

European Aviation Safety Agency

Acceptable Means of Compliance and Guidance Material to the rules of the air

Amendment 1

13 October 2016¹

¹ For the date of entry into force please refer to Decision 2013/013/R in the EASA [Official Publication](#).

The Annex to Decision 2013/013/R is hereby amended as follows:

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

1. deleted text is marked with ~~strike-through~~;
2. new or amended text is highlighted in grey; and
3. an ellipsis (...) indicates that the remaining text is unchanged in front of or following the reflected amendment.

AMC/GM to Regulation (EU) No 923/2012

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(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(27) 'Air traffic advisory service'

AIR TRAFFIC ADVISORY SERVICE

- (d) 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.
- (e) 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.
- (f) ATS units providing air traffic advisory service:
 - (4) *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;
 - (5) *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
 - (6) *pass* to aircraft traffic information comprising the same information as that prescribed for area control service.

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.

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.

AMC/GM to Annex 'RULES OF THE AIR'

SECTION 3

General rules and collision avoidance

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.

SECTION 4

Flight plans

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).

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.

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.

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.

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.

GM1SERA.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(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.

SECTION 7
Air traffic services

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,

SECTION 8
Air traffic control service

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(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(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(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).

AMC1 SERA.8035 Communications

ESTABLISHMENT OF PILOT–CONTROLLER COMMUNICATIONS

Direct pilot–controller communications should be established prior to the provision of ATS surveillance 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 CONDITIONS AT 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.

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

- (a) When an aircraft operated as a controlled flight experiences sudden decompression or a malfunction 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 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 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.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 overflowed, care must also be taken that:

- (a) 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.

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.

SECTION 13

Use of SSR transponders

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 re-verify 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. Note that Article 4(4) of Commission Implementing Regulation (EU) No 1207/2011² also addresses this issue.

SECTION 14

Voice communication procedures

AMC1 SERA.14001 General

For standardised phraseology, refer to the Appendix I.

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:

² 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).

- (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 qualified 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 AND WIND**

The following examples illustrate the application.

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

<i>headings</i>	<i>transmitted as</i>
100 degrees	heading one zero zero
080 degrees	heading zero eight zero

<i>runway</i>	<i>transmitted as</i>
27	runway two seven
30	runway three zero
<i>wind direction and speed</i>	<i>transmitted as</i>
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.

<i>flight levels</i>	<i>transmitted as</i>
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.

<i>altimeter setting</i>	<i>transmitted as</i>
1009 hPa	QNH one zero zero nine
1000 hPa	QNH one thousand
993 hPa	QNH nine nine three

GM4 SERA.14035(a)(1)(iii) Transmission of numbers in radiotelephony
TRANSPONDER CODES

The following examples illustrate the application.

<i>transponder codes</i>	<i>transmitted as</i>
2400	squawk two four zero zero
1000	squawk one thousand
2000	squawk two thousand

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

The following examples illustrate the application.

<i>altitude</i>	<i>transmitted as</i>
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.

<i>cloud height</i>	<i>transmitted as</i>
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.

<i>visibility</i>	<i>transmitted as</i>
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.

<i>runway visual range</i>	<i>transmitted as</i>
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.

<i>number</i>	<i>transmitted as</i>
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.

<i>Channel</i>	<i>Transmitted as</i>
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

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

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

GM1 SERA.14055(b) Radiotelephony procedures

RADIOTELEPHONY CALLING PROCEDURE*

	<i>Type a)</i>	<i>Type b)</i>	<i>Type c)</i>
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 effected 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

	<i>Type a)</i>	<i>Type b)</i>	<i>Type c)</i>
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.

AMC/GM to appendices

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. ³ AIREP SPECIAL CLIPPER WUN ZERO WUN POSITION FIFE ZERO FOWER FIFE NORTH ZERO TOO ZERO WUN FIFE WEST WUN FIFE TREE SIX	I.- ARS PAA101 5045N02015W 1536 F310 ASC F350 TSGR

³ A special air-report which is required because of the occurrence of widespread thunderstorms with hail.

<p>FLIGHT LEVEL TREE WUN ZERO CLIMBING TO FLIGHT LEVEL TREE FIFE ZERO THUNDERSTORMS WITH HAIL</p>	
<p>II.-⁴ SPECIAL NIUGINI TOO SEVen TREE OVER MADANG ZERO AIT FOWer SIX WUN NINer TOUSAND FEET TURBULENCE SEVERE</p>	<p>II.- ARS ANG273 MD 0846 19000FT TURB SEV</p>

⁴ A special air-report which is required because of severe turbulence. The aircraft is on QNH altimeter setting

Appendix 1

GM1 SERA.14001 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.

AMC1 SERA.14001 General

1. ATC PHRASEOLOGIES

1.1 General

	<i>Circumstances</i>	<i>Phraseologies</i>
1.1.1	<p>DESCRIPTION OF LEVELS (SUBSEQUENTLY REFERRED TO AS '(LEVEL)')</p> <p><i>Note.— In circumstances where clarification is required, the word 'ALTITUDE' or 'HEIGHT' may be included, e.g. 'DESCEND TO ALTITUDE TWO THOUSAND FEET'.</i></p> <p>when passing level information in form of vertical distance from the other traffic</p>	<p>a) FLIGHT LEVEL (<i>number</i>); or</p> <p>b) [HEIGHT] (<i>number</i>) METRES; or</p> <p>c) [ALTITUDE] (<i>number</i>) FEET.</p> <p>d) (<i>number</i>) FEET/METRES ABOVE (or BELOW)</p>
1.1.2	<p>LEVEL CHANGES, REPORTS AND RATES</p>	<p>a) CLIMB (or DESCEND); <i>followed as necessary by:</i></p>

... instruction that a climb (or descent) to a level within the vertical range defined is to commence

... for SST aircraft only

... to require action at a specific time or place

- 1) TO *(level)*
- 2) TO AND MAINTAIN BLOCK *(level)* TO *(level)*;
- 3) TO REACH *(level)* AT *(or BY)* *(time or significant point)*;
- 4) REPORT LEAVING *(or REACHING, or PASSING)* *(level)*;
- 5) AT *(number)* METRES PER SECOND *(or FEET PER MINUTE)* [OR GREATER *(or OR LESS)*];
- 6) REPORT STARTING ACCELERATION *(or DECELERATION)*.
- 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;

... 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 return to the ATC clearance or instruction is initiated (Pilot and controller interchange)

k) AFTER PASSING (*significant point*);

l) 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;

*r) TCAS RA;

s) ROGER;

*t) CLEAR OF CONFLICT, RETURNING TO (*assigned clearance*);

u) ROGER (*or alternative instructions*);

	<p>... after the response to an ACAS RA is completed and the assigned ATC clearance or instruction has been resumed (Pilot and controller interchange)</p>	<p>*v) CLEAR OF CONFLICT (<i>assigned clearance</i>) RESUMED;</p> <p>w) ROGER (<i>or alternative instructions</i>);</p>
	<p>... after an ATC clearance or instruction contradictory to the ACAS RA is received, the flight crew will follow the RA and inform ATC directly (Pilot and controller interchange)</p>	<p>*x) UNABLE, TCAS RA;</p> <p>y) ROGER;</p>
	<p>... clearance to cancel level restriction(s) of the vertical profile of a SID during climb</p>	<p>z) CLIMB TO (<i>level</i>) [LEVEL RESTRICTION(S) (<i>SID designator</i>) CANCELLED (<i>or</i>) LEVEL RESTRICTION(S) (<i>SID designator</i>) AT (<i>point</i>) CANCELLED];</p>
	<p>... clearance to cancel level restriction(s) of the vertical profile of a STAR during descent</p>	<p>aa) DESCEND TO (<i>level</i>) [LEVEL RESTRICTION(S) (<i>STAR designator</i>) CANCELLED (<i>or</i>) LEVEL RESTRICTION(S) (<i>STAR designator</i>) AT (<i>point</i>) CANCELLED].</p>
		<p>'*' denotes pilot transmission.</p>
<p>1.1.3</p>	<p>MINIMUM FUEL</p> <p>... indication of minimum fuel</p>	<p>*a) MINIMUM FUEL:</p>
		<p>b) ROGER [NO DELAY EXPECTED <i>or</i> EXPECT (<i>delay information</i>)].</p> <p>'*' denotes pilot transmission.</p>
<p>1.1.4</p>	<p>TRANSFER OF CONTROL AND/OR FREQUENCY CHANGE</p>	<p>a) CONTACT (<i>unit call sign</i>) (<i>frequency</i>) [NOW];</p>
		<p>b) AT (<i>or</i> OVER) (<i>time or place</i>) [<i>or</i> WHEN] [PASSING/LEAVING/REACHING (<i>level</i>)] CONTACT (<i>unit call sign</i>) (<i>frequency</i>);</p>

Note.— An aircraft may be requested to ‘STAND BY’ on a frequency when it is intended that the ATS unit will initiate communications soon and to ‘MONITOR’ a frequency when information is being broadcast thereon.

- c) IF NO CONTACT (*instructions*);
- d) STAND BY FOR (*unit call sign*) (*frequency*);
- *e) REQUEST CHANGE TO (*frequency*);
- f) FREQUENCY CHANGE APPROVED;
- g) MONITOR (*unit call sign*) (*frequency*);
- *h) MONITORING (*frequency*);
- i) WHEN READY, CONTACT (*unit call sign*) (*frequency*);
- j) REMAIN THIS FREQUENCY.

*' denotes pilot transmission.

1.1.5

8.33 KHZ CHANNEL SPACING

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 8.33 kHz capability

a) CONFIRM EIGHT POINT THREE THREE;

... to indicate 8.33 kHz capability

*b) AFFIRM EIGHT POINT THREE THREE;

... to indicate lack of 8.33 kHz capability

*c) NEGATIVE EIGHT POINT THREE THREE;

... to request UHF capability

d) CONFIRM UHF;

... to indicate UHF capability

*e) AFFIRM UHF;

... to indicate lack of UHF capability

*f) NEGATIVE UHF;

	<p>... to request status in respect of 8.33 kHz exemption</p> <p>... to indicate 8.33 kHz exempted status</p> <p>... to indicate 8.33 kHz non-exempted status</p> <p>... to indicate that a certain clearance is given because otherwise a non-equipped and/or non-exempted aircraft would enter airspace of mandatory carriage</p>	<p>g) CONFIRM EIGHT POINT THREE THREE EXEMPTED;</p> <p>*h) AFFIRM EIGHT POINT THREE THREE EXEMPTED;</p> <p>*i) NEGATIVE EIGHT POINT THREE THREE EXEMPTED;</p> <p>j) DUE EIGHT POINT THREE THREE REQUIREMENT.</p> <p>'*' denotes pilot transmission.</p>
1.1.6	<p>CHANGE OF CALL SIGN</p> <p>... to instruct an aircraft to change its type of call sign</p> <p>... to advise an aircraft to revert to the call sign indicated in the flight plan</p>	<p>a) CHANGE YOUR CALL SIGN TO <i>(new call sign)</i> [UNTIL FURTHER ADVISED];</p> <p>b) REVERT TO FLIGHT PLAN CALL SIGN <i>(call sign)</i> [AT <i>(significant point)</i>].</p>
1.1.7	<p>TRAFFIC INFORMATION</p> <p>... to pass traffic information</p> <p>... to acknowledge traffic information</p>	<p>a) TRAFFIC <i>(information)</i>;</p> <p>b) NO REPORTED TRAFFIC;</p> <p>*c) LOOKING OUT;</p> <p>*d) TRAFFIC IN SIGHT;</p> <p>*e) NEGATIVE CONTACT <i>[reasons]</i>;</p> <p>f) [ADDITIONAL] TRAFFIC <i>(direction)</i> BOUND <i>(type of aircraft)</i> <i>(level)</i> ESTIMATED <i>(or OVER)</i> <i>(significant point)</i> AT <i>(time)</i>;</p>

1.1.8

METEOROLOGICAL CONDITIONS

... for multiple RVR observations

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*).

'*' denotes pilot transmission.

a) [SURFACE] WIND (*number*) DEGREES (*speed*) (*units*);

b) WIND AT (*level*) (*number*) DEGREES (*number*) 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 (*or RVR*) [RUNWAY (*number*)] (*distance*) (*units*);

e) RUNWAY VISUAL RANGE (*or RVR*) RUNWAY (*number*) NOT AVAILABLE (*or NOT REPORTED*);

f) RUNWAY VISUAL RANGE (*or RVR*) [RUNWAY (*number*)] (*first position*) (*distance*) (*units*), (*second position*) (*distance*) (*units*), (*third position*) (*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 touchdown zone, followed by the midpoint zone and ending with the roll-out/stop-end zone report.

<p>... in the event that RVR information on any one position is not available, this information will be included in the appropriate sequence</p>	<p>g) RUNWAY VISUAL RANGE (or RVR) [RUNWAY (number)] (first position) (distance) (units), (second position) NOT AVAILABLE, (third position) (distance) (units);</p> <p>h) PRESENT WEATHER (details);</p> <p>i) CLOUD (amount, [(type)] and height of base) (units) (or SKY CLEAR);</p> <p>j) CAVOK;</p> <p><i>Note.— ‘CAVOK’ pronounced ‘CAV-O-KAY’.</i></p> <p>k) TEMPERATURE [MINUS] (number) (and/or DEWPOINT [MINUS] (number));</p> <p>l) QNH (number) [units];</p> <p>m) QFE (number) [(units)];</p> <p>n) (aircraft type) REPORTED (description) ICING (or TURBULENCE) [IN CLOUD] (area) (time);</p> <p>o) REPORT FLIGHT CONDITIONS.</p>	
<p>... INFORMATION TO A PILOT CHANGING FROM IFR FLIGHT TO VFR FLIGHT WHERE IT IS LIKELY THAT FLIGHT IN VMC CANNOT BE MAINTAINED</p>	<p>p) INSTRUMENT METEOROLOGICAL CONDITIONS REPORTED (or forecast) IN THE VICINITY OF (location)</p>	
<p>1.1.9</p>	<p>POSITION REPORTING</p> <p>... to omit position reports until a specified position</p>	<p>a) NEXT REPORT AT (significant point);</p> <p>b) OMIT POSITION REPORTS [UNTIL (specify)];</p> <p>c) RESUME POSITION REPORTING.</p>
<p>1.1.10</p>	<p>ADDITIONAL REPORTS</p>	<p>a) REPORT PASSING (significant point);</p>

... to request a report at a specified place or distance

b) REPORT (*distance*) MILES (GNSS or DME) FROM (*name of DME station*) (or *significant point*);

... to report at a specified place or distance

*c) (*distance*) MILES (GNSS or DME) FROM (*name of DME station*) (or *significant point*);

d) REPORT PASSING (*three digits*) RADIAL (*name of VOR*) VOR;

... to request a report of present position

e) REPORT (GNSS or DME) DISTANCE FROM (*significant point*) or (*name of DME station*);

... to report present position

*f) (*distance*) MILES (GNSS or DME) FROM (*name of DME station*) (or *significant point*).

*' denotes pilot transmission.

1.1.11

AERODROME INFORMATION

a) [(*location*)] RUNWAY SURFACE CONDITION RUNWAY (*number*) (*condition*);

b) [(*location*)] RUNWAY SURFACE CONDITION RUNWAY (*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*);

1.1.12

OPERATIONAL STATUS OF VISUAL
AND NON-VISUAL AIDS

g)	RUNWAY REPORT AT (<i>observation time</i>) RUNWAY (<i>number</i>) (<i>type of precipitant</i>) UP TO (<i>depth of deposit</i>) MILLIMETRES. ESTIMATED SURFACE FRICTION GOOD (<i>or</i> MEDIUM TO GOOD, <i>or</i> MEDIUM, <i>or</i> MEDIUM TO POOR, <i>or</i> POOR);
h)	BRAKING ACTION REPORTED BY (<i>aircraft type</i>) AT (<i>time</i>) GOOD (<i>or</i> MEDIUM to GOOD, <i>or</i> MEDIUM, <i>or</i> MEDIUM to POOR, <i>or</i> POOR);
i)	RUNWAY (<i>or</i> TAXIWAY) (<i>number</i>) WET [<i>or</i> STANDING WATER, <i>or</i> SNOW REMOVED (<i>length</i> <i>and width as applicable</i>), <i>or</i> TREATED, <i>or</i> COVERED WITH PATCHES OF DRY SNOW (<i>or</i> WET SNOW, <i>or</i> COMPACTED SNOW, <i>or</i> SLUSH, <i>or</i> FROZEN SLUSH, <i>or</i> ICE, <i>or</i> WET ICE, <i>or</i> ICE UNDERNEATH, <i>or</i> ICE AND SNOW, <i>or</i> SNOWDRIFTS, <i>or</i> FROZEN RUTS AND RIDGES)];
j)	TOWER OBSERVES (<i>weather information</i>);
k)	PILOT REPORTS (<i>weather information</i>).
a)	(<i>specify visual or non-visual aid</i>) RUNWAY (<i>number</i>) (<i>description of deficiency</i>);
b)	(<i>type</i>) LIGHTING (<i>unserviceability</i>);
c)	GBAS/SBAS/MLS/ILS CATEGORY (<i>category</i>) (<i>serviceability state</i>);
d)	TAXIWAY LIGHTING (<i>description of deficiency</i>);
e)	(<i>type of visual approach slope indicator</i>) RUNWAY (<i>number</i>) (<i>description of deficiency</i>).

1.1.13

REDUCED VERTICAL SEPARATION
MINIMUM (RVSM) OPERATIONS

... to ascertain RVSM approval status of an aircraft

... to report RVSM approved status

... to report RVSM non-approved status followed by supplementary information

... to deny ATC clearance into RVSM airspace

... to report when severe turbulence affects the capability of an aircraft to maintain height-keeping requirements for RVSM

... to report that the equipment of an aircraft has degraded below minimum aviation system performance standards

...to request an aircraft to provide information as soon as RVSM-approved status has been regained or the pilot is ready to resume RVSM operations

... to request confirmation that an aircraft has regained RVSM-approved status or a pilot is ready to resume RVSM operations

a) CONFIRM RVSM APPROVED;

*b) AFFIRM RVSM;

*c) NEGATIVE RVSM [(supplementary information, e.g. State aircraft)];

d) UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] (level);

*e) UNABLE RVSM DUE TURBULENCE;

*f) UNABLE RVSM DUE EQUIPMENT;

g) REPORT WHEN ABLE TO RESUME RVSM;

h) CONFIRM ABLE TO RESUME RVSM;

	<p>... to report ability to resume RVSM operations after an equipment or weather-related contingency</p>	<p>*i) READY TO RESUME RVSM.</p> <p>‘*’ denotes pilot transmission.</p>
<p>1.1.14</p>	<p>GNSS SERVICE STATUS</p>	<p>a) GNSS REPORTED UNRELIABLE (or GNSS MAY NOT BE AVAILABLE [DUE TO INTERFERENCE]);</p> <p>1) IN THE VICINITY OF (location) (radius) [BETWEEN (levels)];</p> <p>or</p> <p>2) IN THE AREA OF (description) (or IN (name) FIR) [BETWEEN (levels)];</p> <p>b) BASIC GNSS (or SBAS, or GBAS) UNAVAILABLE FOR (specify operation) [FROM (time) TO (time) (or UNTIL FURTHER NOTICE)];</p> <p>*c) BASIC GNSS UNAVAILABLE [DUE TO (reason, e.g. LOSS OF RAIM or RAIM ALERT)];</p> <p>*d) GBAS (or SBAS) UNAVAILABLE.</p> <p>e) CONFIRM GNSS NAVIGATION : and</p> <p>*f) AFFIRM GNSS NAVIGATION.</p> <p>‘*’ denotes pilot transmission.</p>
<p>1.1.15</p>	<p>RNAV</p> <p>...RNAV arrival or departure procedure cannot be accepted by the pilot</p> <p>...pilot is unable to comply with an assigned terminal area procedure</p>	<p>*UNABLE (designator) DEPARTURE [or ARRIVAL] DUE RNAV TYPE</p> <p>*UNABLE (designator) DEPARTURE [or ARRIVAL] (reasons)</p>

...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 (*designator*) DEPARTURE [or ARRIVAL] DUE RNAV TYPE

...ATC unable to assign an arrival or departure procedure requested by the pilot

UNABLE TO ISSUE (*designator*) DEPARTURE [or ARRIVAL] (*reasons*)

...confirmation whether a specific RNAV arrival or departure procedure can be accepted

ADVISE IF ABLE (*designator*) DEPARTURE [or 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*);

b) (*aircraft call sign*) CLEARED TO;

c) RECLEARED (*amended clearance details*) [REST OF CLEARANCE UNCHANGED];

		<p>d) RECLEARED (<i>amended route portion</i>) TO (<i>significant point of original route</i>) [REST OF CLEARANCE UNCHANGED];</p> <p>e) ENTER CONTROLLED AIRSPACE (<i>or CONTROL ZONE</i>) [VIA (<i>significant point or route</i>)] AT (<i>level</i>) [AT (<i>time</i>)];</p> <p>f) LEAVE CONTROLLED AIRSPACE (<i>or CONTROL ZONE</i>) [VIA (<i>significant point or route</i>)] AT (<i>level</i>) (<i>or CLIMBING, or DESCENDING</i>);</p> <p>g) JOIN (<i>specify</i>) AT (<i>significant point</i>) AT (<i>level</i>) [AT (<i>time</i>)].</p>
1.2.2	INDICATION OF ROUTE AND CLEARANCE LIMIT	<p>a) FROM (<i>location</i>) TO (<i>location</i>);</p> <p>b) TO (<i>location</i>), <i>followed as necessary by:</i></p> <ol style="list-style-type: none"> 1) DIRECT; 2) VIA (<i>route and/or significant points</i>); 3) VIA FLIGHT PLANNED ROUTE; 4) VIA (<i>distance</i>) DME ARC (<i>direction</i>) OF (<i>name of DME station</i>); <p>c) (<i>route</i>) NOT AVAILABLE DUE (<i>reason</i>) ALTERNATIVE[S] IS/ARE (<i>routes</i>) ADVISE.</p>
1.2.3	MAINTENANCE OF SPECIFIED LEVELS	<p>a) MAINTAIN (<i>level</i>) [TO (<i>significant point</i>)];</p> <p>b) MAINTAIN (<i>level</i>) UNTIL PASSING (<i>significant point</i>);</p> <p>c) MAINTAIN (<i>level</i>) UNTIL (<i>minutes</i>) AFTER PASSING (<i>significant point</i>);</p>

	<p>d) MAINTAIN (level) UNTIL (time);</p> <p>e) MAINTAIN (level) UNTIL ADVISED BY (name of unit);</p> <p>f) MAINTAIN (level) UNTIL FURTHER ADVISED;</p> <p>g) MAINTAIN (level) WHILE IN CONTROLLED AIRSPACE;</p> <p>h) MAINTAIN BLOCK (level) TO (level).</p> <p><i>Note. — The term ‘MAINTAIN’ is not to be used in lieu of ‘DESCEND’ or ‘CLIMB’ when instructing an aircraft to change level.</i></p>
<p>1.2.4 SPECIFICATION OF CRUISING LEVELS</p>	<p>a) CROSS (significant point) AT (or ABOVE, or BELOW) (level);</p> <p>b) CROSS (significant point) AT (time) OR LATER (or BEFORE) AT (level);</p> <p>c) CRUISE CLIMB BETWEEN (levels) (or ABOVE (level));</p> <p>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).</p>
<p>1.2.5 EMERGENCY DESCENT</p>	<p>*a) EMERGENCY DESCENT (intentions);</p> <p>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, traffic information, etc.).</p> <p>‘*’ denotes pilot transmission.</p>

1.2.6	IF CLEARANCE CANNOT BE ISSUED IMMEDIATELY UPON REQUEST	EXPECT CLEARANCE <i>(or type of clearance)</i> AT <i>(time)</i> .
1.2.7	WHEN CLEARANCE FOR DEVIATION CANNOT BE ISSUED	UNABLE, TRAFFIC <i>(direction)</i> BOUND <i>(type of aircraft) (level)</i> ESTIMATED <i>(or OVER)</i> <i>(significant point)</i> AT <i>(time)</i> CALL SIGN <i>(call sign)</i> ADVISE INTENTIONS.
1.2.8	SEPARATION INSTRUCTIONS	<p>a) CROSS <i>(significant point)</i> AT <i>(time)</i> [OR LATER <i>(or OR BEFORE)</i>];</p> <p>b) ADVISE IF ABLE TO CROSS <i>(significant point)</i> AT <i>(time or level)</i>;</p> <p>c) MAINTAIN MACH <i>(number)</i> [OR GREATER <i>(or OR LESS)</i>] [UNTIL <i>(significant point)</i>];</p> <p>d) DO NOT EXCEED MACH <i>(number)</i>;</p> <p>e) CONFIRM ESTABLISHED ON THE TRACK BETWEEN <i>(significant point)</i> AND <i>(significant point)</i> [WITH ZERO OFFSET];</p> <p>*f) ESTABLISHED ON THE TRACK BETWEEN <i>(significant point)</i> AND <i>(significant point)</i> [WITH ZERO OFFSET];</p> <p>g) MAINTAIN TRACK BETWEEN <i>(significant point)</i> AND <i>(significant point)</i>. REPORT ESTABLISHED ON THE TRACK;</p> <p>*h) ESTABLISHED ON THE TRACK;</p> <p>i) CONFIRM ZERO OFFSET;</p> <p>*j) AFFIRM ZERO OFFSET.</p> <p>'*' denotes pilot transmission</p>
1.2.9	INSTRUCTIONS ASSOCIATED WITH FLYING A TRACK (OFFSET), PARALLEL TO THE CLEARED ROUTE	a) ADVISE IF ABLE TO PROCEED PARALLEL OFFSET;

Note. When used to apply a lateral VOR/GNSS separation confirmation of zero offset is required.

- 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 Approach control services

Circumstances

Phraseologies

1.3.1 DEPARTURE INSTRUCTIONS

- 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 APPROACH INSTRUCTIONS

- a) CLEARED (*or* PROCEED) VIA (*designation*);
- b) CLEARED TO (*clearance limit*) VIA (*designation*);
- c) CLEARED (*or* PROCEED) VIA (*details of route to be followed*);

... when a pilot requests a visual approach

... to request if a pilot is able to accept a visual approach

... in case of successive visual approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight

- 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 APPROACH AT *(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;
- *l) REQUEST VISUAL APPROACH;
- m) CLEARED VISUAL APPROACH RUNWAY *(number)*;
- n) ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY *(number)*;
- o) CLEARED VISUAL APPROACH RUNWAY *(number)*, MAINTAIN OWN SEPARATION FROM PRECEDING *(aircraft type and wake turbulence category as appropriate)* [CAUTION WAKE TURBULENCE];
- p) REPORT *(significant point)*; [OUTBOUND, or INBOUND];
- q) REPORT COMMENCING PROCEDURE TURN;

1.3.3

HOLDING CLEARANCES

... visual

... published holding procedure over a facility or fix

*r) REQUEST VMC DESCENT;

s) MAINTAIN OWN SEPARATION;

t) MAINTAIN VMC;

u) ARE YOU FAMILIAR WITH *(name)* APPROACH PROCEDURE;

*v) REQUEST *(type of approach)* APPROACH [RUNWAY *(number)*];

*w) REQUEST *(MLS/RNAV plain-language designator)*;

x) CLEARED *(MLS/RNAV plain-language designator)*.

'*' denotes pilot transmission.

a) HOLD VISUAL [OVER] *(position)*, (or BETWEEN *(two prominent landmarks)*);

b) CLEARED (or PROCEED) TO *(significant point, name of facility or fix)* [MAINTAIN (or CLIMB or DESCEND TO) *(level)*] HOLD [*(direction)*] AS PUBLISHED EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT *(time)*;

*c) REQUEST HOLDING INSTRUCTIONS;

... when a detailed holding clearance is required

d) CLEARED (or PROCEED) TO (*significant point, name 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 (*distance*) AND (*distance*) DME [RIGHT (or LEFT) HAND PATTERN] EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT (*time*) (*additional instructions, if necessary*).

'*' denotes pilot transmission.

1.3.4

EXPECTED APPROACH TIME

a) NO DELAY EXPECTED;

b) EXPECTED APPROACH TIME (*time*);

c) REVISED EXPECTED APPROACH TIME (*time*);

d) DELAY NOT DETERMINED (*reasons*).

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 MEANS

- a) ACKNOWLEDGE BY MOVING AILERONS (or RUDDER);
- b) ACKNOWLEDGE BY ROCKING WINGS;
- c) ACKNOWLEDGE BY FLASHING LANDING LIGHTS.

1.4.3 STARTING PROCEDURES

... to request permission to start engines

- *a) [*aircraft location*] REQUEST START-UP;
- *b) [*aircraft location*] REQUEST START-UP, INFORMATION (*ATIS identification*);

... ATC replies

- c) START-UP APPROVED;
- d) START-UP AT (*time*);
- e) EXPECT START-UP AT (*time*);
- f) START-UP AT OWN DISCRETION;
- g) EXPECT DEPARTURE (*time*) START-UP AT OWN DISCRETION.

*' denotes pilot transmission.

1.4.4 PUSHBACK PROCEDURES

... aircraft/ATC

- *a) [*aircraft location*] REQUEST PUSHBACK;
- b) PUSHBACK APPROVED;
- c) STAND BY;
- d) PUSHBACK AT OWN DISCRETION;

		<p>e) EXPECT (number) MINUTES DELAY DUE (reason).</p> <p>'*' denotes pilot transmission.</p>
<p>1.4.5</p>	<p>TOWING PROCEDURES</p> <p>... ATC response</p>	<p>†a) REQUEST TOW [company name] (aircraft type) FROM (location) TO (location);</p> <p>b) TOW APPROVED VIA (specific routing to be followed);</p> <p>c) HOLD POSITION;</p> <p>d) STAND BY.</p> <p>'†' denotes transmission from aircraft/tow vehicle combination.</p>
<p>1.4.6</p>	<p>TO REQUEST TIME CHECK AND/OR AERODROME DATA FOR DEPARTURE</p> <p>... when no ATIS broadcast is available</p>	<p>*a) REQUEST TIME CHECK;</p> <p>b) TIME (time);</p> <p>*c) REQUEST DEPARTURE INFORMATION;</p> <p>d) RUNWAY (number), WIND (direction and speed) (units) QNH (or QFE) (number) [(units)] TEMPERATURE [MINUS] (number), [VISIBILITY (distance) (units) (or RUNWAY VISUAL RANGE (or RVR) (distance) (units))] [TIME (time)].</p> <p>Note. If multiple visibility and RVR observations are available, those that represent the roll-out/stop end zone should be used for take-off.</p> <p>'*' denotes pilot transmission.</p>
<p>1.4.7</p>	<p>TAXI PROCEDURES</p> <p>... for departure</p>	<p>*a) [aircraft type] [wake turbulence category if 'heavy'] [aircraft location] REQUEST TAXI [intentions];</p>

... where detailed taxi instructions are required

... where aerodrome information is not available from an alternative source such as ATIS

... for helicopter operations

- *b) [aircraft type] [wake turbulence category if 'heavy'] [aircraft location] (flight rules) TO (aerodrome of destination) REQUEST TAXI [intentions];
- c) TAXI TO HOLDING POINT [number] [RUNWAY (number)] [HOLD SHORT OF RUNWAY (number) (or CROSS RUNWAY (number))] [TIME (time)];
- *d) [aircraft type] [wake turbulence category if 'heavy'] REQUEST DETAILED TAXI INSTRUCTIONS;
- e) TAXI TO HOLDING POINT [number] [RUNWAY (number)] VIA (specific route to be followed) [TIME (time)] [HOLD SHORT OF RUNWAY (number) (or CROSS RUNWAY (number))];
- f) TAXI TO HOLDING POINT [number] (followed by aerodrome information as applicable) [TIME (time)];
- g) TAKE (or TURN) FIRST (or SECOND) LEFT (or RIGHT);
- h) TAXI VIA (identification of taxiway);
- i) TAXI VIA RUNWAY (number);
- j) TAXI TO TERMINAL (or other location, e.g. GENERAL AVIATION AREA) [STAND (number)];
- *k) REQUEST AIR-TAXIING FROM (or VIA) TO (location or routing as appropriate);
- l) AIR-TAXI TO (or VIA) (location or routing as appropriate) [CAUTION (dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)];

... after landing

m) AIR TAXI VIA (*direct, as requested, or specified route*) TO (*location, heliport, operating or movement area, active or inactive runway*). AVOID (*aircraft or vehicles or personnel*);

*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 (*traffic*);

*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*];

1.4.8

HOLDING

... to hold not closer to a runway than specified

*dd) SLOWING DOWN.

'*' denotes pilot transmission.

‡a) HOLD (*direction*) OF (*position, runway number, etc.*);

‡b) HOLD POSITION;

‡c) HOLD (*distance*) FROM (*position*);

‡d) HOLD SHORT OF (*position*);

*e) HOLDING;

*f) HOLDING SHORT.

'‡' requires specific acknowledgement from the pilot.

'*' denotes pilot transmission. The procedure words 'ROGER' and 'WILCO' are insufficient acknowledgement of the instructions 'HOLD, HOLD POSITION and HOLD SHORT OF (*position*)'. In each case the acknowledgement is to be by the phraseology 'HOLDING' or 'HOLDING SHORT', as appropriate.

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 should always 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 HOLDING POINT [*number*] [RUNWAY (*number*)] VIA (*specific route to be followed*), [HOLD SHORT OF RUNWAY (*number*)] or [CROSS RUNWAY (*number*)];

<p>Note. The pilot will, when requested, report 'RUNWAY VACATED' when the entire aircraft is beyond the relevant runway-holding position.</p>	<p>*e) RUNWAY VACATED. †* denotes pilot transmission.</p>
<p>1.4.10 PREPARATION FOR TAKE-OFF</p> <p>... clearance to enter runway and await take-off clearance</p> <p>... conditional clearances</p> <p>... acknowledgement of a conditional clearance</p> <p>... confirmation or otherwise of the readback of conditional clearance</p> <p>...request for departure from an intersection take-off position</p> <p>...approval of requested departure from an intersection take-off position</p>	<p>a) UNABLE TO ISSUE (<i>designator</i>) DEPARTURE (<i>reasons</i>);</p> <p>b) REPORT WHEN READY [FOR DEPARTURE];</p> <p>c) ARE YOU READY [FOR DEPARTURE]?;</p> <p>d) ARE YOU READY FOR IMMEDIATE DEPARTURE?;</p> <p>*e) READY;</p> <p>f) LINE UP [AND WAIT];</p> <p>†g) LINE UP RUNWAY (<i>number</i>);</p> <p>h) LINE UP. BE READY FOR IMMEDIATE DEPARTURE;</p> <p>‡i) (<i>condition</i>) LINE UP (<i>brief reiteration of the condition</i>);</p> <p>*j) (<i>condition</i>) LINING UP (<i>brief reiteration of the condition</i>);</p> <p>k) [THAT IS] CORRECT (<i>or</i> NEGATIVE) [I SAY AGAIN]. (<i>as appropriate</i>).</p> <p>*l) REQUEST DEPARTURE FROM RUNWAY (<i>number</i>), INTERSECTION (<i>designation or name of intersection</i>)</p> <p>m) APPROVED, TAXI TO HOLDING POINT RUNWAY (<i>number</i>), INTERSECTION (<i>designation or name of intersection</i>)</p>

...denial of requested departure from an intersection take-off position	n) NEGATIVE, TAXI TO HOLDING POINT RUNWAY (<i>number</i>), INTERSECTION (<i>designation or name of intersection</i>)
...ATC-initiated intersection take-off	o) ADVISE ABLE TO DEPART FROM RUNWAY (<i>number</i>), INTERSECTION (<i>designation or name of intersection</i>)
...advising take-off run available from an intersection take-off position	p) TORA RUNWAY (<i>number</i>), FROM INTERSECTION (<i>designation or name of intersection</i>), (<i>distance</i>) METRES
...issuing multiple line-up instruction	q) LINE UP AND WAIT RUNWAY (<i>number</i>), INTERSECTION (<i>name of intersection</i>), (<i>essential local traffic information</i>)
...request for a visual departure	*r) REQUEST VISUAL DEPARTURE [DIRECT] TO/UNTIL (<i>navaid, waypoint, altitude</i>)
...ATS initiated visual departure	s) ADVISE ABLE TO ACCEPT VISUAL DEPARTURE [DIRECT] TO/UNTIL (<i>navaid, waypoint/altitude</i>)
...clearance for visual departure	t) VISUAL DEPARTURE RUNWAY (<i>number</i>) APPROVED, TURN LEFT/RIGHT [DIRECT] TO (<i>navaid, heading, waypoint</i>) [MAINTAIN VISUAL REFERENCE UNTIL (<i>altitude</i>)]
...read-back of visual departure clearance	*u) VISUAL DEPARTURE TO/UNTIL (<i>navaid, waypoint/altitude</i>)
	'*' 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).
	<i>Note. 'TORA' is pronounced 'TOR-AH'.</i>
1.4.11 TAKE-OFF CLEARANCE	a) RUNWAY (<i>number</i>) CLEARED FOR TAKE-OFF [REPORT AIRBORNE];

<p>... when reduced runway separation is used</p>	<p>b) <i>(traffic information)</i> RUNWAY <i>(number)</i> CLEARED FOR TAKE-OFF;</p>
<p>... when take-off clearance has not been complied with</p>	<p>c) TAKE OFF IMMEDIATELY OR VACATE RUNWAY [<i>(instructions)</i>];</p>
<p>... to cancel a take-off clearance</p>	<p>d) TAKE OFF IMMEDIATELY OR HOLD SHORT OF RUNWAY;</p>
<p>... to stop a take-off after an aircraft has commenced take-off roll</p>	<p>e) HOLD POSITION, CANCEL TAKE-OFF I SAY AGAIN CANCEL TAKE-OFF <i>(reasons)</i>;</p>
<p>... for helicopter operations</p>	<p>*f) HOLDING;</p>
<p>1.4.12 TURN OR CLIMB INSTRUCTIONS AFTER TAKE-OFF</p>	<p>g) STOP IMMEDIATELY [<i>(repeat aircraft call sign)</i> STOP IMMEDIATELY];</p>
<p>... to request airborne time</p>	<p>*h) STOPPING;</p>
<p>1.4.12 TURN OR CLIMB INSTRUCTIONS AFTER TAKE-OFF</p>	<p>i) CLEARED FOR TAKE-OFF [FROM <i>(location)</i>] [<i>(present position, taxiway, final approach and take-off area, runway and number)</i>];</p>
<p>... to request airborne time</p>	<p>*j) REQUEST DEPARTURE INSTRUCTIONS;</p>
<p>... to request airborne time</p>	<p>k) AFTER DEPARTURE TURN RIGHT <i>(or LEFT, or CLIMB)</i> <i>(instructions as appropriate)</i>.</p>
<p>... to request airborne time</p>	<p>*' denotes pilot transmission. HOLDING and STOPPING are the procedural responses to e) and g) respectively.</p>
<p>1.4.12 TURN OR CLIMB INSTRUCTIONS AFTER TAKE-OFF</p>	<p>*a) REQUEST RIGHT <i>(or LEFT)</i> TURN;</p>
<p>... to request airborne time</p>	<p>b) RIGHT <i>(or LEFT)</i> TURN APPROVED;</p>
<p>... to request airborne time</p>	<p>c) WILL ADVISE LATER FOR RIGHT <i>(or LEFT)</i> TURN;</p>
<p>... to request airborne time</p>	<p>d) REPORT AIRBORNE;</p>

... heading to be followed	<p>e) AIRBORNE (<i>time</i>);</p> <p>f) AFTER PASSING (<i>level</i>) (<i>instructions</i>);</p> <p>g) CONTINUE RUNWAY HEADING (<i>instructions</i>);</p> <p>h) TRACK EXTENDED CENTRE LINE (<i>instructions</i>);</p> <p>i) CLIMB STRAIGHT AHEAD (<i>instructions</i>).</p>
... when a specific track is to be followed	<p>'*' denotes pilot transmission.</p>
1.4.13 ENTERING AN AERODROME TRAFFIC CIRCUIT	<p>*a) [<i>aircraft type</i>] (<i>position</i>) (<i>level</i>) FOR LANDING;</p> <p>b) JOIN [<i>(direction of circuit)</i>] (<i>position in circuit</i>) (<i>runway number</i>) [SURFACE] WIND (<i>direction and speed</i>) (<i>units</i>) [TEMPERATURE [MINUS] (<i>number</i>)] QNH (or QFE) (<i>number</i>) [(<i>units</i>)] [TRAFFIC (<i>detail</i>)];</p> <p>c) MAKE STRAIGHT-IN APPROACH, RUNWAY (<i>number</i>) [SURFACE] WIND (<i>direction and speed</i>) (<i>units</i>) [TEMPERATURE [MINUS] (<i>number</i>)] QNH (or QFE) (<i>number</i>) [(<i>units</i>)] [TRAFFIC (<i>detail</i>)];</p> <p>*d) (<i>aircraft type</i>) (<i>position</i>) (<i>level</i>) INFORMATION (<i>ATIS identification</i>) FOR LANDING;</p> <p>e) JOIN (<i>position in circuit</i>) [RUNWAY (<i>number</i>)] QNH (or QFE) (<i>number</i>) [(<i>units</i>)] [TRAFFIC (<i>detail</i>)].</p> <p>'*' denotes pilot transmission.</p>
... when ATIS information is available	
1.4.14 IN THE CIRCUIT	<p>*a) (<i>position in circuit, e.g. DOWNWIND/FINAL</i>);</p> <p>b) NUMBER ... FOLLOW (<i>aircraft type and position</i>) [<i>additional instructions if required</i>].</p>

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 is 15 km (8 NM) from touchdown. In both cases, a report 'FINAL' is required at 7 km (4 NM) from touchdown.

'*' denotes pilot transmission.

- 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 GO AROUND].

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));

		<p>j) MAKE STRAIGHT-IN (or CIRCLING APPROACH, LEFT (or RIGHT) TURN TO (location, runway, taxiway, final approach 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 lines, unlighted obstructions, wake turbulence, etc.)]. CLEARED TO LAND.</p> <p>'*' denotes pilot transmission.</p>
<p>1.4.17</p>	<p>DELAYING AIRCRAFT</p>	<p>a) CIRCLE THE AERODROME;</p> <p>b) ORBIT (RIGHT, or LEFT) [FROM PRESENT POSITION];</p> <p>c) MAKE ANOTHER CIRCUIT.</p>
<p>1.4.18</p>	<p>MISSED APPROACH</p>	<p>a) GO AROUND;</p> <p>*b) GOING AROUND.</p> <p>'*' denotes pilot transmission.</p>
<p>1.4.19</p>	<p>INFORMATION TO AIRCRAFT</p> <p>... when pilot requested visual inspection of landing gear</p>	<p>a) LANDING GEAR APPEARS DOWN;</p> <p>b) RIGHT (or LEFT, or NOSE) WHEEL APPEARS UP (or DOWN);</p> <p>c) WHEELS APPEAR UP;</p> <p>d) RIGHT (or LEFT, or NOSE) WHEEL DOES NOT APPEAR UP (or DOWN);</p>

... wake turbulence	e) CAUTION WAKE TURBULENCE [FROM ARRIVING (or DEPARTING) (type of aircraft)] [additional information as required];
... jet blast on apron or taxiway	f) CAUTION JET BLAST;
... propeller-driven aircraft slipstream	g) CAUTION SLIPSTREAM.
1.4.20 RUNWAY VACATING AND COMMUNICATIONS AFTER LANDING	a) CONTACT GROUND (frequency);
	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 debris, taxiing light aircraft, personnel, etc.)];
	h) AIR-TAXI VIA (direct, as requested, or specified route) TO (location, heliport, operating or movement 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 CPDLC

... failure of a single CPDLC message

... to correct CPDLC clearances, instructions, information or requests

... to instruct all stations or a specific flight to avoid sending CPDLC requests for a limited period of time

... to resume normal use of CPDLC

- a) [ALL STATIONS] CPDLC FAILURE (*instructions*);
- b) 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*];
- 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

	<i>Circumstances</i>	<i>Phraseologies</i>
2.1.1	IDENTIFICATION OF AIRCRAFT	<p>a) REPORT HEADING [AND FLIGHT LEVEL (or ALTITUDE)];</p> <p>b) FOR IDENTIFICATION TURN LEFT (or RIGHT) HEADING (<i>three digits</i>);</p> <p>c) TRANSMIT FOR IDENTIFICATION AND REPORT HEADING;</p> <p>d) RADAR CONTACT [<i>position</i>];</p> <p>e) IDENTIFIED [<i>position</i>];</p> <p>f) NOT IDENTIFIED [<i>reason</i>], [RESUME (or CONTINUE) OWN NAVIGATION].</p>
2.1.2	POSITION INFORMATION	POSITION (<i>distance</i>) (<i>direction</i>) OF (<i>significant point</i>) (or OVER or ABEAM (<i>significant point</i>)).
2.1.3	VECTORING INSTRUCTIONS	<p>a) LEAVE (<i>significant point</i>) HEADING (<i>three digits</i>);</p> <p>b) CONTINUE HEADING (<i>three digits</i>);</p> <p>c) CONTINUE PRESENT HEADING;</p> <p>d) FLY HEADING (<i>three digits</i>);</p> <p>e) TURN LEFT (or RIGHT) HEADING (<i>three digits</i>) [<i>reason</i>];</p>

2.1.4	TERMINATION OF VECTORING	<p>f) TURN LEFT (or RIGHT) (number of degrees) DEGREES [reason];</p> <p>g) STOP TURN HEADING (three digits);</p> <p>h) FLY HEADING (three digits), WHEN ABLE PROCEED DIRECT (name) (significant point);</p> <p>i) HEADING IS GOOD.</p>
2.1.5	MANOEUVRES	<p>a) RESUME OWN NAVIGATION (position of aircraft) (specific instructions);</p> <p>b) RESUME OWN NAVIGATION [DIRECT] (significant point) [MAGNETIC TRACK (three digits) DISTANCE (number) KILOMETRES (or MILES)].</p> <p>a) MAKE A THREE SIXTY TURN LEFT (or RIGHT) [reason];</p> <p>b) ORBIT LEFT (or RIGHT) [reason];</p> <p>c) MAKE ALL TURNS RATE ONE (or RATE HALF, or (number) DEGREES PER SECOND) START AND STOP ALL TURNS ON THE COMMAND 'NOW';</p> <p>d) TURN LEFT (or RIGHT) NOW;</p> <p>e) STOP TURN NOW.</p>
2.1.6	SPEED CONTROL	<p>a) REPORT SPEED;</p> <p>*b) SPEED (number) KILOMETRES PER HOUR (or KNOTS);</p>

... (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 following phraseologies should be used:

- a) DUE TRAFFIC;
- b) FOR SPACING;
- c) FOR DELAY;
- d) FOR DOWNWIND (or BASE, or FINAL).

- c) MAINTAIN *(number)* KILOMETRES PER HOUR *(or KNOTS)* [OR GREATER *(or OR LESS)*] [UNTIL *(significant point)*];
- d) DO NOT EXCEED *(number)* KILOMETRES PER HOUR *(or KNOTS)*;
- e) MAINTAIN PRESENT SPEED;
- f) INCREASE *(or REDUCE)* SPEED TO *(number)* KILOMETRES PER HOUR *(or KNOTS)* [OR GREATER *(or OR LESS)*];
- g) INCREASE *(or REDUCE)* SPEED BY *(number)* KILOMETRES PER HOUR *(or KNOTS)*;
- h) RESUME NORMAL SPEED;
- i) REDUCE TO MINIMUM APPROACH SPEED;
- j) REDUCE TO MINIMUM CLEAN SPEED;
- k) NO [ATC] SPEED RESTRICTIONS.

'*' denotes pilot transmission.

Note. An arriving aircraft may be instructed to maintain its 'maximum speed', 'minimum clean speed', 'minimum speed', or a specified speed. '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 gear.

2.1.7

POSITION REPORTING

... to omit position reports

- a) OMIT POSITION REPORTS [UNTIL *(specify)*];
- b) NEXT REPORT AT *(significant point)*;

2.1.8

TRAFFIC INFORMATION AND AVOIDING ACTION

c) REPORTS REQUIRED ONLY AT *(significant point(s))*;

d) RESUME POSITION REPORTING.

a) TRAFFIC *(number)* O'CLOCK *(distance)* *(direction of flight)* *[any other pertinent information]*:

1) UNKNOWN;

2) SLOW MOVING;

3) FAST MOVING;

4) CLOSING;

5) OPPOSITE *(or SAME)* DIRECTION;

6) OVERTAKING;

7) CROSSING LEFT TO RIGHT *(or RIGHT TO LEFT)*;

8) *(aircraft type)*;

9) *(level)*;

10) [YOUR CLEARED LEVEL]

... (if known)

...when passing level information to aircraft climbing or descending, in form of vertical distance from the other traffic

11) CLIMBING *(or DESCENDING)*;

... to request avoiding action

*b) REQUEST VECTORS;

c) DO YOU WANT VECTORS?;

<p>... when passing unknown traffic</p>	<p>d) CLEAR OF TRAFFIC <i>[appropriate instructions]</i>;</p> <p>e) TURN LEFT (or RIGHT) IMMEDIATELY HEADING <i>(three digits)</i> TO AVOID [UNIDENTIFIED] TRAFFIC <i>(bearing by clock-reference and distance)</i>;</p> <p>f) TURN LEFT (or RIGHT) <i>(number of degrees)</i> DEGREES IMMEDIATELY TO AVOID [UNIDENTIFIED] TRAFFIC AT <i>(bearing by clock-reference and distance)</i>.</p>		
<p>... for avoiding action</p>	<p>*' denotes pilot transmission.</p>		
<p>2.1.9</p>	<p>COMMUNICATIONS AND LOSS OF COMMUNICATIONS</p>	<p>a) [IF] RADIO CONTACT LOST <i>(instructions)</i>;</p> <p>b) IF NO TRANSMISSIONS RECEIVED FOR <i>(number)</i> MINUTES (or SECONDS) <i>(instructions)</i>;</p> <p>c) REPLY NOT RECEIVED <i>(instructions)</i>;</p> <p>d) IF YOU READ <i>[manoeuvre instructions or SQUAWK (code or IDENT)]</i>;</p> <p>e) <i>(manoeuvre, SQUAWK or IDENT)</i> OBSERVED. POSITION <i>(position of aircraft)</i>. <i>[(instructions)]</i>.</p>	
<p>... if loss of communications suspected</p>	<p>2.1.10</p>	<p>TERMINATION OF RADAR AND/OR ADS-B SERVICE</p>	<p>a) RADAR SERVICE (or IDENTIFICATION) TERMINATED [DUE <i>(reason)</i>] <i>(instructions)</i>;</p> <p>b) WILL SHORTLY LOSE IDENTIFICATION <i>(appropriate instructions or information)</i>;</p> <p>c) IDENTIFICATION LOST <i>[reasons]</i> <i>(instructions)</i>.</p>
<p>2.1.11</p>	<p>RADAR AND/OR ADS-B EQUIPMENT DEGRADATION</p>	<p>a) SECONDARY RADAR OUT OF SERVICE <i>(appropriate information as necessary)</i>;</p>	

b) PRIMARY RADAR OUT OF SERVICE (*appropriate information as necessary*);

c) ADS-B OUT OF SERVICE (*appropriate information as necessary*).

2.2 Radar in approach control service

Circumstances	Phraseologies
2.2.1 VECTORIZING FOR APPROACH	<ul style="list-style-type: none"> a) VECTORIZING FOR <i>(type of pilot-interpreted aid)</i> APPROACH RUNWAY <i>(number)</i>; b) VECTORIZING FOR VISUAL APPROACH RUNWAY <i>(number)</i> REPORT FIELD <i>(or RUNWAY)</i> IN SIGHT; c) VECTORIZING FOR <i>(positioning in the circuit)</i>; d) VECTORIZING FOR SURVEILLANCE RADAR APPROACH RUNWAY <i>(number)</i>; e) VECTORIZING FOR PRECISION APPROACH RUNWAY <i>(number)</i>; f) <i>(type)</i> APPROACH NOT AVAILABLE DUE <i>(reason)</i> <i>(alternative instructions)</i>.
2.2.2 VECTORIZING FOR ILS AND OTHER PILOT-INTERPRETED AIDS	<ul style="list-style-type: none"> a) POSITION <i>(number)</i> KILOMETRES <i>(or MILES)</i> from <i>(fix)</i>. TURN LEFT <i>(or RIGHT)</i> HEADING <i>(three digits)</i>; b) YOU WILL INTERCEPT <i>(radio aid or track)</i> <i>(distance)</i> FROM <i>(significant point or TOUCHDOWN)</i>; *c) REQUEST <i>(distance)</i> FINAL; d) CLEARED FOR <i>(type of approach)</i> APPROACH RUNWAY <i>(number)</i>; e) REPORT ESTABLISHED ON [ILS] LOCALISER <i>(or ON GBAS/SBAS/MLS APPROACH COURSE)</i>;
... when a pilot wishes to be positioned at a specific distance from touchdown	
... instructions and information	

2.2.3

MANOEUVRE DURING
INDEPENDENT AND DEPENDENT
PARALLEL APPROACHES

- 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 (localiser course or radio aid) (reason);
- i) THIS TURN WILL TAKE YOU THROUGH (localiser course or radio aid) (reason);
- j) TAKING YOU THROUGH (localiser course or radio aid) (reason);
- k) MAINTAIN (altitude) UNTIL GLIDE PATH INTERCEPTION;
- l) REPORT ESTABLISHED ON GLIDE PATH;
- m) INTERCEPT (localiser course or radio aid) [REPORT ESTABLISHED].

'*' denotes pilot transmission.

- a) CLEARED FOR (type of approach) APPROACH RUNWAY (number) LEFT (or RIGHT);
- b) YOU HAVE CROSSED THE LOCALISER (or GBAS/SBAS/MLS FINAL APPROACH COURSE). TURN LEFT (or RIGHT) IMMEDIATELY AND RETURN TO THE LOCALISER (or GBAS/SBAS/MLS FINAL APPROACH COURSE);
- c) ILS (or MLS) RUNWAY (number) LEFT (or RIGHT) LOCALISER (or MLS) FREQUENCY IS (frequency);

... for avoidance action when an aircraft is observed penetrating the NTZ	d) TURN LEFT (or RIGHT) (number) DEGREES (or HEADING) (three digits) IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH], CLIMB TO (altitude);
... for avoidance action below 120 m (400 ft) above the runway threshold elevation where parallel approach obstacle assessment surfaces (PAOAS) criteria are being applied	e) CLIMB TO (altitude) IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH] (further instructions).
2.2.4 SURVEILLANCE RADAR APPROACH	
2.2.4.1 PROVISION OF SERVICE	<p>a) THIS WILL BE A SURVEILLANCE RADAR APPROACH RUNWAY (number) TERMINATING AT (distance) FROM TOUCHDOWN, OBSTACLE CLEARANCE ALTITUDE (or HEIGHT) (number) METRES (or FEET) CHECK YOUR MINIMA [IN CASE OF GO AROUND (instructions)];</p> <p>b) APPROACH INSTRUCTIONS WILL BE TERMINATED AT (distance) FROM TOUCHDOWN.</p>
2.2.4.2 ELEVATION	<p>a) COMMENCE DESCENT NOW [TO MAINTAIN A (number) DEGREE GLIDE PATH];</p> <p>b) (distance) FROM TOUCHDOWN ALTITUDE (or HEIGHT) SHOULD BE (numbers and units).</p>
2.2.4.3 POSITION	(distance) FROM TOUCHDOWN.
2.2.4.4 CHECKS	<p>a) CHECK GEAR DOWN [AND LOCKED];</p> <p>b) OVER THRESHOLD.</p>
2.2.4.5 COMPLETION OF APPROACH	<p>a) REPORT VISUAL;</p> <p>b) REPORT RUNWAY [LIGHTS] IN SIGHT;</p>

		c) APPROACH COMPLETED [CONTACT (<i>unit</i>)].
2.2.5	PAR APPROACH	
2.2.5.1	PROVISION OF SERVICE	<p>a) THIS WILL BE A PRECISION RADAR APPROACH RUNWAY (<i>number</i>);</p> <p>b) PRECISION APPROACH NOT AVAILABLE DUE (<i>reason</i>) (<i>alternative instructions</i>);</p> <p>c) IN CASE OF GO AROUND (<i>instructions</i>).</p>
2.2.5.2	COMMUNICATIONS	<p>a) DO NOT ACKNOWLEDGE FURTHER TRANSMISSIONS;</p> <p>b) REPLY NOT RECEIVED. WILL CONTINUE INSTRUCTIONS.</p>
2.2.5.3	AZIMUTH	<p>a) CLOSING [SLOWLY (<i>or</i> QUICKLY)] [FROM THE LEFT (<i>or</i> FROM THE RIGHT)];</p> <p>b) HEADING IS GOOD;</p> <p>c) ON TRACK;</p> <p>d) SLIGHTLY (<i>or</i> WELL, <i>or</i> GOING) LEFT (<i>or</i> RIGHT) OF TRACK;</p> <p>e) (<i>number</i>) METRES LEFT (<i>or</i> RIGHT) OF TRACK.</p>
2.2.5.4	ELEVATION	<p>a) APPROACHING GLIDE PATH;</p> <p>b) COMMENCE DESCENT NOW [AT (<i>number</i>) METRES PER SECOND OR (<i>number</i>) FEET PER MINUTE (<i>or</i> ESTABLISH A (<i>number</i>) DEGREE GLIDE PATH)];</p> <p>c) RATE OF DESCENT IS GOOD;</p> <p>d) ON GLIDE PATH;</p>

		<p>e) SLIGHTLY (or WELL, or GOING) ABOVE (or BELOW) GLIDE PATH;</p> <p>f) [STILL] (number) METRES (or FEET) TOO HIGH (or TOO LOW);</p> <p>g) ADJUST RATE OF DESCENT;</p> <p>h) COMING BACK [SLOWLY (or QUICKLY)] TO THE GLIDE PATH;</p> <p>i) RESUME NORMAL RATE OF DESCENT;</p> <p>j) ELEVATION ELEMENT UNSERVICEABLE (to be followed by appropriate instructions);</p> <p>k) (distance) FROM TOUCHDOWN. ALTITUDE (or HEIGHT) SHOULD BE (numbers and units).</p>
2.2.5.5	POSITION	<p>a) (distance) FROM TOUCHDOWN;</p> <p>b) OVER APPROACH LIGHTS;</p> <p>c) OVER THRESHOLD.</p>
2.2.5.6	CHECKS	<p>a) CHECK GEAR DOWN AND LOCKED;</p> <p>b) CHECK DECISION ALTITUDE (or HEIGHT).</p>
2.2.5.7	COMPLETION OF APPROACH	<p>a) REPORT VISUAL;</p> <p>b) REPORT RUNWAY [LIGHTS] IN SIGHT;</p> <p>c) APPROACH COMPLETED [CONTACT (unit)].</p>
2.2.5.8	MISSED APPROACH	<p>a) CONTINUE VISUALLY OR GO AROUND [missed approach instructions];</p>

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

	<i>Circumstances</i>	<i>Phraseologies</i>
2.3.1	TO REQUEST THE CAPABILITY OF THE SSR EQUIPMENT	<p>a) ADVISE TRANSPONDER CAPABILITY;</p> <p>*b) TRANSPONDER (<i>as shown in the flight plan</i>);</p> <p>*c) NEGATIVE TRANSPONDER.</p> <p>'*' denotes pilot transmission.</p>
2.3.2	TO REQUEST THE CAPABILITY OF THE ADS-B EQUIPMENT	<p>a) ADVISE ADS-B CAPABILITY;</p> <p>*b) ADS-B TRANSMITTER (<i>data link</i>);</p> <p>*c) ADS-B RECEIVER (<i>data link</i>);</p> <p>*d) NEGATIVE ADS-B.</p> <p>'*' denotes pilot transmission.</p>
2.3.3	TO INSTRUCT SETTING OF TRANSPONDER	<p>a) FOR DEPARTURE SQUAWK (<i>code</i>);</p> <p>b) SQUAWK (<i>code</i>).</p>
2.3.4	TO REQUEST THE PILOT TO RESELECT THE ASSIGNED MODE AND CODE	<p>a) RESET SQUAWK [(<i>mode</i>)] (<i>code</i>);</p> <p>*b) RESETTING (<i>mode</i>) (<i>code</i>).</p> <p>'*' denotes pilot transmission.</p>
2.3.5	TO REQUEST RESELECTION OF AIRCRAFT IDENTIFICATION	RE-ENTER [ADS-B or MODE S] AIRCRAFT IDENTIFICATION.
2.3.6	TO REQUEST THE PILOT TO CONFIRM THE CODE SELECTED ON THE AIRCRAFT'S TRANSPONDER	<p>a) CONFIRM SQUAWK (<i>code</i>);</p> <p>*b) SQUAWKING (<i>code</i>).</p>

		<p>‘*’ denotes pilot transmission.</p>
2.3.7	TO REQUEST THE OPERATION OF THE IDENT FEATURE	<p>a) SQUAWK [(code)] [AND] IDENT;</p> <p>b) SQUAWK LOW;</p> <p>c) SQUAWK NORMAL;</p> <p>d) TRANSMIT ADS-B IDENT.</p>
2.3.8	TO REQUEST TEMPORARY SUSPENSION OF TRANSPONDER OPERATION	SQUAWK STANDBY.
2.3.9	TO REQUEST EMERGENCY CODE	SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].
2.3.10	TO REQUEST TERMINATION OF TRANSPONDER AND/OR ADS-B TRANSMITTER OPERATION	<p>a) STOP SQUAWK [TRANSMIT ADS-B ONLY];</p> <p>b) STOP ADS-B TRANSMISSION [SQUAWK (code) ONLY].</p>
	<p><i>Note. Independent operations of Mode S transponder and ADS-B may not be possible in all aircraft (e.g. where ADS-B is solely provided by 1 090 MHz extended squitter emitted from the transponder). In such cases, aircraft may not be able to comply with ATC instructions related to ADS-B operation.</i></p>	
2.3.11	TO REQUEST TRANSMISSION OF PRESSURE-ALTITUDE	<p>a) SQUAWK CHARLIE;</p> <p>b) TRANSMIT ADS-B ALTITUDE.</p>
2.3.12	TO REQUEST PRESSURE SETTING CHECK AND CONFIRMATION OF LEVEL	CHECK ALTIMETER SETTING AND CONFIRM (<i>level</i>).
2.3.13	TO REQUEST TERMINATION OF PRESSURE-ALTITUDE TRANSMISSION BECAUSE OF FAULTY OPERATION	<p>a) STOP SQUAWK CHARLIE WRONG INDICATION;</p> <p>b) STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, <i>or reason</i>)].</p>

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

*Note: The controller will not
state on radiotelephony the
value of the 'Selected Level'
observed on the situation
display*

CHECK SELECTED LEVEL. CLEARED LEVEL IS *(level)*CHECK SELECTED LEVEL. CONFIRM CLIMBING *(or
DESCENDING) TO (or MAINTAINING) (level)**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, CHECK YOUR 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 CREW/COCKPIT)

a) [ARE YOU] READY TO START UP?;

5.1.2

PUSHBACK PROCEDURES

... (ground 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 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 between ground crew and pilots.

'*' denotes pilot transmission.

a) ARE YOU READY FOR PUSHBACK?;

*b) READY FOR PUSHBACK;

c) CONFIRM BRAKES RELEASED;

*d) BRAKES RELEASED;

e) COMMENCING PUSHBACK;

f) PUSHBACK COMPLETED;

*g) STOP PUSHBACK;

h) CONFIRM BRAKES SET;

*i) BRAKES SET;

*j) DISCONNECT;

k) DISCONNECTING STAND BY FOR VISUAL AT YOUR LEFT (*or* RIGHT).

Note.— This exchange is followed by a visual signal to the pilot to indicate that disconnect is completed and all is clear for taxiing.

'*' denotes pilot transmission.

6. AIR TRAFFIC FLOW MANAGEMENT (ATFM)

6.1

ATFM

Calculated take-off time (CTOT) delivery resulting from a slot allocation message (SAM).

SLOT (time)

Change to CTOT resulting from a slot 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 SLOT EXPIRED, 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 (time), REQUEST START-UP AT (time)