TRAFFIC [appropriate instructions];
	for avoiding action	e) AVOIDING ACTION TURN LEFT (or RIGHT)
		IMMEDIATELY HEADING (three digits)
		[UNIDENTIFIED] TRAFFIC WAS (bearing by clock- reference and distance);
		f) AVOIDING ACTION TURN LEFT (or RIGHT)
		(number of degrees) DEGREES IMMEDIATELY
		TRAFFIC AT (bearing by clock-reference and
		distance).
		'*' denotes pilot transmission.
2.1.9	Communications and loss of	a) [IF] RADIO CONTACT LOST (instructions);
(communications	b) IF NO TRANSMISSIONS RECEIVED FOR (number)
		MINUTES (or SECONDS) (instructions);
		c) REPLY NOT RECEIVED (instructions);
	if loss of communications	d) IF YOU READ [manoeuvre instructions or
9	suspected	SQUAWK(code or IDENT)];
		e) (manoeuvre, SQUAWK or IDENT) OBSERVED.
		POSITION (position of aircraft). [(instructions)].
2.1.10	lermination of radar and/or	a) RADAR SERVICE (or IDENTIFICATION)
	ADS-B service	h) WILL SHOPTLY LOSE IDENTIFICATION
		b) WILL SHORTLY LOSE IDENTIFICATION
		(appropriate instructions of injointation),
2 1 1 1	Padar and/or ADS R	a) SECONDARY RADAR OUT OF SERVICE
2.1.11	aquipment degradation	(annropriate information as necessary)
		b) PRIMARY RADAR OUT OF SERVICE (appropriate
		information as necessary):
		c) ADS-B OUT OF SERVICE (appropriate information

2.2 Radar in approach control service

	Circumstances	Phraseologies
2.2.1	Vectoring for approach	a) VECTORING FOR (type of) APPROACH RUNWAY (number);
		b) VECTORING FOR VISUAL APPROACH RUNWAY
		(number) REPORT FIELD (or RUNWAY) IN SIGHT;
		c) VECTORING FOR (positioning in the circuit);
		d) VECTORING FOR SURVEILLANCE RADAR
		APPROACH RUNWAY (number);
		e) VECTORING FOR PRECISION APPROACH RUNWAY (number);
		f) (type) APPROACH NOT AVAILABLE DUE (reason)
		(alternative instructions).
2.2.2	Vectoring for ILS and other	a) POSITION (number) KILOMETRES (or MILES)
	approach procedures	from x). TURN LEFT (<i>or</i> RIGHT) HEADING (three
		digits);
AMC and GM for Standardised European Rules of the Air (SERA) as retained in (and amended by) UK law)

	 b) YOU WILL INTERCEPT FINAL APPROACH COURSE (radio aid) (distance) FROM (significant point or TOUCHDOWN):
when a pilot wishes to b nositioned at a specific dis	e *c) REQUEST (distance) FINAL;
from touchdown	d) CLEARED FOR (type of approach) APPROACH RUNWAY (number):
instructions and informa	e) REPORT ESTABLISHED ON [ILS] LOCALISER (or ON GLS/RNP/MLS [FINAL] APPROACH [COURSE]); f) CLOSING FROM LEFT (or RIGHT) [REPORT
	ESTABLISHED]; g) TURN LEFT (or RIGHT) HEADING (three digits) [TO INTERCEPT] or [REPORT ESTABLISHED]:
	h) EXPECT VECTOR ACROSS THE (LOCALISER or [GLS/RNP/MLS] FINAL APPROACH COURSE or radio aid) (reason):
	 i) THIS TURN WILL TAKE YOU THROUGH THE (LOCALISER or [GLS/RNP/MLS] FINAL APPROACH COURSEor radio aid) [reason];
	j) TAKING YOU THROUGH THE (LOCALISER or [GLS/RNP/MLS] FINAL APPROACH COURSE or radio aid) [reason]:
	 k) MAINTAIN (altitude) UNTIL GLIDE PATH INTERCEPTION; I) REPORT ESTABLISHED ON GLIDE PATH:
	m) INTERCEPT THE (LOCALISER or [GLS/RNP/MLS] [FINAL] APPROACH [COURSE] or radio aid) [REPORT ESTABLISHED].
	'*' denotes pilot transmission.
2.2.3 Manoeuvre during independent and depend parallel approaches	 a) CLEARED FOR (type of approach) APPROACH RUNWAY (number) LEFT (or RIGHT); b) YOU HAVE CROSSED THE LOCALISER (or (CLS (DND (ALLS EINAL ADDROACH COURSE))
	TURN LEFT (<i>or</i> RIGHT) IMMEDIATELY AND RETURN TO THE LOCALISER (<i>or</i> [GLS/RNP/MLS] FINAL APPROACH COURSE):
	c)ILS (or MLS) RUNWAY (number) LEFT (or RIGHT) LOCALISER (or MLS) FREQUENCY IS (frequency);
for avoidance action wh aircraft is observed penetr the NTZ	en an d) TURN LEFT (or RIGHT) (number) DEGREES (or ating HEADING) (three digits) IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH]. CLIMB TO (altitude):
for avoidance action bel 120 m (400 ft) above the runway threshold elevatio where parallel approach obstacle assessment surfac (PAOAS) criteria are being applied	e) CLIMB TO <i>(altitude)</i> IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT n APPROACH] (further instructions).
2.2.4 Surveillance radar approx2.2.4.1 Provision of service	ach a)THIS WILL BE A SURVEILLANCE RADAR APPROACH RUNWAY (<i>number</i>) TERMINATING

AMC and GM for Standardised European Rules of the Air (SERA) as retained in (and amended by) UK law)

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		AT (distance) FROMTOUCHDOWN, OBSTACLE
		CLEARANCE ALTITUDE (or HEIGHT) (number)
		METRES (or FEET) CHECK YOUR MINIMA [IN
		CASE OE GO ABOUND (instructions)]
		b) APPROACH INSTRUCTIONS WILL BE TERMINATED
		AT (distance) FROM TOUCHDOWN
2242	Flouration	
2.2.4.2	Elevation	a) COMMENCE DESCENT NOW [TO MAINTAIN A
		(<i>number</i>) DEGREE GLIDE PATHJ;
		b) (distance) FROW TOUCHDOWN ALTTODE (or
2242	Desition	
2.2.4.3	Position	
2.2.4.4	Checks	a) CHECK GEAR DOWN [AND LOCKED];
		b) OVER THRESHOLD.
2.2.4.5	Completion of approach	a) REPORT VISUAL;
		b) REPORT RUNWAY [LIGHTS] IN SIGHT;
		c) APPROACH COMPLETED [CONTACT (unit)].
2.2.5	PAR approach	
2.2.5.1	Provision of service	a)THIS WILL BE A PRECISION RADAR APPROACH
		RUNWAY (number);
		b) PRECISION APPROACH NOT AVAILABLE DUE
		(reason) (alternative instructions);
		c) IN CASE OF GO AROUND (instructions).
2.2.5.2	Communications	a) DO NOT ACKNOWLEDGE FURTHER
		TRANSMISSIONS;
		b) REPLY NOT RECEIVED. WILL CONTINUE
		INSTRUCTIONS.
2.2.5.3	Azimuth	a)CLOSING [SLOWLY (or QUICKLY)] [FROM THE LEFT
		(<i>or</i> FROM THE RIGHT)];
		b) HEADING IS GOOD;
		c) ON TRACK;
		d) SLIGHTLY (or WELL, or GOING) LEFT (or RIGHT) OF
		TRACK;
		e) (number) METRES LEFT (or RIGHT) OF TRACK.
2.2.5.4	Elevation	a) APPROACHING GLIDE PATH;
		b) COMMENCE DESCENT NOW [AT (number)
		METRESPER SECOND OR (number) FEET PER
		MINUTE (or ESTABLISH A (number) DEGREE
		GLIDE PATH)];
		c) RATE OF DESCENT IS GOOD;
		d) ON GLIDE PATH;
		e) SLIGHTLY (or WELL, or GOING) ABOVE (or
		BELOW)GLIDE PATH;
		f) [STILL] (number) METRES (or FEET) TOO HIGH (or
		TOO LOW);
		g) ADJUST RATE OF DESCENT;
		h) COMING BACK [SLOWLY (or QUICKLY)] TO THE
		GLIDEPATH;
		i) RESUME NORMAL RATE OF DESCENT;
		j) ELEVATION ELEMENT UNSERVICEABLE (to be
		followed by appropriate instructions);
		k) (distance) FROM TOUCHDOWN. ALTITUDE (or
		HEIGHT) SHOULD BE (numbers and units).
2.2.5.5	Position	a) (distance) FROM TOUCHDOWN;
		b) OVER APPROACH LIGHTS;
		c) OVER THRESHOLD.

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2.2.5.6	Checks	a) CHECK GEAR DOWN AND LOCKED;
		b) CHECK DECISION ALTITUDE (or HEIGHT).
2.2.5.7	Completion of approach	a) REPORT VISUAL;
		b) REPORT RUNWAY [LIGHTS] IN SIGHT;
		c) APPROACH COMPLETED [CONTACT (unit)].
2.2.5.8	Missed approach	a)CONTINUE VISUALLY OR GO AROUND [missed
		approach instructions];
		b)GO AROUND IMMEDIATELY [missed approach
		instructions] (reason);
		c) ARE YOU GOING AROUND?;
		d) IF GOING AROUND (appropriate instructions);
		*e) GOING AROUND.
		'*' denotes pilot transmission.

2.3 Secondary surveillance radar (SSR) and ADS-B phraseologies

 2.3.1 To request the capability of the SSR equipment a) ADVISE TRANSPONDER (APABILITY; b) TRANSPONDER (as shown in the flight plan); *c) NEGATIVE TRANSPONDER. *c) NEGATIVE TRANSPONDER. *c) NEGATIVE TRANSPONDER. *c' denotes pilot transmission. a) ADVISE ADS-B CAPABILITY; *b) ADS-B TRANSMITTER (data link); *c) ADS-B RECEIVER (data link); *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *' denotes pilot transmission. 2.3.3 To instruct setting of transponder a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). 3.4 To request the pilot to reselect the assigned mode and code a) RESET SQUAWK [(mode)] (code); *' denotes pilot transmission. 		Circumstances	r ni useologies
 the SSR equipment *b) TRANSPONDER (as shown in the flight plan); *c) NEGATIVE TRANSPONDER. *c' denotes pilot transmission. a) ADVISE ADS-B CAPABILITY; *b) ADS-B TRANSMITTER (data link); *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *d' denotes pilot transmission. 2.3.3 To instruct setting of transponder a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). 2.3.4 To request the pilot to reselect the assigned mode and code *b) RESETTING (mode) (code). *c' denotes pilot transmission. 	2.3.1	To request the capability of	a) ADVISE TRANSPONDER CAPABILITY;
 2.3.2 To request the capability of the ADS-B equipment 2.3.3 To instruct setting of transponder 2.3.4 To request the pilot to reselect the assigned mode and code *c) NEGATIVE TRANSPONDER. *c) NEGATIVE TRANSPONDER. *denotes pilot transmission. a) ADVISE ADS-B CAPABILITY; *b) ADS-B TRANSMITTER (data link); *c) ADS-B RECEIVER (data link); *denotes pilot transmission. a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). a) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code). *' denotes pilot transmission. 		the SSR equipment	*b) TRANSPONDER (as shown in the flight plan);
 2.3.2 To request the capability of the ADS-B equipment 2.3.3 To instruct setting of transponder 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.5 To instruct setting of transponder 2.3.6 To request the pilot to reselect the assigned mode and code 2.3.7 To request the pilot to reselect the assigned mode and code 2.3.8 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 To request the pilot to reselect the assigned mode and code 			*c) NEGATIVE TRANSPONDER.
 2.3.2 To request the capability of the ADS-B equipment a) ADVISE ADS-B CAPABILITY; b) ADS-B TRANSMITTER (data link); *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *d) NEGATIVE ADS-B. *d) NEGATIVE ADS-B. *d) NEGATIVE SQUAWK (code); b) SQUAWK (code). 2.3.4 To request the pilot to reselect the assigned mode and code a) ADVISE ADS-B CAPABILITY; *b) ADS-B TRANSMITTER (data link); *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *' denotes pilot transmission. a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). *b) RESETTING (mode) (code). *' denotes pilot transmission. 			'*' denotes pilot transmission.
the ADS-B equipment*b) ADS-B TRANSMITTER (data link); *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *' denotes pilot transmission.2.3.3To instruct setting of transpondera) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code).2.3.4To request the pilot to reselect the assigned mode and codea) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code).	2.3.2	To request the capability of	a) ADVISE ADS-B CAPABILITY;
 *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *' denotes pilot transmission. a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). 2.3.4 To request the pilot to reselect the assigned mode and code *c) ADS-B RECEIVER (data link); *d) NEGATIVE ADS-B. *' denotes pilot transmission. a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). *b) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code). *' denotes pilot transmission. 		the ADS-B equipment	*b) ADS-B TRANSMITTER (data link);
 *d) NEGATIVE ADS-B. *' denotes pilot transmission. 2.3.3 To instruct setting of transponder 2.3.4 To request the pilot to reselect the assigned mode and code *d) NEGATIVE ADS-B. *' denotes pilot transmission. a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). a) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code). *' denotes pilot transmission. 			*c) ADS-B RECEIVER (data link);
 2.3.3 To instruct setting of transponder 2.3.4 To request the pilot to reselect the assigned mode and code 2.3.4 to request the pilot to reselect the assigned mode and code 			*d) NEGATIVE ADS-B.
 2.3.3 To instruct setting of transponder 2.3.4 To request the pilot to reselect the assigned mode and code a) FOR DEPARTURE SQUAWK (code); b) SQUAWK (code). a) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code). '*' denotes pilot transmission. 			'*' denotes pilot transmission.
transponderb) SQUAWK (code).2.3.4To request the pilot to reselect the assigned mode and codea) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code).**' denotes pilot transmission.	2.3.3	To instruct setting of	a) FOR DEPARTURE SQUAWK (code);
2.3.4 To request the pilot to reselect the assigned mode and code a) RESET SQUAWK [(mode)] (code); *b) RESETTING (mode) (code). '*' denotes pilot transmission.		transponder	b) SQUAWK <i>(code)</i> .
reselect the assigned mode *b) RESETTING (mode) (code). and code '*' denotes pilot transmission.	2.3.4	To request the pilot to	a) RESET SQUAWK [(mode)] (code);
and code '*' denotes pilot transmission.		reselect the assigned mode	*b) RESETTING (mode) (code).
		and code	'*' denotes pilot transmission.
2.3.5 To request reselection of RE-ENTER [ADS-B or MODE S] AIRCRAFT	2.3.5	To request reselection of	RE-ENTER [ADS-B or MODE S] AIRCRAFT
aircraft identification IDENTIFICATION.		aircraft identification	IDENTIFICATION.
2.3.6 To request the pilot to a) CONFIRM SQUAWK (code);	2.3.6	To request the pilot to	a) CONFIRM SQUAWK (code);
confirm the code selected on *b) SQUAWKING (code).		confirm the code selected on	*b) SQUAWKING (code).
the aircraft's transponder '*' denotes pilot transmission.		the aircraft's transponder	'*' denotes pilot transmission.
2.3.7 To request the operation of a) SQUAWK [(code)] [AND] IDENT;	2.3.7	To request the operation of	a) SQUAWK [(code)] [AND] IDENT;
the IDENT feature b) SQUAWK LOW;		the IDENT feature	b) SQUAWK LOW;
c) SQUAWK NORMAL;			c) SQUAWK NORMAL;
d) TRANSMIT ADS-B IDENT.			d) TRANSMIT ADS-B IDENT.
2.3.8 To request temporary SQUAWK STANDBY.	2.3.8	To request temporary	SQUAWK STANDBY.
suspension of transponder		suspension of transponder	
operation		operation	
2.3.9 To request emergency code SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].	2.3.9	To request emergency code	SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].
2.3.10 To request termination of a) STOP SQUAWK [TRANSMIT ADS-B ONLY];	2.3.10	To request termination of	a) STOP SQUAWK [TRANSMIT ADS-B ONLY];
transponder and/or ADS-B b) STOP ADS-B TRANSMISSION [SQUAWK (code)		transponder and/or ADS-B	b) STOP ADS-B TRANSMISSION [SQUAWK (code)
transmitter operation ONLY].		transmitter operation	ONLY].
Note. Independent operations		Note. Independent operations	
of Mode S transponder and		of Mode S transponder and	
ADS-B may not be possible in all		ADS-B may not be possible in all	
aircraft (e.g. where ADS-B is		aircraft (e.g. where ADS-B is	
solely provided by 1 090 MHz		solely provided by 1 090 MHz	
extended squitter emitted from		extended squitter emitted from	

	the transponder). In such cases, aircraft may not be able to comply with ATC instructions related to ADS-B operation	
2.3.11	To request transmission of pressure-altitude	a) SQUAWK CHARLIE; b) TRANSMIT ADS-B ALTITUDE.
2.3.12	To request pressure setting check and confirmation of level	CHECK ALTIMETER SETTING AND CONFIRM (level).
2.3.13	To request termination of pressure-altitude transmission because of faulty operation	 a) STOP SQUAWK CHARLIE WRONG INDICATION; b) STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, or reason)].
2.3.14	To request level check	CONFIRM (level).
2.3.15	Controller queries a discrepancy between the displayed 'Selected Level' and the cleared level	CHECK SELECTED LEVEL. CLEARED LEVEL IS (<i>level</i>) CHECK SELECTED LEVEL. CONFIRM CLIMBING (<i>or</i> DESCENDING) TO (<i>or</i> MAINTAINING) (<i>level</i>)
	Note: The controller will not state on radiotelephony the value of the 'Selected Level' observed on the situation display	*CLIMBING (or DESCENDING) TO (or MAINTAINING) (level) (appropriate information on selected level) '*' denotes pilot transmission.

3. AUTOMATIC DEPENDENT SURVEILLANCE — CONTRACT (ADS-C) PHRASEOLOGIES

3.1 General ADS-C phraseologies

	Circumstances	Phraseologies
3.1.1	ADS-C degradation	ADS-C (or ADS-CONTRACT) OUT OF SERVICE
		(appropriate information as necessary).

4. ALERTING PHRASEOLOGIES

4.1 Alerting phraseologies

	Circumstances	Phraseologies
4.1.1	Low altitude warning	(aircraft call sign) LOW ALTITUDE WARNING,
		CHECKYOUR ALTITUDE IMMEDIATELY, QNH IS
		(number) [(units)]. [THE MINIMUM FLIGHT
		ALTITUDE IS (altitude)].
4.1.2	Terrain alert	(aircraft call sign) TERRAIN ALERT, (suggested pilot
		action, if possible).

5. GROUND CREW/FLIGHT CREW PHRASEOLOGIES

5.1 Ground crew/flight crew phraseologies

	Circumstances	Phraseologies
5.1.1	Starting procedures (ground	a) [ARE YOU] READY TO START UP?;
	crew/cockpit)	*b) STARTING NUMBER (engine number(s)).
		Note 1. The ground crew should follow this exchange by either a reply on the intercom or a
		exchange by chiner a repry off the intercom of a

		distinct visual signal to indicate that all is clear and
		that the start-up as indicated may proceed.
		Note 2. Unambiguous identification of the parties
		concerned is essential in any communications
		betweenground crew and pilots.
		'*' denotes pilot transmission.
5.1.2	Pushback procedures	
	(ground crew/cockpit)	a) ARE YOU READY FOR PUSHBACK?:
		*b) READY FOR PUSHBACK;
		c) CONFIRM BRAKES RELEASED:
		*d) BRAKES RELEASED:
		e) COMMENCING PUSHBACK:
		f) PUSHBACK COMPLETED:
		$*\sigma$) STOP PLISHBACK.
		b) CONFIDMERATES SET
		1) CONFIRM DRAKES SET, *:) DDAVES SET.
		1) BRAKES SET;
		*J) DISCONNECT;
		k) DISCONNECTING STAND BY FOR VISUAL AT
		YOURLEFT (<i>or</i> RIGHT).
		Note.— This exchange is followed by a visual
		signal to the pilot to indicate that disconnect is
		completed and allis clear for taxiing.
		'*' denotes pilot transmission.

6. AIR TRAFFIC FLOW MANAGEMENT (ATFM)

7.

6.1	ATFM Calculated take-off time (CTOT) delivery resulting from a slot allocation message (SAM).	SLOT (time)
	Change to CTOT resulting from aslot revision message (SRM).	REVISED SLOT (time)
	CTOT cancellation resulting from a slot cancellation message (SLC).	SLOT CANCELLED, REPORT READY
	Flight suspension until further notice (resulting from flight suspension message (FLS)).	FLIGHT SUSPENDED UNTIL FURTHER NOTICE, DUE (reason)
	Flight de-suspension resulting from a de-suspension message (DES).	SUSPENSION CANCELLED, REPORT READY
	Denial of start-up when requested too late to comply with the given CTOT.	UNABLE TO APPROVE START-UP CLEARANCE DUE SLOTEXPIRED, REQUEST A NEW SLOT
	Denial of start-up when requested too early to comply with the given CTOT.	UNABLE TO APPROVE START-UP CLEARANCE DUE SLOT (<i>time</i>), REQUEST START-UP AT (<i>time</i>)
RADIO MANI	DATORY ZONES (RMZ)	
7.1	RMZ	*a) (aircraft call sign), (type of aircraft), (position), (level), IER (or VER), (intentions), (other information),
	Initial call before entry	b) (aircraft call sign) ROGER. Note.— Once the pilot's initial call has been acknowledged by ATS, they may enter the RMZ.

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c) (aircraft call sign) STANDBY. Note.— Where a pilot is instructed to "STANDBY" following their initial call, they should remain outside the RMZ until their initial call has been acknowledged by ATS. '*' denotes pilot transmission.

GM1 SERA.14001 General

Messages concerning acts of unlawful interference constitute a case of exceptional circumstances which may preclude the use of recognised communication procedures used to determine message category and priority.

GM2 SERA.14001 General

When a general call 'ALL STATIONS' has been made, meaning that the call is addressed to all stations likely to intercept, no reply is expected unless individual stations are subsequently called to acknowledge receipt.

AMC1 SERA.14015 Language to be used in air-ground communication

The competent authority should only prescribe other conditions for the use of English language at aerodromes with more than 50 000 international IFR movements per year for specific cases, based on an individual assessment of the local arrangements. In any case, deviation from the requirement should be limited to exceptional cases and should be accompanied with a safety assessment.

In States which decide not to apply the requirement to use the English language, the study referred to in SERA.14015 should include an independent and comprehensive assessment of the impact of not using English for air-ground radio communications. Such an assessment should in particular take into account:

- (a) Any available accident and incident investigation reports at least at EU level, where the use of language has been identified as a contributing factor. For this purpose, the central repository created in accordance with Commission Regulations (EC) Nos 1321/2007 and 996/2010 for such reports should also be consulted.
- (b) The proportion of pilots frequenting that airport, with English language proficiency endorsement.
- (c) The proportion of pilots frequenting that airport, lacking language proficiency endorsement in the alternative language to be used.
- (d) A consultation of flight crews operating at the airport in question, on their preferences and ability to use the languages in question.
- (e) A consultation of the safety investigation authority.

GM1 SERA.14015 Language to be used in air-ground communication

In addition to the requirement in SERA.14015, positive consideration should be given by competent

authorities to the benefits of situational awareness which could improve safety on airports and relevant surrounding airspace sectors by extending the use of the English language on some safety critical frequencies at aerodromes and relevant surrounding airspace sectors also with less than 50 000 commercial IFR movements per year, but with international traffic, and a large majority of gualified pilots with acceptable level of English. This consideration would in particular encompass:

- (a) use of a single frequency for all the safety-critical operations on a runway or a set of runways;
- (b) the need to and feasibility of applying the requirement for English-only communications also to communications with vehicles in order to enhance situational awareness.

where this consideration could lead to a change in current communication arrangements, it should be based on the outcome of a local safety assessment;

GM2 SERA.14015 Language to be used in air-ground communication

The competent authority should also consider extending the requirement for the use of English language to aerodromes with less than 50 000 international IFR movements per year based on local needs, such as seasonally high levels of international air traffic.

AMC1 SERA.14025 Principles governing the identification of ATS routes other than standard departure and arrival routes

LETTERS 'F' AND 'G'

Where letters 'F' or 'G' are added after the basic designator of the ATS route in question, in order to indicate the type of service provided:

- (a) letter 'F' indicates that on the route or portion thereof advisory service only is provided; and
- (b) letter 'G' indicates that on the route or portion thereof flight information service only is provided,
- (c) the flight crew are not required to use them in voice communications.

GM1 SERA.14030 Use of designators for standard instrument departure and arrival routes

For the purpose of identification of routes, the words 'departure', 'arrival', and 'visual' are considered to be an integral element of the plain language designator.

GM1 SERA.14035(a)(1) Transmission of numbers in radiotelephony

CALL SIGN, HEADING, RUNWAY ANDWIND

The following examples illustrate the application.

aircraft call signs	transmitted as
CCA 238	Air China two three eight
OAL 242	Olympic two four two

AMC and GM for Standardised European Rules of the Air (SERA) as retained in (and amended by) UK law)

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headings	transmitted as
100 degrees	heading one zero zero
080 degrees	heading zero eight zero

runway	transmitted as
27	runway two seven
30	runway three zero
wind direction and speed	transmitted as
200 degrees 70 knots	wind two zero zero degrees seven zero knots
160 degrees 18 knots gusting 30 knots	wind one six zero degrees one eight knots gusting three zero knots

GM2 SERA.14035(a)(1)(i) Transmission of numbers in radiotelephony

FLIGHT LEVELS

The following examples illustrate the application.

flight levels	transmitted as
FL 180	flight level one eight zero
FL 200	flight level two hundred

GM3 SERA.14035(a)(1)(ii) Transmission of numbers in radiotelephony

ALTIMETER SETTING

The following examples illustrate the application.

altimeter setting	transmitted as
1009 hPa	QNH one zero zero nine
1000 hPa	QNH one thousand
993 hPa	QNH nine nine three HECTOPASCALS

GM3 SERA.14035(a)(1)(ii) Transmission of numbers in radiotelephony

TRANSPONDER CODES

The following examples illustrate the application.

transponder codes	transmitted as
2400	squawk two four zero zero
1000	squawk one thousand
2000	

GM1 SERA.14035(a)(2) Transmission of numbers in radiotelephony

ALTITUDE

The following examples illustrate the application.

altitude	transmitted as
800	eight hundred
3 400	three thousand four hundred
12 000	one two thousand

GM2 SERA.14035(a)(2) Transmission of numbers in radiotelephony

CLOUD HEIGHT

The following examples illustrate the application.

cloud height	transmitted as
2 200	two thousand two hundred
4 300	four thousand three hundred

GM3 SERA.14035(a)(2) Transmission of numbers in radiotelephony

VISIBILITY

The following examples illustrate the application.

visibility	transmitted as
1 000	visibility one thousand
700	visibility seven hundred

GM4 SERA.14035(a)(2) Transmission of numbers in radiotelephony

RUNWAY VISUAL RANGE

The following examples illustrate the application.

runway visual range	transmitted as
600	RVR six hundred
1 700	RVR one thousand seven hundred

GM5 SERA.14035(a)(5) Transmission of numbers in radiotelephony

DECIMALS

The following examples illustrate the application.

number	transmitted as
100.3	ONE ZERO ZERO DECIMAL THREE
38 143.9	THREE EIGHT ONE FOUR THREE DECIMAL NINE

GM1 SERA.14035(a)(6) Transmission of numbers in radiotelephony

TRANSMISSION OF NUMBERS FOR RADIOTELEPHONY CHANNEL FREQUENCIES

(a) The following examples illustrate the application of the procedure.

Channel	Transmitted as
118.000	ONE ONE EIGHT DECIMAL ZERO
118.005	ONE ONE EIGHT DECIMAL ZERO ZERO FIVE
118.010	ONE ONE EIGHT DECIMAL ZERO ONE ZERO
118.025	ONE ONE EIGHT DECIMAL ZERO TWO FIVE
118.050	ONE ONE EIGHT DECIMAL ZERO FIVE ZERO
118.100	ONE ONE EIGHT DECIMAL ONE

(b) Caution must be exercised with respect to the indication of transmitting channels in VHF radiotelephony communications when all six digits of the numerical designator are used in airspace where communication channels are separated by 25 kHz, because on aircraft installations with a channel separation capability of 25 kHz or more, it is only possible to select the first five digits of the numerical designator on the radio management panel.

GM1 SERA.14045 Transmitting technique

BREAK

'BREAK' is to be used where there is no clear distinction between the text and other portions of the message.

GM2 SERA.14045 Transmitting technique

CHECK

'CHECK' is not to be used in any other context than 'examine a system or procedure'. No answer is normally expected.

GM3 SERA.14045 Transmitting technique

MAINTAIN

For example, 'Maintain VFR'.

GM4 SERA.14045 Transmitting technique

OVER

'OVER' is not normally used in VHF communications.

GM5 SERA.14045 Transmitting technique

OUT

'OUT' is not normally used in VHF communications.

GM6 SERA.14045 Transmitting technique

ROGER

'ROGER' is under no circumstances to be used in reply to a question requiring 'READ BACK' or a direct answer in the affirmative (AFFIRM) or negative (NEGATIVE).

GM7 SERA.14045 Transmitting technique

STANDBY

The caller would normally re-establish contact if the delay is lengthy. 'STANDBY' is not an approval or denial.

GM8 SERA.14045 Transmitting technique

UNABLE

'UNABLE' is normally followed by a reason.

GM1 SERA.14050 Radiotelephony call signs for aircraft

PREFIX TO CALL SIGNS

The name of the aircraft manufacturer or of the aircraft model may be used as a radiotelephony prefix to the Type (a) call sign.

GM2 SERA.14050 Radiotelephony call signs for aircraft

EXAMPLES OF FULL AND ABBREVIATED CALL SIGNS

		Type a)		Type b)	Type c)
Full call sign	N57826	*CESSNA FABCD	*CITATION FABCD	VARIG PVMA	SCANDINAVIAN 937
Abbreviated call sign	N26 <i>or</i> N826	CESSNA CD <i>or</i> CESSNA BCD	CITATION CD or CITATION BCD	VARIG MA <i>or</i> VARIG VMA	(no abbreviated form)

*The examples illustrate the application of GM1 SERA.14050.

GM1 SERA.14055(b) Radiotelephony procedures

RADIOTELEPHONY CALLING PROCEDURE*

	Type a)	Type b)	Type c)
Designation of the station called	NEW YORK RADIO	NEW YORK RADIO	NEW YORK RADIO
Designation of the station calling	GABCD**	SPEEDBIRD ABCD**	AEROFLOT 321**

* In certain cases where the call is initiated by the aeronautical station, the call may be affected by transmission of coded tone signals.

** With the exception of the telephony designators and the type of aircraft, each character in the call sign is to be spoken separately. When individual letters are spelled out, the radiotelephony spelling alphabet prescribed in SERA.14020 is to be used. Numbers are to be spoken in accordance with SERA.14040.

RADIOTELEPHONY REPLY PROCEDURE

	Type a)	Type b)	Type c)
Designation of the station called	GABCD*	SPEEDBIRD ABCD*	AEROFLOT 321*
Designation of the answering station	NEW YORK RADIO	NEW YORK RADIO	NEW YORK RADIO

* With the exception of the telephony designator and the type of aircraft, each character in the call sign is to be spoken separately. When individual letters are spelled out, the radiotelephony spelling alphabet prescribed in SERA.14020 is to be used. Numbers are to be spoken in accordance with SERA.14040.

AMC1 SERA.14055(b)(2) Radiotelephony procedures

Where authorised by the competent authority, after the initial establishment of radiotelephony contact between an aircraft and an ATS unit, for subsequent transfers of communication within the same ATS unit, the ATS position being called need not reply with its call sign. Such authorisation will be agreed with the ATS provider and duly promulgated.

GM1 SERA.14075(c)(4) Exchange of communications

REPETITIONS

Specific items are to be requested, as appropriate, such as 'SAY AGAIN ALTIMETER', 'SAY AGAIN WIND'.

AMC1 SERA.14080 Communications watch/Hours of service

GUARD ON FREQUENCY 121,5 MHZ

Aircraft on flights other than those specified should guard the emergency frequency 121,5 MHz to the extent possible.

GM1 SERA.14095(b)(1) Distress and urgency radiotelephony communication procedures

ACTION BY THE AIRCRAFT IN DISTRESS

- (a) The provisions may be supplemented by the following measures:
 - (1) the distress message of an aircraft in distress being made on the emergency frequency 121,5 MHz or another aeronautical mobile frequency, if considered necessary or desirable. Not all aeronautical stations maintain a continuous guard on the emergency frequency,
 - (2) the distress message of an aircraft in distress being broadcast if time and circumstances render this course preferable;
 - (3) the aircraft transmitting on the maritime mobile service radiotelephony calling

frequencies;

- (4) the aircraft using any means at its disposal to attract attention and make known its conditions (including the activation of the appropriate SSR mode and code);
- (5) any station taking any means at its disposal to assist an aircraft in distress;
- (6) any variation on the elements listed, when the transmitting station is not itself in distress, provided that such circumstance is clearly stated in the distress message.
- (b) The ATS unit addressed will normally be that ATS unit communicating with the aircraft or in whose area of responsibility the aircraft is operating.

GM1 SERA.14095(b)(2)(iii)(B) Distress and urgency radiotelephony communication procedures

ACTION BY THE ATS UNIT

The requirement to inform the aircraft operator concerned does not have priority over any other action which involves the safety of the flight in distress, or of any other flight in the area, or which might affect the progress of expected flights in the area.

GM1 SERA.14095(c)(1) Distress and urgency radiotelephony communication procedures

ACTION BY AIRCRAFT REPORTING AN URGENCY CONDITION

- (a) These provisions are not intended to prevent an aircraft from broadcasting an urgency message if time and circumstances render this course preferable.
- (b) The ATS unit addressed will normally be that ATS unit communicating with the aircraft or in whose area of responsibility the aircraft is operating.

GM1 SERA.14095(c)(1)(ii)(F) Distress and urgency radiotelephony communication procedures

Any other useful information may consist of information such as but not limited to remaining aircraft endurance/fuel, number of persons on board, possible presence of hazardous materials and the nature thereof, aircraft colour/markings, survival aids, etc. and may also be transmitted in situation of distress.

GM1 SERA.14095(c)(2) Distress and urgency radiotelephony communication procedures

ACTION BY ATS WHEN AN URGENCY CONDITION IS REPORTED

The requirement to inform the aircraft operating agency concerned does not have priority over any other action which involves the safety of the flight in distress, or of any other flight in the area, or which might affect the progress of expected flights in the area.

APPENDIX 1 SIGNALS

GM1 to Appendix 1(4.1) MARSHALLING SIGNALS

FROM A SIGNALMAN/MARSHALLER TO AN AIRCRAFT — GENERAL

- (a) The meaning of the relevant signals remains the same if bats, illuminated wands or torch lights are held rather than the signalman's hands being illuminated.
- (b) The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No 1 engine being the port outer engine).
- (c) References to wands may also be read to refer to daylight-fluorescent table-tennis bats or gloves (daytime only).
- (d) References to the signalman may also be read to refer to marshaller.
- (e) The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.

GM1 to Appendix 1(4.2.1.1) MARSHALLING SIGNALS

FROM THE PILOT OF AN AIRCRAFT TO A SIGNALMAN/MARSHALLER - BRAKES

When providing the signal for 'brakes engaged' the moment the fist is clenched indicates the moment of brake engagement. When providing the signal for 'brakes released' the moment the fingers are extended indicates the moment of brake release.

GM1 to Appendix 1(5.1) STANDARD EMERGENCY HAND SIGNALS

GENERAL

In order to communicate more effectively with the cabin crew, emergency hand signals may be given by ARFF firefighters from positions other than those that would be used by a signalman to provide marshalling signals.

ANNEX: Rules of the Air

Appendix 4 ATS airspace classes – services provided and flight requirements

APPENDIX 2 UNMANNED FREE BALLOONS

GM1 to Appendix 2(3.3b) OPERATING LIMITATIONS AND EQUIPMENT REQUIREMENTS

SUPER-PRESSURE BALLOONS

Super-pressure balloons do not require flight termination devices as they quickly rise after payload discharge and burst without the need for a device or system designed to puncture the balloon envelope. In this context a super-pressure balloon is a simple non-extensible envelope capable of withstanding a differential of pressure, higher inside than out. It is inflated so that the smaller night-time pressure of the gas still fully extends the envelope. Such a super-pressure balloon will keep essentially constant level until too much gas diffuses out of it.

Appendix 4 ATS airspace classes – services provided and flight requirements

APPENDIX 4 ATS AIRSPACE CLASSES – SERVICES PROVIDED AND FLIGHT REQUIREMENTS

GM1 to Appendix 4 ATS airspace classes — services provided and flight requirements

GENERAL

The purpose of this Appendix is to show the requirements related to each specific airspace class in a concise manner. Therefore, it does not provide any specifications additional to those already expressed in the implementing rule.

Appendix 5 Technical specifications related to aircraft observations and reports by voice communications

APPENDIX 5 TECHNICAL SPECIFICATIONS RELATED TO AIRCRAFT OBSERVATIONS AND REPORTS BY VOICE COMMUNICATIONS

GM1 to Appendix 5 (2 — Section 1) DETAILED REPORTING INSTRUCTIONS

POSITION

Example:

'4620North07805West', '4620North07800West', '4600North07800West', LN ('LIMA NOVEMBER'), 'MAY', 'HADDY' or 'DUB 180 DEGREES 40 MILES'

GM1 to Appendix 5 (2 — Section 1) DETAILED REPORTING INSTRUCTIONS

FLIGHT LEVEL OR ALTITUDE

Example:

'FLIGHT LEVEL 310'

GM1 to Appendix 5 (2 — Section 3) DETAILED REPORTING INSTRUCTIONS

PHENOMENON PROMPTING A SPECIAL AIR-REPORT - VOLCANIC ASH CLOUD, PRE-ERUPTION VOLCANIC ACTIVITY, OR VOLCANIC ERUPTION

In case of volcanic ash cloud, pre-eruption volcanic activity, or volcanic eruption, in accordance with **SERA.12005**, a post-flight report should also be made on the special air-report of volcanic activity form (Model VAR).

GM1 to Appendix 5 (3) FORWARDING OF METEOROLOGICAL INFORMATION RECEIVED BY VOICE COMMUNICATIONS

AIRCRAFT IDENTIFICATION

Example:

'New Zealand 103' as 'ANZ103'

GM1 to Appendix 5 (3 — Section 1) FORWARDING OF METEOROLOGICAL INFORMATION RECEIVED BY VOICE COMMUNICATIONS

POSITION

Example:

'4620N07805W', '4620N078W', '46N078W', 'LN', 'MAY', 'HADDY' or 'DUB180040'.

GM1 to Appendix 5 (1.1.4 and 2.1) SPECIAL AIR-REPORTS

Examples of special air reports by voice communication

AS SPOKEN IN RADIOTELEPHONY	AS RECORDED BY THE AIR TRAFFIC SERVICES UNIT AND FORWARDED TO THE METEOROLOGICAL OFFICE CONCERNED
I ¹ AIREP SPECIAL CLIPPER WUN ZERO WUN POSITION FIFE ZERO FOWER FIFE NORTH ZERO TOO ZERO WUN FIFE WEST WUN FIFE TREE SIX FLIGHT LEVEL TREE WUN ZERO CLIMBING TO FLIGHT LEVEL TREE FIFE ZERO THUNDERSTORMS WITH HAIL	I ARS PAA101 5045N02015W 1536 F310 ASC F350 TSGR
II ² SPECIAL NIUGINI TOO SEVen TREE OVER MADANG ZERO AIT FOWer SIX WUN NINer TOUSAND FEET TURBULENCE SEVERE	II ARS ANG273 MD 0846 19000FT TURB SEV

¹ A special air-report which is required because of the occurrence of widespread thunderstorms with hail.

² A special air-report which is required because of severe turbulence. The aircraft is on QNH altimeter setting