

***eRules***

**SERA**  
(IR + AMC/GM)



# **Easy Access Rules for Standardised European Rules of the Air (SERA)**

## EASA eRULES

### EASA eRULES: AVIATION RULES FOR THE 21ST CENTURY

Rules are the core of the EU civil aviation system. The aim of the EASA eRules project is to make them accessible to stakeholders in an efficient and reliable way.

EASA eRules is a comprehensive, single system for structuring, sharing, and storing of rules. It is the single, easy-access online database for all aviation safety rules applicable to persons and organisations subject to Basic Regulation (Regulation (EU) 2018/1139).

The Easy Access Rules (EAR) are the output of the eRules project. The EAR books are consolidated versions of those rules, combining EU regulations with the related EASA Executive Director (ED) decisions in an easy-to-read format with advanced navigation features through links and bookmarks. The EAR books are regularly updated, following the adoption of an official publication.

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The EASA eRules system is developed and implemented in close cooperation with the Member States and aviation industry to ensure that all its capabilities are relevant and effective.

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## LIST OF REVISIONS

| Published     | Reason for revision                                                                                                                                                                                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| December 2018 | First Easy Access Rules for SERA document powered by eRules, incorporating: <ul style="list-style-type: none"><li>— Regulation (EU) No 923/2012,</li><li>— Regulation (EU) 2016/1185,</li><li>— ED Decision 2013/013/R, and</li><li>— ED Decision 2016/023/R.</li></ul>                   |
| December 2020 | Revision from December 2020 to incorporate: <ul style="list-style-type: none"><li>— Regulation (EU) 2020/469,</li><li>— Regulation (EU) 2020/1177,</li><li>— ED Decision 2020/007/R, and</li><li>— ED Decision 2020/016/R.</li></ul>                                                      |
| November 2021 | Revision from November 2021 to incorporate: <ul style="list-style-type: none"><li>— Regulation (EU) 2021/666.</li></ul>                                                                                                                                                                   |
| March 2022    | Revision from March 2022: <ul style="list-style-type: none"><li>— to remove the special formatting from the rules applicable from 27 January 2021; and</li><li>— to incorporate ED Decision 2021/014/R.</li></ul>                                                                         |
| February 2023 | Revision from February 2023: <ul style="list-style-type: none"><li>— to remove the special formatting from the rules applicable from 1 December 2022 and 26 January 2023;</li><li>— to incorporate ED Decision 2022/020/R; and</li><li>— to incorporate ED Decision 2022/024/R.</li></ul> |
| December 2024 | Revision from December 2024 to incorporate: <ul style="list-style-type: none"><li>— Regulation (EU) 2023/1772;</li><li>— Regulation (EU) 2024/404;</li><li>— Regulation (EU) 2024/1111; and</li><li>— ED Decision 2024/007/R.</li></ul>                                                   |
| August 2025   | Revision from August 2025: <ul style="list-style-type: none"><li>— to remove the special formatting from the rules applicable from 1 May 2025 and delete their counterparts applicable until 30 April 2025; and</li><li>— to incorporate ED Decision 2025/012/R.</li></ul>                |

## NOTE FROM THE EDITOR

The content of this document is arranged as follows: the cover regulation (recitals and articles) of the implementing rule (IR) appear first, then the IR annex points, followed by the related acceptable means of compliance (AMC) and guidance material (GM).

All elements (i.e. articles, IRs, AMC, and GM) are colour-coded and can be identified according to the illustration below. The EU regulation or EASA Executive Director (ED) decision through which the article, IR, AMC, or GM was introduced or last amended is indicated below the article, IR, AMC, or GM title *in italics*.

|                                        |                              |
|----------------------------------------|------------------------------|
| <u><b>Cover regulation article</b></u> | <i>Commission regulation</i> |
| <b>Implementing rule annex</b>         | <i>Commission regulation</i> |
| <b>Acceptable means of compliance</b>  | <i>ED decision</i>           |
| <b>Guidance material</b>               | <i>ED decision</i>           |

This document will be updated regularly to incorporate further amendments.

The format of this document has been adjusted to make it user-friendly and for reference purposes. Any comments should be sent to [erules@easa.europa.eu](mailto:erules@easa.europa.eu).

## INCORPORATED AMENDMENTS

### IMPLEMENTING RULES (IRs) (COMMISSION REGULATIONS)

| Incorporated Commission Regulation          | Regulation amendment | Applicability date(s) <sup>1</sup>            |
|---------------------------------------------|----------------------|-----------------------------------------------|
| <a href="#">Regulation (EU) No 923/2012</a> | Initial issue        | 4/12/2012                                     |
| <a href="#">Regulation (EU) 2016/1185</a>   | Amendment 1          | 12/10/2017                                    |
| <a href="#">Regulation (EU) 2020/469</a>    | Amendment 2          | 27/1/2022<br>5/11/2020 (for SERA.12005(a)(9)) |
| <a href="#">Regulation (EU) 2020/1177</a>   | Amendment 3          | 12/8/2021 (for SERA.12005(a)(9))              |
| <a href="#">Regulation (EU) 2021/666</a>    | Amendment 4          | 26/1/2023                                     |
| <a href="#">Regulation (EU) 2023/1772</a>   | Amendment 5          | 5/10/2023                                     |
| <a href="#">Regulation (EU) 2024/404</a>    | Amendment 6          | 1/5/2025<br>1/5/2024 (for Appendix 6)         |
| <a href="#">Regulation (EU) 2024/1111</a>   | Amendment 7          | 1/5/2025                                      |

### AMC/GM TO IRs (ED DECISIONS)

| Incorporated ED Decision               | AMC/GM Issue No,<br>Amendment No | Applicability date(s)                                                                           |
|----------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------|
| <a href="#">ED Decision 2013/013/R</a> | Initial issue                    | 17/7/2013                                                                                       |
| <a href="#">ED Decision 2016/023/R</a> | Amendment 1                      | 15/10/2016                                                                                      |
| <a href="#">ED Decision 2020/007/R</a> | Amendment 2                      | 27/1/2022<br>3/7/2020 (for GM1 SERA.2005)<br>5/11/2020 (for point 1.1.11 of<br>AMC1 SERA 14001) |
| <a href="#">ED Decision 2020/016/R</a> | Amendment 3                      | 12/8/2021 (for point 1.1.11 of<br>AMC1 SERA.14001)                                              |
| <a href="#">ED Decision 2021/014/R</a> | Amendment 4                      | 1/12/2022                                                                                       |
| <a href="#">ED Decision 2022/020/R</a> | Amendment 5                      | 1/12/2022                                                                                       |
| <a href="#">ED Decision 2022/024/R</a> | Amendment 6                      | 26/1/2023                                                                                       |
| <a href="#">ED Decision 2024/007/R</a> | Amendment 7                      | 1/5/2025                                                                                        |
| <a href="#">ED Decision 2025/012/R</a> | Amendment 8                      | 9/7/2025                                                                                        |

*Note: To access the official versions, please click on the hyperlinks provided above.*

<sup>1</sup> This is the date of application (i.e. the date from which an act or a provision in an act produces its full legal effects) as defined in the relevant cover regulation article. However, some provisions of the regulations may be applicable at an earlier date (deferred applicability). In addition, there may be certain opt-outs (derogations from certain provisions) notified by the Member States.

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## COVER REGULATION

### COMMISSION IMPLEMENTING REGULATION (EU) No 923/2012

of 26 September 2012

laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010

*Regulation (EU) 923/2012*

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky<sup>1</sup> (the airspace Regulation), and in particular Article 4(a) and (b) thereof,

Having regard to Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency<sup>2</sup> (the EASA Basic Regulation), and in particular Articles 8 and 8b and Annex Vb thereto,

Whereas:

- (1) Pursuant to Regulation (EC) No 551/2004 and Regulation (EC) No 216/2008, the Commission is required to adopt implementing rules in order to adopt appropriate provisions on rules of the air based upon Standards and recommended practices of the International Civil Aviation Organisation (ICAO), and to harmonise the application of the ICAO airspace classification, with the aim to ensure the seamless provision of safe and efficient air traffic services within the single European sky.
- (2) Eurocontrol has been mandated in accordance with Article 8(1) of Regulation (EC) No 549/2004 of the European Parliament and the Council of 10 March 2004 laying down the framework for the creation of the single European sky<sup>3</sup> to assist the Commission in the development of implementing rules which lay down appropriate provisions on rules of the air based upon ICAO Standards and recommended practices, and harmonise the application of the ICAO airspace classification.
- (3) In accordance with Articles 1(3) and 13 of Regulation (EC) No 549/2004 and Article 2 of Regulation (EC) No 216/2008, the single European sky initiative should assist the Member States in fulfilling their obligations under the 1944 Chicago Convention on International Civil Aviation (hereafter the Chicago Convention) by providing for common interpretation and implementation.
- (4) The objective of Regulation (EC) No 551/2004 is to support the concept of a more integrated operating airspace within the context of the common transport policy, and to establish common procedures for design, planning and management while ensuring the efficient and safe performance of air traffic management. This objective is particularly relevant for the rapid implementation of functional airspace blocks in the single European sky.

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<sup>1</sup> OJ L 96 31.3.2004, p. 20

<sup>2</sup> OJ L 79 19.3.2008, p. 1

<sup>3</sup> OJ L 96, 31.3.2004, p. 1.

- (5) The outcome of the work undertaken by the joint group created by the Commission, Eurocontrol and ICAO, which charted the national differences filed by Member States relating to ICAO Standards dealing with rules of the air and related provisions for air navigation services, supports the need for standardisation of common rules and differences with respect to the single European sky.
- (6) In order to ensure safe, efficient and expeditious international air traffic and to support the establishment of functional airspace blocks, all participants in the single European sky should adhere to a common set of rules. Furthermore, a key enabler of safe cross-border operations is the creation of a transparent regulatory system, where the actors can be provided a legal certainty and predictability. To this end, standardised rules of the air and related operational provisions regarding services and procedures in air navigation should be established, and be supplemented, where appropriate, with guidance material and/or acceptable means of compliance.
- (7) To achieve those objectives, only commonly agreed European differences should be notified to ICAO by the Member States on areas which are covered by Union law. Those differences should be established and monitored through a permanent process.
- (8) Member States that have adopted additional provisions complementing an ICAO standard, should, if they are still considered necessary and provided such additional provisions do not constitute a difference under the Chicago Convention or against existing Union law, continue to apply such provisions until they are addressed by appropriate Union provisions.
- (9) The application of this Regulation should be without prejudice to the Member States' obligations and rights over the high seas, in accordance with Article 12 of the Chicago Convention, and in particular with Annex 2 to the Chicago Convention, as well as the obligations of Member States and the Union under the United Nations Convention on the Law of the Sea and the obligations of Member States under the Convention on the International Regulations for Preventing Collisions at Sea, 1972.
- (10) In accordance with Article 1(2) of the framework Regulation (EC) No 549/2004, the regulatory framework for the creation of the single European sky does not cover military operations and training.
- (11) The existing process for amending ICAO Standards and recommended practices within the framework of the Chicago Convention is not addressed by this Regulation.
- (12) The extension of the competence of EASA to include air traffic management safety requires consistency between the development of implementing rules under Regulations (EC) No 551/2004 and (EC) No 216/2008.
- (13) In order to ensure consistency between the transposition of provisions of Annex 2 to the Chicago Convention set out in this Regulation and the future provisions stemming from other annexes to the Chicago Convention, which will be included in the next stages of work as well as the implementation of future Union rules, the initial provisions should be revisited where necessary.
- (14) Where necessary, other Union legislation should be updated to refer to this Regulation,

HAS ADOPTED THIS REGULATION:

## **Article 1 Subject matter and scope**

Regulation (EU) 2023/1772

1. The objective of this Regulation is to establish the common rules of the air and operational provisions regarding services and procedures in air navigation that shall be applicable to general air traffic within the scope of [Regulation \(EC\) No 551/2004](#).
2. This Regulation shall apply in particular to airspace users and aircraft engaged in general air traffic:
  - (a) operating into, within or out of the Union;
  - (b) bearing the nationality and registration marks of a Member State of the Union, and operating in any airspace to the extent that they do not conflict with the rules published by the country having jurisdiction over the territory overflown.
3. This Regulation shall also apply to the competent authorities of the Member States, air navigation service providers, the Network Manager, aerodrome operators and ground personnel engaged in aircraft operations.
4. This Regulation shall not apply to model aircraft and toy aircraft. However, Member States shall ensure that national rules are established to ensure that model aircraft and toy aircraft are operated in such a manner as to minimise hazards related to civil aviation safety, to persons, property or other aircraft.

## **Article 2 Definitions**

Regulation (EU) 2024/1111

For the purpose of this Regulation the following definitions shall apply:

1. 'accuracy' means a degree of conformance between the estimated or measured value and the true value;
3. 'advisory airspace' means an airspace of defined dimensions, or designated route, within which air traffic advisory service is available;
4. 'advisory route' means a designated route along which air traffic advisory service is available;
5. 'aerobatic flight' means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed, not necessary for normal flight or for instruction for licenses or ratings other than aerobatic rating;
6. 'aerodrome' means a defined area (including any buildings, installations and equipment) on land or water or on a fixed, fixed off-shore or floating structure intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;
7. 'aerodrome control service' means air traffic control service for aerodrome traffic;
8. 'aerodrome control tower' means a unit established to provide air traffic control service to aerodrome traffic;
9. 'aerodrome traffic' means all traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome. An aircraft operating in the vicinity of an aerodrome includes but is not limited to aircraft entering or leaving an aerodrome traffic circuit;
10. 'aerodrome traffic circuit' means the specified path to be flown by aircraft operating in the vicinity of an aerodrome;

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11. 'aerodrome traffic zone' means an airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic;
  12. 'aerial work' means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.;
  13. 'Aeronautical Information Publication (AIP)' means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation;
  14. 'aeronautical mobile service' means a mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies;
  15. 'aeronautical station' means a land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea;
  16. 'aeroplane' means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;
  17. 'airborne collision avoidance system (ACAS)' means an aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders;
  18. 'aircraft' means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface;
  19. 'aircraft address' means a unique combination of 24 bits available for assignment to an aircraft for the purpose of air-ground communications, navigation and surveillance;
  - 19a. 'aircraft identification' means a group of letters, figures, or a combination of them, which is either identical, or the coded equivalent, to the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications;
  20. 'aircraft observation' means the evaluation of one or more meteorological elements made from an aircraft in flight;
  21. 'AIRMET information' means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and of the development of those phenomena in time and space, and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof;
  22. 'air-ground communication' means two-way communication between aircraft and stations or locations on the surface of the earth;
  23. 'air-ground control radio station' means an aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area;
  24. 'air-report' means a report from an aircraft in flight prepared in conformity with requirements for position, and operational and/or meteorological reporting;

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25. 'air-taxiing' means movement of a helicopter/vertical take-off and landing (VTOL) above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kts);
  26. 'air traffic' means all aircraft in flight or operating on the manoeuvring area of an aerodrome;
  27. 'air traffic advisory service' means a service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on instrument flight rules (IFR) flight plans;
  28. 'air traffic control (ATC) clearance' means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;
  29. 'air traffic control instruction' means directives issued by air traffic control for the purpose of requiring a pilot to take a specific action;
  30. 'air traffic control service' means a service provided for the purpose of:
    - (a) preventing collisions:
      - (1) between aircraft; and
      - (2) on the manoeuvring area between aircraft and obstructions; and
    - (b) expediting and maintaining an orderly flow of air traffic;
  31. 'air traffic control unit' means a generic term meaning variously, area control centre, approach control unit or aerodrome control tower;
  32. 'air traffic service (ATS)' means a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service);
  33. 'air traffic services (ATS) airspaces' mean airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified;
  34. 'air traffic services (ATS) reporting office (ARO)' means a unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure;
  - 34a. 'air traffic services (ATS) surveillance service' means a service provided directly by means of an ATS surveillance system;
  35. 'air traffic services (ATS) unit' means a generic term meaning, variously, air traffic control unit, flight information centre, aerodrome flight information service unit or air traffic services reporting office;
  36. 'airway' means a control area or portion thereof established in the form of a corridor;
  37. 'alerting service' means a service provided to notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required;
  38. 'alternate aerodrome' means an aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing, where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate aerodromes include the following:
    - (a) take-off alternate: an alternate aerodrome at which an aircraft would be able to land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure;

- (b) en-route alternate: an alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en route;
  - (c) destination alternate: an alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing;
39. 'altitude' means the vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL);
40. 'approach control service' means air traffic control service for arriving or departing controlled flights;
41. 'approach control unit' means a unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes;
42. 'apron' means a defined area, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance;
43. 'area control centre (ACC)' means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction;
44. 'area control service' means air traffic control service for controlled flights in control areas;
45. 'area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these;
46. 'ATS route' means a specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services;
47. 'automatic dependent surveillance — broadcast (ADS-B)' means a means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link;
48. 'automatic dependent surveillance — contract (ADS-C)' means a means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports;
- 48a. 'automatic dependent surveillance — contract (ADS-C) agreement' means a reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to, prior to using ADS-C in the provision of air traffic services);
49. 'automatic terminal information service (ATIS)' means the automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:
- (a) 'Data link-automatic terminal information service (D-ATIS)' means the provision of ATIS via data link;
  - (b) 'Voice-automatic terminal information service (Voice-ATIS)' means the provision of ATIS by means of continuous and repetitive voice broadcasts;
50. 'ceiling' means the height above the ground or water of the base of the lowest layer of cloud below 6 000 m (20 000 ft) covering more than half the sky;
51. 'change-over point' means the point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer

- its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft;
52. 'clearance limit' means the point to which an aircraft is granted an air traffic control clearance;
53. 'cloud of operational significance' means a cloud with the height of cloud base below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height;
54. 'code (SSR)' means the number assigned to a particular multiple pulse reply signal transmitted by a transponder in Mode A or Mode C;
55. 'competent authority' means the authority designated by the Member State as competent to ensure compliance with the requirements of this Regulation;
56. 'control area' means a controlled airspace extending upwards from a specified limit above the earth;
57. 'controlled aerodrome' means an aerodrome at which air traffic control service is provided to aerodrome traffic;
58. 'controlled airspace' means an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification;
59. 'controlled flight' means any flight which is subject to an air traffic control clearance;
60. 'controller-pilot data link communications (CPDLC)' mean a means of communication between controller and pilot, using data link for ATC communications;
61. 'control zone' means a controlled airspace extending upwards from the surface of the earth to a specified upper limit;
62. 'cruise climb' means an aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases;
63. 'cruising level' means a level maintained during a significant portion of a flight;
64. 'current flight plan (CPL)' means the flight plan, including changes, if any, brought about by subsequent clearances;
65. 'danger area' means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times;
66. 'data link communications' mean a form of communication intended for the exchange of messages via a data link;
67. 'datum' means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities;
68. 'downstream clearance' means a clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft;
69. 'estimated elapsed time' means the estimated time required to proceed from one significant point to another;
- 69a. 'estimated off-block date' means the estimated date on which the aircraft will commence movement associated with departure;
70. 'estimated off-block time' means the estimated time at which the aircraft will commence movement associated with departure;

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71. 'estimated time of arrival (ETA)' means for IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For visual flight rules (VFR) flights, the time at which it is estimated that the aircraft will arrive over the aerodrome;
  72. 'expected approach time' means the time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing. The actual time of leaving the holding fix will depend upon the approach clearance;
  73. 'filed flight plan (FPL)' means the flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes;
  74. 'flight crew member' means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;
  75. 'flight information centre' means a unit established to provide flight information service and alerting service;
  76. 'flight information region' means an airspace of defined dimensions within which flight information service and alerting service are provided;
  77. 'flight information service' means a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights;
  78. 'flight level (FL)' means a surface of constant atmospheric pressure which is related to a specific pressure datum, 1013,2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals;
  79. 'flight plan' means specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft;
  80. 'flight visibility' means the visibility forward from the cockpit of an aircraft in flight;
  81. 'forecast' means a statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace;
  82. 'ground visibility' means the visibility at an aerodrome, as reported by an accredited observer or by automatic systems;
  83. 'heading' means the direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid);
  84. 'height' means the vertical distance of a level, a point or an object considered as a point, measured from a specified datum;
  85. 'rotorcraft' means a power-driven, heavier-than-air aircraft that depends principally for its support in flight on the lift generated by up to two rotors;
  - 85a. 'helicopter' means a type of rotorcraft supported in flight chiefly by the reactions of the air on up to two power-driven rotors on substantially vertical axes;
  - 85b. 'vertical take-off and landing (VTOL)-capable aircraft (VCA)' means a power-driven, heavier-than-air aircraft, other than aeroplane or rotorcraft, capable of performing vertical take-off and landing by means of lift and thrust units used to provide lift during take-off and landing;
  86. 'high seas airspace' means airspace beyond land territory and territorial seas, as specified in the United Nations Convention on the Law of the Sea (Montego Bay, 1982);

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87. 'IFR' means the symbol used to designate the instrument flight rules;
88. 'IFR flight' means a flight conducted in accordance with the instrument flight rules;
89. 'IMC' means the symbol used to designate instrument meteorological conditions;
- 89a. 'instrument approach operations' means an approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:
- (a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
  - (b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance;
- 89b. 'Integrated Initial Flight Plan Processing System (IFPS)' means a system within the European Air Traffic Management network through which a centralised flight planning processing and distribution service, dealing with the reception, validation and distribution of flight plans, is provided within the airspace to which this Regulation applies;
90. 'instrument approach procedure (IAP)' means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:
- (a) non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A;
  - (b) approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A;
  - (c) precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations Type A or B;
91. 'instrument meteorological conditions (IMC)' mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions;
92. 'landing area' means that part of a movement area intended for the landing or take-off of aircraft;
93. 'level' means a generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level;
94. 'manoeuvring area' means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons;
- 94a. 'minimum fuel' means a term used to describe a situation in which an aircraft's fuel/energy supply has reached a state where the flight is committed to land at a specific aerodrome and no additional delay can be accepted;
95. 'mode (SSR)' means the conventional identifier related to specific functions of the interrogation signals transmitted by an SSR interrogator. There are four modes specified in ICAO Annex 10: A, C, S and intermode;

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- 95a. 'model aircraft' means an unmanned aircraft, other than toy aircraft, having an operating mass not exceeding limits prescribed by the competent authority, that is capable of sustained flight in the atmosphere and that is used exclusively for display or recreational activities;
- 95b. 'mountainous area' means an area of changing terrain profile where the changes of terrain elevation exceed 900 m (3 000 ft) within a distance of 18,5 km (10,0 NM);
96. 'movement area' means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s);
- 96a. 'Network Manager (NM)' means the body entrusted with the tasks necessary for the execution of the functions referred to in Article 6 of [Regulation \(EC\) No 551/2004](#);
97. 'night' means the hours between the end of evening civil twilight and the beginning of morning civil twilight. Civil twilight ends in the evening when the centre of the sun's disc is 6 degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon;
- 97a. 'NOTAM' means a notice distributed by means of telecommunication containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;
98. 'obstacle' means all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:
- (a) are located on an area intended for the surface movement of aircraft; or
  - (b) extend above a defined surface intended to protect aircraft in flight; or
  - (c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation;
99. 'operating site' means a site selected by the operator or pilot-in-command for landing, take-off and/or hoist operations;
- 99a. 'originator of a flight plan' means a person or organisation submitting flight plans and any associated update messages to the Integrated Initial Flight Plan Processing System (IFPS), including pilots, operators and agents acting on their behalf, and ATS units;
100. 'pilot-in-command' means the pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight;
- 100a. 'pre-flight phase' means the period from the first submission of a flight plan until the first air traffic control clearance is delivered;
101. 'pressure-altitude' means an atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere, as defined in Annex 8, Part 1 to the Chicago Convention;
102. 'problematic use of substances' means the use of one or more psychoactive substances by aviation personnel in a way that:
- (a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or
  - (b) causes or worsens an occupational, social, mental or physical problem or disorder;
103. 'prohibited area' means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited;

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104. 'psychoactive substance' means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas caffeine and tobacco are excluded;
  105. 'radar' means a radio detection device which provides information on range, azimuth and/or elevation of objects;
  106. 'radio mandatory zone (RMZ)' means an airspace of defined dimensions wherein the carriage and operation of radio equipment is mandatory;
  107. 'radio navigation service' means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids;
  108. 'radiotelephony' means a form of radiocommunication primarily intended for the exchange of information in the form of speech;
  109. 'repetitive flight plan' means a flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units;
  110. 'reporting point' means a specified geographical location in relation to which the position of an aircraft can be reported;
  111. 'restricted area' means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions;
  112. 'route segment' means a route or portion of route usually flown without an intermediate stop;
  113. 'runway' means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft;
  114. 'runway-holding position' means a designated position intended to protect a runway, an obstacle limitation surface, or an instrument landing system (ILS)/microwave landing system (MLS) critical/sensitive area at which taxiing aircraft and vehicles are to stop and hold, unless otherwise authorised by the aerodrome control tower;
  115. 'runway visual range (RVR)' means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;
  116. 'safety-sensitive personnel' means persons who might endanger aviation safety if they perform their duties and functions improperly, including crew members, aircraft maintenance personnel, aerodrome operations personnel, rescue, fire-fighting and maintenance personnel, personnel allowed unescorted access to the movement area and air traffic controllers;
  117. 'sailplane' means a heavier-than-air aircraft which is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine, including also hang gliders, paragliders and other comparable craft;
  118. 'secondary surveillance radar (SSR)' means a surveillance radar system which uses transmitters/receivers (interrogators) and transponders;
  119. 'SIGMET' means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere which may affect the safety of aircraft operations and of the development of those phenomena in time and space;
  120. 'signal area' means an area on an aerodrome used for the display of ground signals;

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121. 'significant point' means a specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes;
122. 'special VFR flight' means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC;
123. 'strayed aircraft' means an aircraft which has deviated significantly from its intended track or which reports that it is lost;
124. 'surveillance radar' means radar equipment used to determine the position of an aircraft in range and azimuth;
125. 'taxiing' means movement of an aircraft on the surface of an aerodrome or an operating site under its own power, excluding take-off and landing;
126. 'taxiway' means a defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:
- (a) Aircraft stand taxilane means a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.
  - (b) Apron taxiway means a portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.
  - (c) Rapid exit taxiway means a taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times;
127. 'territory' means the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of a State;
128. 'threshold' means the beginning of that portion of the runway usable for landing;
129. 'total estimated elapsed time' means:
- (a) for IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome;
  - (b) for VFR flights, the estimated time required from take-off to arrive over the destination aerodrome;
- 129a. 'toy aircraft' means an unmanned aircraft designed or intended for use, whether or not exclusively, in play by children under 14 years of age;
130. 'track' means the projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid);
131. 'traffic avoidance advice' means an advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision;
132. 'traffic information' means information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision;
133. 'transfer of control point' means a defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next;

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134. 'transition altitude' means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes;
135. 'transition level' means the lowest flight level available for use above the transition altitude;
136. 'transponder mandatory zone (TMZ)' means an airspace of defined dimensions wherein the carriage and operation of pressure-altitude reporting transponders is mandatory;
137. 'unidentified aircraft' means an aircraft which has been observed or reported to be operating in a given area but whose identity has not been established;
138. 'unmanned free balloon' means a non-power-driven, unmanned, lighter-than-air aircraft in free flight;
139. 'VFR' means the symbol used to designate the visual flight rules;
140. 'VFR flight' means a flight conducted in accordance with the visual flight rules;
141. 'visibility' means visibility for aeronautical purposes which is the greater of:
- (a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background;
  - (b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background;
142. 'visual meteorological conditions' mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima;
143. 'VMC' means the symbol used to designate visual meteorological conditions;
144. 'critical area' means an area of defined dimensions extending around the ground equipment of a precision instrument approach within which the presence of vehicles or aircraft will cause unacceptable disturbance of the guidance signals;
145. 'sensitive area' means an area extending beyond the critical area where the parking or movement, or both, of aircraft or vehicles will affect the guidance signal to the extent that it may be rendered as an unacceptable disturbance to aircraft using the signal;
146. 'U-space airspace' means a UAS geographical zone designated by Member States, where UAS operations are only allowed to take place with the support of U-space services;
147. 'U-space service' means a service relying on digital services and automation of functions designed to support safe, efficient and secure access to U-space airspace for a large number of UAS;
148. 'meteorological watch office (MWO)' means an office monitoring meteorological conditions affecting flight operations and providing information concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere which may affect the safety of aircraft operations within its specified area of responsibility;
149. 'runway condition report (RCR)' means a comprehensive standardised report relating to the conditions of the runway surface and their effect on the aeroplane landing and take-off performance, described by means of runway conditions code;
150. 'communicable disease' means an infectious disease caused by a contagious agent which is transmitted from person to person by direct contact with an infected individual or by indirect means such as exposure to a vector, animal, fomite, product or environment, or exchange of fluid, which is contaminated with the contagious agent;

151. 'public health' means all elements related to health, namely health status, including morbidity and disability, the determinants having an effect on that health status, health care needs, resources allocated to health care, the provision of, and universal access to, health care as well as health care expenditure and financing, and the causes of mortality.

## GM1 Article 2(12) Aerial work

*ED Decision 2020/007/R*

### GENERAL

Regulation (EU) 2017/373 and Regulation (EU) No 923/2012 define 'aerial work' in a way that is similar but not identical to the way Regulation (EU) No 965/2012 (the 'Air Operations Regulation') defines 'specialised operations'. Both definitions, 'aerial work' and 'specialised operations', are based upon the ICAO Annex 6 definitions and encompass a variety of activities that do not fall into the category of commercial air transport (CAT) operations.

In this context, it is understood that:

- (a) Unlike 'aerial work', 'specialised operations' do not include flights conducted for the purposes of search and rescue and firefighting as from the Air Operations Regulation's perspective those flights are outside the scope of the European Union Aviation Safety Agency (EASA) Basic Regulation.
- (b) Unlike 'aerial work', 'specialised operations' include (test) flights carried out by design or production organisations for the purpose of introduction or modification of aircraft types and (ferry) flights carrying no passengers or cargo where the aircraft is ferried for refurbishment, repair, maintenance checks, inspections, delivery, export or similar purposes.

## GM1 Article 2(25) Air-taxiing

*ED Decision 2013/013/R*

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

## GM1 Article 2(27) Air traffic advisory service

*ED Decision 2024/007/R*

### 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) Air traffic services units providing air traffic advisory service:
  - (1) *advise* the aircraft to depart at the time specified and to cruise at the levels indicated in the flight plan if it does not foresee any conflict with other known traffic;
  - (2) *suggest* to aircraft a course of action by which a potential hazard may be avoided, giving priority to an aircraft already in advisory airspace over other aircraft desiring to enter such advisory airspace; and
  - (3) *pass* to aircraft traffic information comprising the same information as that prescribed for area control service.

## GM1 Article 2(28) Air traffic control clearance

*ED Decision 2013/013/R*

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

## GM1 Article 2(34) Air traffic services reporting office

*ED Decision 2013/013/R*

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

## GM1 Article 2(38) Alternate aerodrome

*ED Decision 2013/013/R*

The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.

## GM1 Article 2(39) Altitude

*ED Decision 2013/013/R*

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

## GM1 Article 2(41) Approach control unit

*ED Decision 2013/013/R*

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

## GM1 Article 2(45) Area navigation (RNAV)

*ED Decision 2013/013/R*

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

## GM1 Article 2(46) ATS route

*ED Decision 2020/007/R*

### GENERAL

- (a) The term 'ATS route' is used to mean variously 'airway', 'advisory route', 'controlled route' or 'uncontrolled route' (i.e. VFR routes or corridors), 'arrival or departure route', etc.
- (b) An ATS route is defined by route specifications, which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and the minimum flight altitude.

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

*ED Decision 2013/013/R*

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

## GM1 Article 2(48a) ADS-C agreement

*ED Decision 2013/013/R*

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

## GM1 Article 2(51) Change-over point

*ED Decision 2013/013/R*

Change-over points are established to provide the optimum balance in respect of signal strength and quality between ground facilities at all levels to be used and to ensure a common source of azimuth guidance for all aircraft operating along the same portion of a route segment.

## GM1 Article 2(57) Controlled aerodrome

*ED Decision 2020/007/R*

### GENERAL

The airspace associated with a controlled aerodrome is designed in compliance with the requirements in Annex XI (Part-FPD) to [Regulation \(EU\) 2017/373](#).

## GM1 Article 2(58) Controlled airspace

*ED Decision 2013/013/R*

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

## GM1 Article 2(78) Flight level

*ED Decision 2013/013/R*

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

## GM1 Article 2(84) Height

*ED Decision 2013/013/R*

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

## GM1 Article 2(89a) Instrument approach operation

ED Decision 2016/023/R

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

ED Decision 2016/023/R

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

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

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

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

## GM1 Article 2(97) Night

ED Decision 2013/013/R

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

## GM1 Article 2(114) Runway-holding position

ED Decision 2013/013/R

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

## GM2 Article 2(114) Runway-holding position

ED Decision 2013/013/R

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

## GM1 Article 2(121) Significant point

ED Decision 2013/013/R

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

## GM1 to Article 2(129a) Toy aircraft

ED Decision 2016/023/R

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

## GM1 Article 2(138) Unmanned free balloons

ED Decision 2013/013/R

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

## GM1 Article 2(141) Visibility

ED Decision 2013/013/R

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

## Article 3 Compliance

Regulation (EU) 2024/404

The Member States shall ensure compliance with the common rules and provisions set out in the Annex to this Regulation without prejudice to the flexibility provisions contained in [Article 71 of Regulation \(EU\) 2018/1139](#) and the safeguards contained in [Article 13 of Regulation \(EC\) No 549/2004](#).

## Article 4 Exemptions for special operations

Regulation (EU) 2016/1185

1. The competent authorities may, either on their own initiative or based on applications by the entities concerned, grant exemptions to individual entities or to categories of entities from any of the requirements of this Regulation for the following activities of public interest and for the training necessary to carry out those activities safely:
  - (a) police and customs missions;
  - (b) traffic surveillance and pursuit missions;
  - (c) environmental control missions conducted by, or on behalf of public authorities;
  - (d) search and rescue;
  - (e) medical flights;
  - (f) evacuations;
  - (g) fire fighting;
  - (h) exemptions required to ensure the security of flights by heads of State, Ministers and comparable State functionaries.
2. The competent authority authorising these exemptions shall inform EASA of the nature of the exemptions at latest two months after the exemption has been approved.
3. This Article is without prejudice to Article 3 and may be applied in the cases where the activities listed under paragraph 1, cannot be carried out as operational air traffic or where they otherwise may not benefit from the flexibility provisions contained in this Regulation.

This Article shall also be without prejudice to helicopter operating minima contained in the specific approvals granted by the competent authority, pursuant to Annex V to Commission Regulation (EU) No 965/2012<sup>1</sup>.

## GM1 Article 4 Exemptions for special operations

ED Decision 2013/013/R

### GENERAL

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

<sup>1</sup> Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1).

- (d) As referred to in [Article 4\(3\)](#), and depending on national rules, some of these operations may be performed under the Operational Air Traffic (OAT) rules in certain Member States and, thus, are entirely outside the scope of this Regulation.

## GM2 Article 4 ‘Exemptions for special operations’

ED Decision 2016/023/R

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.

### Article 4a Very-high frequency (VHF) emergency frequency

Regulation (EU) 2020/469

1. Without prejudice to paragraph 2, Member States shall ensure that the VHF emergency frequency (121.500 MHz) is only used for emergency purposes specified in point [SERA.14095\(d\)](#) of the Annex.
2. Member States may exceptionally allow the use of the VHF emergency frequency referred to in paragraph 1 for other purposes than those specified in point [SERA.14095\(d\)](#) of the Annex, if those are limited to what is necessary to achieve their aim and in order to reduce the impact upon aircraft in distress or emergency and on the operations of air traffic services units.

### Article 5 Differences

Regulation (EU) 2024/404

[Deleted.]

### Article 6 Monitoring of amendments

Regulation (EU) 2024/404

Further to the entry into force of this Regulation, the Commission shall establish, with the support of Eurocontrol and EASA, a permanent process:

- (a) to ensure that any amendments adopted under the framework of the Chicago Convention which are of relevance with respect to the scope of this Regulation are monitored and analysed; and
- (b) where necessary, to develop proposals for amendments to the Annex to this Regulation.

### Article 7 Amendments to the Annex

Regulation (EU) No 923/2012

1. The Annex shall be amended in accordance with Article 5(3) of Regulation (EC) No 549/2004.
2. The amendments referred to in paragraph 1 may include, but shall not be limited to, amendments required to ensure consistency of legal provisions during the future extension of this Regulation to contain the relevant provisions of other ICAO annexes and documents than Annex 2 or changes stemming from updates of those ICAO annexes and documents themselves or from changes to any relevant Union Regulations.

## **Article 8 Transitional and additional measures**

*Regulation (EU) No 923/2012*

1. Member States that have adopted prior to the entry into force of this Regulation additional provisions complementing an ICAO Standard shall ensure that those are compliant with this Regulation.
2. For the purpose of this Article, such additional provisions complementing an ICAO Standard shall not constitute a difference under the Chicago Convention. The Member States shall publish such additional provisions as well as any matters left to the decision of a competent authority under this Regulation, through their aeronautical information publications. They shall also inform the Commission and EASA at the latest two months after entry into force of this Regulation, or when the additional provision has been adopted.

### **GM1 Article 8.2 Transitional and additional measures**

*ED Decision 2016/023/R*

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 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.

## **Article 9 Safety requirements**

*Regulation (EU) No 923/2012*

Further to the entry into force of this Regulation and without prejudice to Article 7, Member States shall, in order to maintain or enhance existing safety levels, ensure that, within the context of a safety management process addressing all aspects of the implementation of this Regulation, a safety assessment on the implementation plan, including hazard identification, risk assessment and mitigation, is conducted, preceding the actual changes to the previously applied procedures. Such mitigation may include the application of [Article 3](#).

## GM1 Article 9 Safety requirements

ED Decision 2024/007/R

### SAFETY ASSESSMENT

The safety assessment of the implementation plan should be maintained by the Member State after the issue of any amendment to this Regulation to identify any hazard, assess the risks and mitigate them before implementing the changes to the previously applied procedures.

### Article 10 Amendments to Regulations (EC) No 730/2006, (EC) No 1033/2006, (EC) No 1794/2006, (EC) No 1265/2007, (EU) No 255/2010 and Implementing Regulation (EU) No 1035/2011

Regulation (EU) No 923/2012

1. Regulation (EC) No 730/2006 is amended as follows:
  - (a) Article 2(3) and (4) shall be replaced by the following:
    - ‘3. “IFR” means the symbol used to designate instrument flight rules;
    4. “VFR” means the symbol used to designate visual flight rules.’
2. Regulation (EC) No 1033/2006 is amended as follows:
  - (a) Article 2(2), point 8, shall be replaced by the following:
    - ‘8. “IFR” means the symbol used to designate instrument flight rules.’;
  - (b) Article 3(1) shall be replaced by the following:
    - ‘1. The provisions specified in the Annex shall apply to the submission, acceptance and distribution of flight plans for every flight subject to this Regulation and to all changes to a key item in a flight plan in the pre-flight phase in accordance with this Regulation.’;
  - (c) the heading and first indent of the Annex shall be replaced by the following:  
‘PROVISIONS REFERRED TO IN ARTICLE 3(1)
    1. Section 4 of Commission Implementing Regulation (EU) No 923/2012<sup>1</sup>.’
3. Regulation (EC) No 1794/2006 is amended as follows:
  - (a) Article 2(c) and (d) shall be replaced by the following:
    - ‘(c) “IFR” means the symbol used to designate instrument flight rules;
    - (d) “VFR” means the symbol used to designate visual flight rules.’.
4. Regulation (EC) No 1265/2007 is amended as follows:
  - (a) Article 2(5) shall be replaced by the following:
    - ‘5. “flights operated under visual flight rules” (VFR flights) means any flights conducted in accordance with visual flight rules.’.

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<sup>1</sup> OJ L 281, 13.10.2012, p. 1..

5. Regulation (EU) No 255/2010 is amended as follows:
  - (a) Article 2(3) shall be replaced by the following:

‘3. “IFR” means the symbol used to designate instrument flight rules’.
6. Implementing Regulation (EU) No 1035/2011 is amended as follows:
  - (a) the reference in Annex II, point 4(a), to ‘Annex 2 on rules of the air in its 10th edition of July 2005’ shall be replaced by a reference to ‘Implementing Regulation (EU) No 923/2012’;
  - (b) the reference in Annex II, point 4(c), to ‘Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to No 47-B’ shall be amended by adding at the end of that sentence ‘and Implementing Regulation (EU) No 923/2012 as applicable.’;
  - (c) the reference in Annex III, point 2(b), to ‘Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to No 47-B’ shall be amended by adding at the end of that sentence ‘and Implementing Regulation (EU) No 923/2012 as applicable.’

### **Article 11 Entry into force**

*Regulation (EU) No 923/2012*

1. This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 4 December 2012.

2. By way of derogation from the second subparagraph of paragraph 1, Member States may decide not to apply the provisions of this Regulation until 4 December 2014.

When a Member State makes use of that possibility, it shall notify to the Commission and EASA in accordance with Article 12(1) of Regulation (EC) No 549/2004, the reasons for that derogation, its duration, as well as the envisaged and related timing of implementation of this Regulation.

*Regulation (EU) No 923/2012*

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 26 September 2012.

For the Commission  
The President  
José Manuel BARROSO

## **ANNEX: RULES OF THE AIR**

### **SECTION 1 FLIGHT OVER THE HIGH SEAS**

#### **SERA.1001 General**

*Regulation (EU) No 923/2012*

- (a) For flight over the high seas, the rules specified in Annex 2 to the Chicago Convention shall apply without exception. For the purposes of continuity and seamless operation of air traffic services in particular within Functional Airspace Blocks, the provisions of Annex 11 to the Chicago Convention may be applied in airspace over high seas in a manner that is consistent with how those provisions are applied over the territory of the member States. This shall be without prejudice to the operations of State Aircraft under Article 3 of the Chicago Convention. This shall also be without prejudice to the responsibilities of Member States to ensure that aircraft operations within the Flight Information Regions within which they are responsible for the provision of air traffic services in accordance with ICAO regional air navigation agreements are undertaken in a safe, expeditious and efficient manner.
- (b) For those parts of the high seas where a Member State has accepted, pursuant to an ICAO regional air navigation agreement, the responsibility of providing air traffic services, the Member State shall designate the ATS provider for providing those services.

## SECTION 2 APPLICABILITY AND COMPLIANCE

### SERA.2001 Subject

*Regulation (EU) 2023/1772*

Without prejudice to [SERA.1001](#), this Annex applies to airspace users and aircraft:

- (a) operating into, within or out of the Union;
- (b) bearing the nationality and registration marks of a Member State of the Union, and operating in any airspace to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown.

### SERA.2005 Compliance with the rules of the air

*Regulation (EU) No 923/2012*

The operation of an aircraft either in flight, on the movement area of an aerodrome or at an operating site shall be in compliance with the general rules, the applicable local provisions and, in addition, when in flight, either with:

- (a) the visual flight rules; or
- (b) the instrument flight rules.

### GM1 SERA.2005 Compliance with the rules of the air

*ED Decision 2020/007/R*

#### APPLICABLE LOCAL PROVISIONS

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

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

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

*ED Decision 2013/013/R*

#### GENERAL

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

### SERA.2010 Responsibilities

*Regulation (EU) 2024/1111*

- (a) Responsibility of the pilot-in-command

The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with this Regulation, except that the pilot-in-command may depart from these rules in circumstances that render such departure absolutely necessary in the interests of safety.

**(b) Pre-flight action**

Before beginning a flight, the pilot-in-command of an aircraft shall become familiar with all available information appropriate to the intended operation. Pre-flight action for flights away from the vicinity of an aerodrome, and for all IFR flights, shall include a careful study of available current weather reports and forecasts, taking into consideration fuel/energy requirements and an alternative course of action if the flight cannot be completed as planned.

**SERA.2015 Authority of pilot-in-command of an aircraft***Regulation (EU) No 923/2012*

The pilot-in-command of an aircraft shall have final authority as to the disposition of the aircraft while in command.

**SERA.2020 Problematic use of psychoactive substances***Regulation (EU) No 923/2012*

No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired. No such person shall engage in any kind of problematic use of substances.

## SECTION 3 GENERAL RULES AND COLLISION AVOIDANCE

### CHAPTER 1 PROTECTION OF PERSONS AND PROPERTY

#### SERA.3101 Negligent or reckless operation of aircraft

*Regulation (EU) No 923/2012*

An aircraft shall not be operated in a negligent or reckless manner so as to endanger life or property of others.

#### SERA.3105 Minimum heights

*Regulation (EU) No 923/2012*

Except when necessary for take-off or landing, or except by permission from the competent authority, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons, unless at such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface. The minimum heights for VFR flights shall be those specified in [SERA.5005\(f\)](#) and minimum levels for IFR flights shall be those specified in [SERA.5015\(b\)](#).

#### GM1 SERA.3105 Minimum heights

*ED Decision 2013/013/R*

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

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

#### GM2 SERA.3105 Minimum heights

*ED Decision 2013/013/R*

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

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

#### GM3 SERA.3105 Minimum heights

*ED Decision 2024/007/R*

##### TERMS 'TAKE-OFF' AND 'LANDING'

In the context of point [SERA.3105](#), the terms 'take-off' and 'landing' include operations such as touch-and-go, go-around or missed approach performed at an aerodrome or operating site for which the

necessary obstacle clearance assessment was conducted and approved by the relevant competent authority(ies).

## SERA.3110 Cruising levels

*Regulation (EU) No 923/2012*

The cruising levels at which a flight or a portion of a flight is to be conducted shall be in terms of:

- (a) flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude;
- (b) altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.

## SERA.3115 Dropping or spraying

*Regulation (EU) No 923/2012*

Dropping or spraying from an aircraft in flight shall only be conducted in accordance with:

- (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and
- (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.

## SERA.3120 Towing

*Regulation (EU) No 923/2012*

An aircraft or other object shall only be towed by an aircraft in accordance with:

- (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and
- (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.

## SERA.3125 Parachute descents

*Regulation (EU) No 923/2012*

Parachute descents, other than emergency descents, shall only be made in accordance with:

- (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and
- (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.

## SERA.3130 Aerobatic flight

*Regulation (EU) No 923/2012*

Aerobatic flights shall only be carried out in accordance with:

- (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and

- (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.

## SERA.3135 Formation flights

Regulation (EU) No 923/2012

Aircraft shall not be flown in formation except by pre-arrangement among the pilots-in-command of the aircraft taking part in the flight and, for formation flight in controlled airspace, in accordance with the conditions prescribed by the competent authority. These conditions shall include the following:

- (a) one of the pilots-in-command shall be designated as the flight leader;
- (b) the formation operates as a single aircraft with regard to navigation and position reporting;
- (c) separation between aircraft in the flight shall be the responsibility of the flight leader and the pilots-in-command of the other aircraft in the flight and shall include periods of transition when aircraft are manoeuvring to attain their own separation within the formation and during join-up and breakaway; and
- (d) for State aircraft a maximum lateral, longitudinal and vertical distance between each aircraft and the flight leader in accordance with the Chicago Convention. For other than State aircraft a distance not exceeding 1 km (0,5 nm) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each aircraft.

## SERA.3140 Unmanned free balloons

Regulation (EU) No 923/2012

An unmanned free balloon shall be operated in such a manner as to minimise hazards to persons, property or other aircraft and in accordance with the conditions specified in [Appendix 2](#).

## SERA.3145 Prohibited areas and restricted areas

Regulation (EU) No 923/2012

Aircraft shall not be flown in a prohibited area, or in a restricted area, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the Member State over whose territory the areas are established.

# CHAPTER 2 AVOIDANCE OF COLLISIONS

## SERA.3201 General

Regulation (EU) No 923/2012

Nothing in this Regulation shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.

## GM1 SERA.3201 General

ED Decision 2013/013/R

### VIGILANCE ON BOARD AN AIRCRAFT

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

## SERA.3205 Proximity

Regulation (EU) No 923/2012

An aircraft shall not be operated in such proximity to other aircraft as to create a collision hazard.

## SERA.3210 Right-of-way

Regulation (EU) 2020/469

- (a) The aircraft that has the right-of-way shall maintain its heading and speed.
- (b) An aircraft that is aware that the manoeuvrability of another aircraft is impaired shall give way to that aircraft.
- (c) An aircraft that is obliged by the following rules to keep out of the way of another shall avoid passing over, under or in front of the other, unless it passes well clear and takes into account the effect of aircraft wake turbulence.
  - (1) *Approaching head-on.* When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to the right.
  - (2) *Converging.* When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way, except as follows:
    - (i) power-driven heavier-than-air aircraft shall give way to airships, sailplanes and balloons;
    - (ii) airships shall give way to sailplanes and balloons;
    - (iii) sailplanes shall give way to balloons;
    - (iv) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.
  - (3) *Overtaking.* An overtaking aircraft is an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering its heading to the right, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear.
    - (i) *Sailplanes overtaking.* A sailplane overtaking another sailplane may alter its course to the right or to the left.

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- (4) *Landing.* An aircraft in flight, or operating on the ground or water, shall give way to aircraft landing or in the final stages of an approach to land.
- (i) When two or more heavier-than-air aircraft are approaching an aerodrome or an operating site for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in front of another which is in the final stages of an approach to land, or to overtake that aircraft. Nevertheless, power-driven heavier-than-air aircraft shall give way to sailplanes.
  - (ii) *Emergency landing.* An aircraft that is aware that another is compelled to land shall give way to that aircraft.
- (5) *Taking off.* An aircraft taxiing on the manoeuvring area of an aerodrome shall give way to aircraft taking off or about to take off.
- (d) Surface movement of aircraft, persons and vehicles.
- (1) In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome or equivalent part of an operating site, the following shall apply:
    - (i) when two aircraft are approaching head on, or approximately so, each shall stop or where practicable alter its course to the right so as to keep well clear;
    - (ii) when two aircraft are on a converging course, the one which has the other on its right shall give way;
    - (iii) an aircraft which is being overtaken by another aircraft shall have the right-of-way and the overtaking aircraft shall keep well clear of the other aircraft.
  - (2) At a controlled aerodrome an aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless an explicit clearance to enter or cross the runway has been issued by the aerodrome control tower.
  - (3) An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further in accordance with (2) when the lights are switched off.
  - (4) Movement of persons and vehicles at aerodromes:
    - (i) The movement of persons or vehicles, including towed aircraft, on the manoeuvring area of an aerodrome shall be controlled by the aerodrome control tower as necessary to avoid hazard to them or to aircraft landing, taxiing or taking off.
    - (ii) In conditions where low visibility procedures are in operation:
      - (A) persons and vehicles operating on the manoeuvring area of an aerodrome shall be restricted to the essential minimum and particular regard shall be given to the requirements to protect the critical and sensitive area(s) of radio navigation aids;
      - (B) subject to the provisions of point (iii), the method or methods to separate vehicles and taxiing aircraft shall be as specified by the air navigation service provider ('ANSP') and approved by the competent authority taking into account the aids available;
      - (C) when mixed ILS and MLS Category II or Category III precision instrument operations are taking place to the same runway continuously, the more restrictive ILS or MLS critical and sensitive areas shall be protected.

- (iii) Emergency vehicles proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic.
- (iv) Subject to the provisions in (iii), vehicles on the manoeuvring area shall be required to comply with the following rules:
  - (A) vehicles and vehicles towing aircraft shall give way to aircraft which are landing, taking-off or taxiing;
  - (B) vehicles shall give way to other vehicles towing aircraft;
  - (C) vehicles shall give way to other vehicles in accordance with air traffic services unit instructions;
  - (D) notwithstanding the provisions of (A), (B) and (C), vehicles and vehicles towing aircraft shall comply with instructions issued by the aerodrome control tower.

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

ED Decision 2020/007/R

#### UNSERVICEABLE STOP BARS — CONTINGENCY MEASURES

In situations where the lit stop bars cannot be turned off because of a technical problem, the following contingency measures may, inter alia, be considered:

- (a) physically disconnecting the respective lit stop bar from its power supply;
- (b) physically obscuring the lights of the lit stop bar;
- (c) using a different route, until the malfunctioning system has been repaired.

In case of implementation of (a) or (b), a marshaller or a follow-me vehicle may need to be provided to lead the aircraft to cross the stop bar. Moreover, in case of implementation of (b), care should be exercised to ensure correct implementation of the measure to avoid misunderstandings by the flight crew.

In any case, the measures taken should not undermine the principle that a lit stop bar must not be crossed.

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

ED Decision 2020/007/R

#### CONTROL OF PERSONS AND VEHICLES AT AERODROMES

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

### SERA.3212 Uncertainty as to the position on the manoeuvring area at aerodromes where air traffic services are provided

Regulation (EU) 2024/404

- a) Except as provided for in point (b), a pilot in doubt as to the position of the aircraft with respect to the manoeuvring area shall immediately:
  - (1) stop the aircraft; and

- (2) simultaneously notify the appropriate air traffic services unit of the circumstances (including the last known position).
- (b) When a pilot is in doubt as to the position of the aircraft with respect to the manoeuvring area, but recognises that the aircraft is on a runway, the pilot shall immediately:
  - (1) notify the appropriate air traffic services unit of the circumstances (including the last known position);
  - (2) if able to locate a nearby suitable taxiway, vacate the runway as expeditiously as possible, unless otherwise instructed by the air traffic services unit; and then,
  - (3) stop the aircraft.
- (c) A vehicle driver in doubt as to the position of the vehicle with respect to the manoeuvring area shall immediately:
  - (1) notify the appropriate air traffic services unit of the circumstances (including the last known position);
  - (2) simultaneously, unless otherwise instructed by the air traffic services unit, vacate the landing area, taxiway, or other part of the manoeuvring area, to a safe distance as expeditiously as possible; and then,
  - (3) stop the vehicle.

## **SERA.3215 Lights to be displayed by aircraft**

*Regulation (EU) 2016/1185*

- (a) Except as provided by (e), at night all aircraft in flight shall display:
  - (1) anti-collision lights intended to attract attention to the aircraft; and
  - (2) except for balloons, navigation lights intended to indicate the relative path of the aircraft to an observer. Other lights shall not be displayed if they are likely to be mistaken for these lights.
- (b) Except as provided by (e), at night:
  - (1) all aircraft moving on the movement area of an aerodrome shall display navigation lights intended to indicate the relative path of the aircraft to an observer and other lights shall not be displayed if they are likely to be mistaken for these lights;
  - (2) unless stationary and otherwise adequately illuminated, all aircraft on the movement area of an aerodrome shall display lights intended to indicate the extremities of their structure, as far as practicable;
  - (3) all aircraft taxiing or being towed on the movement area of an aerodrome shall display lights intended to attract attention to the aircraft; and
  - (4) all aircraft on the movement area of an aerodrome whose engines are running shall display lights which indicate that fact.
- (c) Except as provided by (e), all aircraft in flight and fitted with anti-collision lights to meet the requirement of (a)(1) shall display such lights also during day.
- (d) Except as provided by (e), all aircraft:
  - (1) taxiing or being towed on the movement area of an aerodrome and fitted with anti-collision lights, to meet the requirement of (b)(3); or

- (2) on the movement area of an aerodrome and fitted with lights to meet the requirement of (b)(4);  
shall display such lights also during day.
- (e) A pilot shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of (a), (b), (c) and (d) if they do or are likely to:
  - (1) adversely affect the satisfactory performance of duties; or
  - (2) subject an outside observer to harmful dazzle.

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

*ED Decision 2013/013/R*

### GENERAL

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

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

*ED Decision 2013/013/R*

### BALLOONS LIGHTS

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

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

*ED Decision 2013/013/R*

### BALLOONS LIGHTS

The technical specifications that such anti-collision lights specified in [AMC1 SERA 3215\(a\)\(1\)](#) need to meet can be found in the special conditions 'SC D-01 31HB\_GB External and Internal Lights for Free Balloon Night Flight Issue 2'<sup>1</sup>.

## SERA.3220 Simulated instrument flights

*Regulation (EU) No 923/2012*

An aircraft shall not be flown under simulated instrument flight conditions unless:

- (a) fully functioning dual controls are installed in the aircraft; and
- (b) an additional qualified pilot (in this rule called a safety pilot) occupies a control seat to act as safety pilot for the person who is flying under simulated instrument conditions. The safety pilot shall have adequate vision forward and to each side of the aircraft, or a competent observer in communication with the safety pilot shall occupy a position in the aircraft from which the observer's field of vision adequately supplements that of the safety pilot.

<sup>1</sup>This special condition can be found in [http://easa.europa.eu/certification/docs/special-condition/SC%20D-01%2031HB\\_GB%20External%20and%20Internal%20Lights%20for%20Free%20Balloon%20Night%20Flight%20Issue%202.pdf](http://easa.europa.eu/certification/docs/special-condition/SC%20D-01%2031HB_GB%20External%20and%20Internal%20Lights%20for%20Free%20Balloon%20Night%20Flight%20Issue%202.pdf)

## GM1 SERA.3220(b) Simulated instrument flights

ED Decision 2013/013/R

### SAFETY PILOT

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

## SERA.3225 Operation on and in the vicinity of an aerodrome

Regulation (EU) No 923/2012

An aircraft operated on or in the vicinity of an aerodrome shall:

- (a) observe other aerodrome traffic for the purpose of avoiding collision;
- (b) conform with or avoid the pattern of traffic formed by other aircraft in operation;
- (c) except for balloons, make all turns to the left, when approaching for a landing and after taking off, unless otherwise indicated, or instructed by ATC;
- (d) except for balloons, land and take off into the wind unless safety, the runway configuration, or air traffic considerations determine that a different direction is preferable.

## SERA.3230 Water operations

Regulation (EU) No 923/2012

- (a) When two aircraft or an aircraft and a vessel are approaching one another and there is a risk of collision, the aircraft shall proceed with careful regard to existing circumstances and conditions including the limitations of the respective craft.
  - (1) *Converging.* An aircraft which has another aircraft or a vessel on its right shall give way so as to keep well clear.
  - (2) *Approaching head-on.* An aircraft approaching another aircraft or a vessel head-on, or approximately so, shall alter its heading to the right to keep well clear.
  - (3) *Overtaking.* The aircraft or vessel which is being overtaken has the right of way, and the one overtaking shall alter its heading to keep well clear.
  - (4) *Landing and taking off.* Aircraft landing on or taking off from the water shall, in so far as practicable, keep well clear of all vessels and avoid impeding their navigation.
- (b) *Lights to be displayed by aircraft on the water.* At night or during any other period prescribed by the competent authority, all aircraft on the water shall display lights as required by the Convention on the International Regulations for Preventing Collisions at Sea, 1972, unless it is impractical for them to do so, in which case they shall display lights as closely similar as possible in characteristics and position to those required by the International Regulations.

## GM1 SERA.3230 Water operations

ED Decision 2013/013/R

### INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA

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

## GM1 SERA.3230(b) Water operations

ED Decision 2013/013/R

### LIGHTS TO BE DISPLAYED BY AIRCRAFT ON THE WATER

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

## CHAPTER 3 SIGNALS

### SERA.3301 General

Regulation (EU) No 923/2012

- (a) Upon observing or receiving any of the signals given in [Appendix 1](#), aircraft shall take such action as may be required by the interpretation of the signal given in that Appendix.
- (b) The signals of [Appendix 1](#) shall, when used, have the meaning indicated therein. They shall be used only for the purpose indicated and no other signals likely to be confused with them shall be used.
- (c) A signalman/marshaller shall be responsible for providing standard marshalling signals to aircraft in a clear and precise manner using the signals shown in [Appendix 1](#).
- (d) Only persons trained, qualified and approved as required by the relevant Union or national legislation shall carry out the functions of a signalman/marshaller.
- (e) The signalman/marshaller shall wear a distinctive fluorescent identification vest to allow the flight crew to identify that he or she is the person responsible for the marshalling operation.
- (f) Daylight-fluorescent wands, table-tennis bats or gloves shall be used for all signalling by all participating ground staff during daylight hours. Illuminated wands shall be used at night or in low visibility.

## CHAPTER 4 TIME

### SERA.3401 General

*Regulation (EU) No 923/2012*

- (a) Coordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.
- (b) A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary.
- (c) Wherever time is utilised in the application of data link communications, it shall be accurate to within 1 second of UTC.
- (d) Time in air traffic services
  - (1) Aerodrome control towers shall, prior to an aircraft taxiing for take-off, provide the pilot with the correct time, unless arrangements have been made for the pilot to obtain it from other sources. Air traffic services units shall, in addition, provide aircraft with the correct time on request. Time checks shall be given at least to the nearest minute.

### GM1 SERA.3401(d) General

*ED Decision 2013/013/R*

#### TIME IN AIR TRAFFIC SERVICES

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

## SECTION 4 FLIGHT PLANS

### SERA.4001 Submission of a flight plan

*Regulation (EU) 2023/1772*

- (a) Information relative to an intended flight or portion of a flight, to be provided to air traffic services units, shall be in the form of a flight plan. The term ‘flight plan’ is used to mean variously, full information on all items comprised in the flight plan description, covering the whole route of a flight, or limited information required, inter alia, when the purpose is to obtain a clearance for a minor portion of a flight such as to cross an airway, to take off from, or to land at a controlled aerodrome.
- (b) A flight plan shall be submitted prior to operating:
- (1) any flight or portion thereof to be provided with air traffic control service;
  - (2) any IFR flight within advisory airspace;
  - (3) any flight within or into areas, or along routes designated by the competent authority, to facilitate the provision of flight information, alerting and search and rescue services;
  - (4) any flight within or into areas or along routes designated by the competent authority, to facilitate coordination with appropriate military units or with air traffic services units in adjacent States in order to avoid the possible need for interception for the purpose of identification;
  - (5) any flight across international borders, unless otherwise prescribed by the States concerned;
  - (6) any flight planned to operate at night, if leaving the vicinity of an aerodrome.
- (c) A flight plan shall be:
- (1) submitted, before departure:
    - (i) to the Network Manager directly or via an air traffic services reporting office, in accordance with the operations manuals containing the necessary instructions and information developed and maintained by the Network Manager, if there is the intent for the flight to operate in accordance with IFR for a portion, or the entire route, of the flight within the single European sky airspace; or
    - (ii) to an air traffic services reporting office for other cases;
  - (2) transmitted, during flight, to the appropriate air traffic services unit or air–ground control radio station.
- (d) Unless a shorter period of time has been prescribed by the competent authority for domestic VFR flights, a flight plan for any flight planned to operate across international borders or to be provided with air traffic control service or air traffic advisory service shall be submitted as follows:
- (1) not more than 120 hours before the estimated off-block time;
  - (2) at least 3 hours before the estimated off-block time for flights that may be subject to air traffic flow management measures;
  - (3) at least 60 minutes before departure for all other flights not covered in point (2); or

- (4) if submitted during flight, at a time which ensures its receipt by the appropriate ATS unit, at least 10 minutes before the aircraft is estimated to reach:
  - (i) the intended point of entry into a control area or advisory area; or
  - (ii) the point of crossing an airway or advisory route.
- (e) For flights operated partially or entirely in accordance with IFR, entering the area of responsibility of an air traffic services unit, for which no flight plan has previously been received from the Network Manager, the unit concerned shall transmit to the Network Manager the aircraft identification, aircraft type, point of entry to its area of responsibility, time and flight level at that point, route and destination aerodrome of the flight.
- (f) Requirements laid down in points (c), (d), and (e) shall not apply in the Single European Sky airspace that is not part of the ICAO EUR region.

## GM1 SERA.4001 Submission of a flight plan

ED Decision 2013/013/R

### GENERAL

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

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

ED Decision 2016/023/R

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).

## SERA.4005 Contents of a flight plan

Regulation (EU) 2024/1111

- (a) A flight plan shall include all information considered relevant by the competent authority as regards the following:
  - (1) aircraft identification;
  - (2) flight rules and type of flight;
  - (3) number and type(s) of aircraft and wake turbulence category;
  - (4) aircraft equipment and capabilities;
  - (5) departure aerodrome or operating site;
  - (6) estimated off-block date and time;
  - (7) cruising speed(s);
  - (8) cruising level(s);
  - (9) route to be followed;

- (10) destination aerodrome or operating site and total estimated elapsed time;
  - (11) alternate aerodrome(s) or operating site(s);
  - (12) Fuel/energy endurance;
  - (13) total number of persons on board;
  - (14) emergency and survival equipment, including ballistic parachute recovery system;
  - (15) other information.
- (b) For flight plans submitted during flight, the departure aerodrome or operating site provided shall be the location from which supplementary information concerning the flight may be obtained, if required. Additionally, the information to be provided in lieu of the estimated off-block time shall be the time over the first point of the route to which the flight plan relates.

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

ED Decision 2013/013/R

### ABBREVIATED FLIGHT PLAN

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

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

ED Decision 2016/023/R

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

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

## GM1 SERA.4005(a)(14) Contents of a flight plan

ED Decision 2024/007/R

### BALLISTIC PARACHUTE RECOVERY SYSTEM

The information on ballistic parachute recovery systems may be included in the field for remarks under Item 19 of the ICAO model flight plan, as specified in Appendix 6 'COMPLETION OF A FLIGHT PLAN' to the Annex to Commission Implementing Regulation (EU) No 923/2012.

## SERA.4010 Completion of a flight plan

Regulation (EU) 2023/1772

- (a) A flight plan shall contain information, as applicable, on relevant items listed in point [SERA.4005\(a\)\(1\)](#) to (11) regarding the whole route or the portion thereof for which the flight plan is submitted.
- (b) Aircraft operators, flight plan originators and air traffic services units following the necessary instructions referred to in point [SERA.4001\(c\)\(1\)\(i\)](#) shall comply with the following:

- (1) the instructions for completion of the flight plan form contained in [Appendix 6](#);
- (2) any constraints identified in relevant Aeronautical Information Publications (AIPs).
- (c) Aircraft operators, or the agents that act on their behalf, which intend to operate within the single European sky airspace for a portion of or the entire route in accordance with IFR shall insert the appropriate indicator for the aircraft equipment available on board and its capabilities in accordance with Commission Implementing Regulation (EU) 2023/1770<sup>1</sup> in the relevant item in the flight plan as required in point [SERA.4005\(a\)\(4\)](#).
- (d) Operators of aircraft not equipped in accordance with Implementing Regulation (EU) 2023/1770 which intend to operate within the single European sky airspace shall insert the appropriate indicator for the aircraft equipment available on board and its capabilities, and any potential exemptions in the relevant items in the flight plan as per points [SERA.4005\(a\)\(4\)](#) and [SERA.4005\(a\)\(15\)](#) respectively. The flight plan shall, in addition, contain information, as applicable, on all other items when so prescribed by the competent authority or when otherwise deemed necessary by the person submitting the flight plan.

## SERA.4013 Acceptance of a flight plan

Regulation (EU) 2023/1772

- (a) The Network Manager, for the portion of the route operated in accordance with IFR, and the air traffic services reporting office shall take the necessary measures to ensure that when a flight plan is received, or when changes are made to it, it is:
  - (1) in compliance with the applicable format and data conventions;
  - (2) complete and, to the extent possible, accurate;
  - (3) if necessary, made acceptable to the air traffic services; and
  - (4) accepted, or the changes made to it are also accepted, and this is indicated to the originator of the flight plan.
- (b) ATC units shall provide the Network Manager with any necessary changes of a flight plan affecting items related to the route or flight level as listed in point [SERA.4005\(a\)\(1\)](#) to (10) that could affect the safe conduct of a flight, for flight plans and associated update messages previously received by them from the Network Manager. No other changes to, or cancellation of, a flight plan shall be made by an ATC unit in the pre-flight phase without coordination with the aircraft operator.
- (c) The Network Manager shall communicate to all affected ATS units the accepted flight plan and any accepted pre-flight-phase changes made to the items listed in point [SERA.4005\(a\)\(1\)](#) to (10) of the flight plan and associated update messages.
- (d) The Network Manager shall communicate to the aircraft operator any necessary pre-flight-phase changes made to the flight plan affecting items listed in point [SERA.4005\(a\)\(1\)](#) to (10) related to the route or flight level that could affect the safe conduct of a flight, for flight plans and associated update messages previously received.
- (e) The originator of a flight plan, when not being the aircraft operator or the pilot, shall ensure that the conditions of acceptance of a flight plan and any necessary changes to these conditions

<sup>1</sup> Commission Implementing Regulation (EU) 2023/1770 of 12 September 2023 laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012 (OJ L 228, XX.9.2023, p. 39)

as notified by the Network Manager for the portion of the flight operated in accordance with IFR, or by the air traffic services reporting offices, are made available to the aircraft operator or the pilot that has submitted the flight plan.

- (f) The aircraft operator shall ensure that the conditions of acceptance of a flight plan and any necessary changes to it as notified by the Network Manager or by the air traffic services reporting office to the originator of the flight plan are incorporated into the planned flight operation and communicated to the pilot.
- (g) The aircraft operator shall ensure prior to the operation of the flight that the content of the flight plan correctly reflects the operational intentions.
- (h) The Network Manager shall process and distribute the information on the 8,33 kHz channel spacing capability received in the flight plans.
- (i) Requirements laid down in points (a) to (h) shall not apply in the Single European Sky airspace that is not part of the ICAO EUR region.

## SERA.4015 Changes to a flight plan

Regulation (EU) 2024/1111

- (a) All changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported:
  - (1) during the pre-flight phase, to the Network Manager for flights intended to operate in accordance with IFR for a portion of or the entire route, and to air traffic services reporting offices as soon as practicable;
  - (2) during the flight, subject to the provisions of point [SERA.8020\(b\)](#), to the appropriate air traffic services unit.

For other VFR flights, significant changes to a flight plan shall be reported as soon as practicable to the appropriate air traffic services unit.

- (b) In the event of a delay of 30 minutes in excess of the estimated off-block time for a controlled flight or a delay of 1 hour for an uncontrolled flight for which a flight plan has been submitted, the flight plan shall be amended, or a new flight plan submitted, and the old flight plan cancelled, whichever is applicable. For any flight operated in accordance with IFR, delays of more than 15 minutes shall be communicated to the Network Manager.
- (c) In the case of a change in the aircraft equipment and its capability status for a flight, aircraft operators, or the agents that act on their behalf, shall send a modification message to the Network Manager or the air traffic services reporting offices with the appropriate indicator inserted in the relevant item of the flight plan form.
- (d) Information submitted prior to departure regarding fuel or energy endurance or total number of persons carried on board, if incorrect at time of departure, constitutes a significant change to the flight plan and as such shall be reported.
- (e) Requirements laid down in points (a) to (d) shall not apply in Single European Sky airspace that is not part of the ICAO EUR region.

## SERA.4020 Closing a flight plan

*Regulation (EU) No 923/2012*

- (a) An arrival report shall be made in person, by radiotelephony, via data link or by other means as prescribed by the competent authority at the earliest possible moment after landing, to the appropriate air traffic services unit at the arrival aerodrome, by any flight for which a flight plan has been submitted covering the entire flight or the remaining portion of a flight to the destination aerodrome.
  - (1) Submission of an arrival report is not required after landing on an aerodrome where air traffic services are provided on condition that radio communication or visual signals indicate that the landing has been observed.
- (b) When a flight plan has been submitted only in respect of a portion of a flight, other than the remaining portion of a flight to destination, it shall, when required, be closed by an appropriate report to the relevant air traffic services unit.
- (c) When no air traffic services unit exists at the arrival aerodrome or operating site, the arrival report, when required, shall be made as soon as practicable after landing and by the quickest means available to the nearest air traffic services unit.
- (d) When communication facilities at the arrival aerodrome or operating site are known to be inadequate and alternate arrangements for the handling of arrival reports on the ground are not available, the following action shall be taken. Immediately prior to landing the aircraft shall, if practicable, transmit to the appropriate air traffic services unit, a message comparable to an arrival report, where such a report is required. Normally, this transmission shall be made to the aeronautical station serving the air traffic services unit in charge of the flight information region in which the aircraft is operated.
- (e) Arrival reports made by aircraft shall contain the following elements of information:
  - (1) aircraft identification;
  - (2) departure aerodrome or operating site;
  - (3) destination aerodrome or operating site (only in the case of a diversionary landing);
  - (4) arrival aerodrome or operating site;
  - (5) time of arrival.

## GM1 SERA.4020 Closing a flight plan

*ED Decision 2013/013/R*

### ARRIVAL REPORTS

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

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

### SERA.5001 VMC visibility and distance from cloud minima

Regulation (EU) 2016/1185

VMC visibility and distance from cloud minima are contained in Table S5-1.

| Table S5-1 (*)                                                                                                                         |                    |                   |                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|-----------------------------------------------------|
| Altitude band                                                                                                                          | Airspace class     | Flight visibility | Distance from cloud                                 |
| At and above 3 050 m (10 000 ft) AMSL                                                                                                  | A (**) B C D E F G | 8 km              | 1 500 m horizontally<br>300 m (1 000 ft) vertically |
| Below 3 050 m (10 000 ft) AMSL and above<br>900 m (3 000 ft) AMSL, or above 300 m (1 000 ft)<br>above terrain, whichever is the higher | A (**) B C D E F G | 5 km              | 1500 m horizontally<br>300 m (1 000 ft) vertically  |
| At and below 900 m (3 000 ft) AMSL, or 300 m<br>(1 000 ft) above terrain, whichever is the higher                                      | A (**) B C D E     | 5 km              | 1500 m horizontally<br>300 m (1 000 ft) vertically  |
|                                                                                                                                        | F G                | 5 km (***)        | Clear of cloud and with<br>the surface in sight     |

(\*) When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 shall be used in lieu of 10 000 ft.

(\*\*) The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.

(\*\*\*) When so prescribed by the competent authority:

- (a) flight visibilities reduced to not less than 1 500 m may be permitted for flights operating:
  - (1) at speeds of 140 kts IAS or less to give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or
  - (2) in circumstances in which the probability of encounters with other traffic would normally be low, e.g. in areas of low volume traffic and for aerial work at low levels;
- (b) helicopters may be permitted to operate in less than 1 500 m but not less than 800 m flight visibility, if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision.

### GM1 SERA.5001 (\*\*\*)(b) VMC visibility and distance from cloud minima

ED Decision 2025/012/R

#### FLIGHT VISIBILITY — MANNED VCA

Until sufficient safety data related to operations with manned VCA is available, manned VCA should not be operated with less than 1 500 m flight visibility.

## SERA.5005 Visual flight rules

Regulation (EU) 2024/404

- (a) Except when operating as a special VFR flight, VFR flights shall be conducted so that the aircraft is flown in conditions of visibility and distance from clouds equal to or greater than those specified in [Table S5-1](#).
- (b) Except when a clearance is obtained from an air traffic control unit, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or aerodrome traffic circuit, when the reported meteorological conditions at that aerodrome are below the following minima:
  - (1) the ceiling is less than 450 m (1 500 ft); or
  - (2) the ground visibility is less than 5 km.
- (c) When so prescribed by the competent authority, VFR flights at night may be permitted under the following conditions:
  - (1) if leaving the vicinity of an aerodrome, a flight plan shall be submitted in accordance with [SERA.4001\(b\)\(6\)](#);
  - (2) flights shall establish and maintain two-way radio communication on the appropriate ATS communication channel, when available;
  - (3) the VMC visibility and distance from cloud minima as specified in [Table S5-1](#) shall apply except that:
    - (i) the ceiling shall not be less than 450 m (1 500 ft);
    - (ii) the reduced flight visibility provisions specified in [Table S5-1](#)(a) and (b) shall not apply;
    - (iii) in airspace classes B, C, D, E, F and G, at and below 900 m (3 000 ft) AMSL or 300 m (1 000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface; and
    - (iv) [Deleted.]
    - (v) for mountainous area, higher VMC visibility and distance from cloud minima may be prescribed by the competent authority;
  - (4) [Deleted.]
  - (5) except when necessary for take-off or landing, or except when specifically authorised by the competent authority, a VFR flight at night shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:
    - (i) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;
    - (ii) elsewhere than as specified in i), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

- 
- (d) VFR flights shall not be operated:
- (1) at transonic and supersonic speeds unless authorised by the competent authority;
  - (2) above FL 195. Exceptions to this requirement are the following:
    - (i) an airspace reservation has been established, where practical, by the Member States, in which VFR flights may be allowed; or
    - (ii) airspace up to and including flight level 285, when VFR traffic in that airspace has been authorised by the responsible ATS unit in accordance with the authorisation procedures established by the Member States and published in the relevant aeronautical information publication.
- (e) Authorisation for VFR flights to operate above FL 285 shall not be granted where a vertical separation minimum of 300 m (1 000 ft) is applied above FL 290.
- (f) Except when necessary for take-off or landing, or except by permission from the competent authority, a VFR flight shall not be flown:
- (1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height less than 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft;
  - (2) elsewhere than as specified in (1), at a height less than 150 m (500 ft) above the ground or water, or 150 m (500 ft) above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.
- (g) Except where otherwise indicated in air traffic control clearances or specified by the competent authority, VFR flights in level cruising flight when operated above 900 m (3000 ft) from the ground or water, or a higher datum as specified by the competent authority, shall be conducted at a cruising level appropriate to the track as specified in the table of cruising levels in [Appendix 3](#).
- (h) VFR flights shall comply with the provisions of [Section 8](#):
- (1) when operated within Classes B, C and D airspace;
  - (2) when forming part of aerodrome traffic at controlled aerodromes; or
  - (3) when operated as special VFR flights.
- (i) A VFR flight operating within or into areas or along routes designated by the competent authority, in accordance with [SERA.4001\(b\)\(3\) or \(4\)](#), shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and report its position as necessary to, the air traffic services unit providing flight information service.
- (j) An aircraft operated in accordance with the visual flight rules which wishes to change to compliance with the instrument flight rules shall:
- (1) if a flight plan was submitted, communicate the necessary changes to be effected to its current flight plan; or
  - (2) as required by [SERA.4001\(b\)](#), submit a flight plan to the appropriate air traffic services unit as soon as practicable and obtain a clearance prior to proceeding IFR when in controlled airspace.

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

ED Decision 2016/023/R

**NIGHT VFR ON TOP**

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

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

**AMC1 SERA.5005(f) Visual flight rules**

ED Decision 2013/013/R

**VFR MINIMUM HEIGHTS — PERMISSION FROM THE COMPETENT AUTHORITY**

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

**GM1 SERA.5005(f) Visual flight rules**

ED Decision 2013/013/R

**VFR MINIMUM HEIGHTS — PERMISSION FROM THE COMPETENT AUTHORITY**

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

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

## SERA.5010 Special VFR in control zones

*Regulation (EU) 2024/404*

Special VFR flights may be authorised to operate within a control zone, subject to an ATC clearance. Except when otherwise permitted by the competent authority for helicopters in special cases such as, but not limited to, police, medical, search and rescue operations and firefighting flights, the following additional conditions shall apply:

- (a) such special VFR flights may be conducted during day only, unless otherwise permitted by the competent authority;
- (b) by the pilot:
  - (1) clear of cloud and with the surface in sight;
  - (2) the flight visibility is not less than 1 500 m or, for helicopters, not less than 800 m;
  - (3) fly at a speed of 140 kts IAS or less to give adequate opportunity to observe other traffic and any obstacles in time to avoid a collision; and
- (c) an air traffic control unit shall not issue a special VFR clearance to aircraft to take off or land at an aerodrome within a control zone, or enter the aerodrome traffic circuit within a control zone, when the reported meteorological conditions at that aerodrome are below the following minima:
  - (1) the ground visibility is less than 1 500 m or, for helicopters, less than 800 m;
  - (2) the ceiling is less than 180 m (600 ft).

## GM1 SERA.5010 Special VFR in control zones

*ED Decision 2016/023/R*

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

*ED Decision 2016/023/R*

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

*ED Decision 2016/023/R*

### SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS

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

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

ED Decision 2013/013/R

**SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS**

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

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

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

ED Decision 2024/007/R

**ISSUANCE OF SPECIAL VFR CLEARANCE**

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 land at an aerodrome within the control zone, or enter the 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.

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

Regulation (EU) 2016/1185

**(a) Aircraft equipment**

Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown and in accordance with the applicable air operations legislation.

**(b) Minimum levels**

Except when necessary for take-off or landing, or except when specifically authorised by the competent authority, an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:

- (1) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;
- (2) elsewhere than as specified in (1), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

**(c) Change from IFR flight to VFR flight**

- (1) An aircraft electing to change the conduct of its flight from compliance with the instrument flight rules to compliance with the visual flight rules shall notify the appropriate air traffic services unit specifically that the IFR flight is cancelled and communicate thereto the changes to be made to its current flight plan.

- (2) When an aircraft operating under the instrument flight rules is flown in or encounters visual meteorological conditions it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted visual meteorological conditions.
- (3) Change from IFR flight to VFR flight shall only be acceptable when a message initiated by the pilot-in-command containing the specific expression 'CANCELLING MY IFR FLIGHT', together with the changes, if any, to be made to the current flight plan, is received by an ATS unit. No invitation to change from IFR flight to VFR flight shall be made by ATS either directly or by inference.

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

ED Decision 2013/013/R

### MINIMUM LEVELS

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

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

ED Decision 2016/023/R

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

## SERA.5020 IFR — Rules applicable to IFR flights within controlled airspace

Regulation (EU) No 923/2012

- (a) IFR flights shall comply with the provisions of [Section 8](#) when operated in controlled airspace.
- (b) An IFR flight operating in cruising flight in controlled airspace shall be flown at a cruising level, or, if authorised by ATS unit to employ cruise climb techniques, between two levels or above a level, selected from the table of cruising levels in [Appendix 3](#), except that the correlation of levels to track prescribed therein shall not apply whenever otherwise indicated in air traffic control clearances or specified by the competent authority in aeronautical information publications.

## SERA.5025 IFR — Rules applicable to IFR flights outside controlled airspace

*Regulation (EU) No 923/2012*

### (a) Cruising levels

An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level appropriate to its track as specified in the table of cruising levels in [Appendix 3](#), except when otherwise specified by the competent authority for flight at or below 900 m (3 000 ft) above mean sea level.

### (b) Communications

An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the competent authority in accordance with [SERA.4001\(b\)\(3\) or \(4\)](#) shall maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service.

### (c) Position reports

An IFR flight operating outside controlled airspace and required by the competent authority to maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service, shall report position, as specified in [SERA.8025](#) for controlled flights.

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

*ED Decision 2013/013/R*

### CRUISING LEVELS

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

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

*ED Decision 2013/013/R*

### POSITION REPORTS

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

## SECTION 6 AIRSPACE CLASSIFICATION

### SERA.6001 Classification of airspaces

Regulation (EU) No 923/2012

- (a) Member States shall designate airspace in accordance with the following airspace classification and in accordance with [Appendix 4](#):
- (1) *Class A.* IFR flights only are permitted. All flights are provided with air traffic control service and are separated from each other. Continuous air-ground voice communications are required for all flights. All flights shall be subject to ATC clearance.
  - (2) *Class B.* IFR and VFR flights are permitted. All flights are provided with air traffic control service and are separated from each other. Continuous air-ground voice communications are required for all flights. All flights shall be subject to ATC clearance.
  - (3) *Class C.* IFR and VFR flights are permitted. All flights are provided with air traffic control service and IFR flights are separated from other IFR flights and from VFR flights. VFR flights are separated from IFR flights and receive traffic information in respect of other VFR flights and traffic avoidance advice on request. Continuous air-ground voice communications are required for all flights. For VFR flights a speed limitation of 250 kts indicated airspeed (IAS) applies below 3 050 m (10 000 ft) AMSL, except where approved by the competent authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. All flights shall be subject to ATC clearance.
  - (4) *Class D.* IFR and VFR flights are permitted and all flights are provided with air traffic control service. IFR flights are separated from other IFR flights, receive traffic information in respect of VFR flights and traffic avoidance advice on request. VFR flights receive traffic information in respect of all other flights and traffic avoidance advice on request. Continuous air-ground voice communications are required for all flights and a speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL, except where approved by the competent authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. All flights shall be subject to ATC clearance.
  - (5) *Class E.* IFR and VFR flights are permitted. IFR flights are provided with air traffic control service and are separated from other IFR flights. All flights receive traffic information, as far as is practical. Continuous air-ground voice communications are required for IFR flights. A speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL, except where approved by the competent authority for aircraft types, which for technical or safety reasons cannot maintain this speed. All IFR flights shall be subject to ATC clearance. Class E shall not be used for control zones.
  - (6) *Class F.* IFR and VFR flights are permitted. All participating IFR flights receive an air traffic advisory service and all flights receive flight information service if requested. Continuous air-ground voice communications are required for IFR flights participating in the advisory service and all IFR flights shall be capable of establishing air-ground voice communications. A speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL, except where approved by the competent authority for aircraft types, which for technical or safety reasons cannot maintain this speed. ATC clearance is not required.
  - (7) *Class G.* IFR and VFR flights are permitted and receive flight information service if requested. All IFR flights shall be capable of establishing air-ground voice

communications. A speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL, except where approved by the competent authority for aircraft types, which for technical or safety reasons cannot maintain this speed. ATC clearance is not required.

- (8) Implementation of Class F shall be considered as a temporary measure until such time as it can be replaced by an alternative classification.
- (b) The designation of the airspace classification shall be appropriate to the needs of the Member States, except that all airspace above FL 195 shall be classified as Class C airspace.

## AMC1 SERA.6001 Classification of airspaces

ED Decision 2013/013/R

### GENERAL

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

## GM1 SERA.6001 Classification of airspaces

ED Decision 2013/013/R

### GENERAL

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

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

ED Decision 2013/013/R

### SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE COMPETENT AUTHORITY

Approval by the competent authority of an alleviation of the 250 kt speed limitation below 3 050 m (10 000 ft) should be based on a safety assessment. The conditions for granting such alleviation should be specified in the Member State Aeronautical Information Publication (AIP).

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

ED Decision 2013/013/R

**SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE COMPETENT AUTHORITY**

- (a) The following should, as a minimum, be considered when developing the safety assessment:
  - (1) air traffic, airspace classes requirements, and airspace design, the procedures designed for the airspace, and the potential use of clearances to maintain own separation as described in [GM1 to SERA.8005\(b\)](#);
  - (2) the minimum safe speed stated in the approved Aircraft Flight Manual (AFM) of the relevant aircraft types.
- (b) The safety assessment should be developed in coordination with the relevant airspace users.
- (c) Coordination should be ensured with the affected airspace users who should provide the data necessary for the development of the safety assessment.
- (d) The competent authority should ensure that the aircraft types eligible for such alleviation are specified in the Member State Aeronautical Information Publication.

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

ED Decision 2013/013/R

**SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE COMPETENT AUTHORITY**

- (a) For localised alleviations from the speed limitation, the safety assessment is normally conducted by the ATS provider and is subject to approval by the competent authority.
- (b) Where alleviation is applied universally across the airspace of the Member State, the competent authority should ensure that appropriate safety assessment has been conducted.

**AMC1 SERA.6001(a)(6) Classification of airspaces**

ED Decision 2024/007/R

**OPERATIONS IN CLASS F AIRSPACE**

- (a) Aircraft using the air traffic advisory service

IFR flights electing to use or required by the competent authority on the basis of regional air navigation agreements to use the air traffic advisory service when operating within Class F airspace should comply with the same procedures as those applying to controlled flights except that:

  - (1) the flight plan and changes thereto are not subjected to a clearance, since the unit furnishing air traffic advisory service will only provide advice on the presence of essential traffic or suggestions a possible course of action;
  - (2) it is for the aircraft to decide whether or not it will comply with the advice or suggestion received and to inform the unit providing air traffic advisory service, without delay, of its decision;
  - (3) air-ground contacts should be made with the air traffic services unit designated to provide air traffic advisory service within the advisory airspace or portion thereof.

- (b) Aircraft not using the air traffic advisory service
- (1) Aircraft wishing to conduct IFR flights within advisory airspace, but not electing to use the air traffic advisory service, should nevertheless submit a flight plan, and notify changes made thereto to the unit providing that service.
  - (2) IFR flights intending to cross an advisory route should do so as nearly as possible at an angle of 90 degrees to the direction of the route and at a level, appropriate to its track, selected from the tables of cruising levels prescribed for use by IFR flights operating outside controlled airspace.

## GM1 SERA.6001(a)(6) Classification of airspaces

ED Decision 2024/007/R

### AIR TRAFFIC ADVISORY SERVICE

The objective of the air traffic advisory service is to make information on collision hazards more effective than it would be in the mere provision of flight information service (FIS). It may be provided to aircraft conducting IFR flights in advisory airspace or on advisory routes (Class F airspace). Such areas or routes will be specified by the Member State concerned.

## GM2 SERA.6001(a)(6) Classification of airspaces

ED Decision 2024/007/R

### FLIGHT PLAN CHANGES IN CLASS F AIRSPACE

It is assumed that a pilot will not effect a change in the current flight plan until they have notified the intended change to the appropriate air traffic services unit and, if practicable, have received acknowledgement or relevant advice.

## GM3 SERA.6001(a)(6) Classification of airspaces

ED Decision 2024/007/R

### CLEARANCES TO FLIGHTS THAT OPERATE PARTIALLY IN CLASS F AIRSPACE

When a flight operates or is about to operate in a control area to continue eventually into an advisory area or along an advisory route, a clearance may be issued for the whole route, but the clearance as such, or revisions to it, applies only to those portions of the flight that are conducted within control areas and control zones. Advice or suggestions will be provided as necessary for the remaining portion(s) of the route.

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

ED Decision 2013/013/R

### GENERAL

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

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

ED Decision 2013/013/R

### DURATION OF TEMPORARY MEASURE

- (a) When establishing Class F airspace, its intended temporary duration after which it should be replaced by an alternative classification should be specified in the AIP of the Member State.
- (b) The intended temporary duration of Class F airspace should not be longer than 3 years.

### EXAMPLE

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

## SERA.6005 Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

Regulation (EU) 2021/666

- (a) Radio mandatory zone (RMZ)
  - (1) VFR flights operating in parts of Classes E, F or G airspace and IFR flights operating in parts of Classes F or G airspace designated as a radio mandatory zone (RMZ) by the competent authority shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel, unless in compliance with alternative provisions prescribed for that particular airspace by the ANSP.
  - (2) Before entering a radio mandatory zone, an initial call containing the designation of the station being called, call sign, type of aircraft, position, level, the intentions of the flight and other information as prescribed by the competent authority, shall be made by pilots on the appropriate communication channel.
- (b) Transponder mandatory zone (TMZ)

All flights operating in airspace designated by the competent authority as a transponder mandatory zone (TMZ) shall carry and operate SSR transponders capable of operating on Modes A and C or on Mode S, unless in compliance with alternative provisions prescribed for that particular airspace by the ANSP.
- (c) U-space airspace

Manned aircraft operating in airspace designated by the competent authority as a U-space airspace, and not provided with an air traffic control service by the ANSP, shall continuously make themselves electronically conspicuous to the U-space service providers.
- (d) Airspaces designated as radio mandatory zone, transponder mandatory zone or U-space airspace shall be duly promulgated in the aeronautical information publications.

## AMC1 SERA.6005(c) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

ED Decision 2022/024/R

### MEANS OF TRANSMISSION OF INFORMATION AND INFORMATION TO BE TRANSMITTED

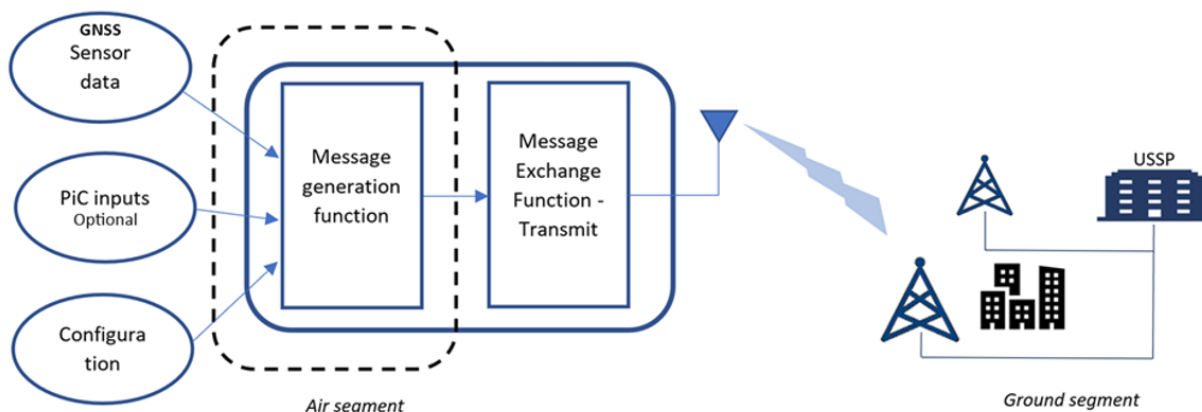
- (a) Manned aircraft should transmit information through one or more of the following means to continuously make themselves electronically conspicuous to U-space service providers:
- (1) A certified ADS-B OUT system compliant with ICAO Annex 10 Volume IV Chapter 5 (Mode-S Extended Squitter).
  - (2) A certified ADS-B OUT system compliant with ICAO Annex 10 Volume III Chapter 12 (Universal Access Transceiver) 12 months after its implementation and deployment for that purpose in all Member States.
  - (3) A system that transmits the information specified in Appendix 1 to this AMC using:
    - (i) a short-range device (SRD) 860 frequency band, and the information is transmitted in compliance with the format as documented in technical specification ADS-L 4 SRD-860;
    - (ii) standardised mobile telecommunication network services coordinated for aerial use in the relevant decisions of the Electronic Communication Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (CEPT), and the information is transmitted in compliance with the format as documented in technical specification ADS-L 4 MOBILE. The aircraft operator using application-based service should ensure that all other applications or functions that might run in the background are switched off or made inactive to limit in-flight transmissions to only those necessary to minimise interference through unpredictable data upload.
- This option becomes applicable 6 months after the publication of the technical specification ADS-L 4 MOBILE.
- The systems used for transmission in accordance with points (3)(i) and (ii) should bear an appropriate CE marking, and be either installed on the aircraft with the installation approved by the competent authority or carried on board the aircraft as non-installed equipment.
- (b) The information specified in Appendix 1 to this AMC, and which is transmitted through a system referred to in points (3)(i) and (ii), shall be transmitted in a machine-readable format accessible to U-space service providers without any restrictions.

## Appendix 1 to AMC1 SERA.6005(c) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

ED Decision 2022/024/R

### ADS-L MESSAGE GENERATION FUNCTION

- (a) This AMC details the minimum set of parameters that should be transmitted, and a set of parameters that may be optionally transmitted.
- (b) All parameters should originate from a position source or from the system configuration. Each ADS-L message should include an identifier unique to the transmission source.



**Figure 1: The scope of the ADS-L message generation function (dashed line) as specified in Appendix 1 to AMC1 to SERA.6005(c)**

#### TRANSMITTED PARAMETERS

| Data type                      | Parameter                    | Required/<br>optional | Remarks                                                | Source                  |
|--------------------------------|------------------------------|-----------------------|--------------------------------------------------------|-------------------------|
| <b>Aircraft address</b>        | Unique identifier / address  | Required              | Should be included in each transmission                | Configuration           |
|                                | Address type                 | Required              | See the table below                                    | Configuration           |
| <b>Time</b>                    | Timestamp                    | Required              |                                                        | Position source         |
| <b>Aircraft identification</b> | Aircraft category            | Required              | See the table below                                    | Configuration           |
| <b>Emergency status</b>        | Emergency status             | Optional              | See the table below                                    | Pilot-in-command inputs |
| <b>Position</b>                | Latitude                     | Required              | Reference WGS-84                                       | Position source         |
|                                | Longitude                    | Required              | Reference WGS-84                                       | Position source         |
|                                | GNSS altitude                | Required              | Reference WGS-84 Height Above Ellipsoid (HAE)          | Position source         |
| <b>Velocity/track</b>          | Ground speed                 | Required              | Alternatively, north-south, east-west velocities       | Position source         |
|                                | Ground track                 | Required              |                                                        | Position source         |
|                                | Vertical rate                | Required              |                                                        | Position source         |
|                                | Velocity accuracy            | Optional              | See the table below                                    | Position source         |
| <b>Capabilities and status</b> | Version                      | Required              | To facilitate interoperability                         | Configuration           |
|                                | Design assurance             | Optional              | See the table below                                    | Configuration           |
|                                | Horizontal position accuracy | Required              | 95 % confidence<br>See table below                     | Position source         |
|                                | Vertical position accuracy   | Required              | 95 % confidence<br>See the table below                 | Position source         |
|                                | Navigation integrity         | Optional              | Containment radius (Rc)<br>See table below             | Position source         |
|                                | Source integrity level       | Optional              | Probability that Rc is exceeded<br>See the table below | Configuration           |

**TABLES FOR REQUIRED PARAMETERS**

| Data type    | Values            |
|--------------|-------------------|
| Address type | Reserved          |
|              | ICAO              |
|              | Unique identifier |
|              | Reserved          |

| Parameter         | Values                                            |
|-------------------|---------------------------------------------------|
| Aircraft category | No emitter category information available         |
|                   | Light fixed-wing (<7 031 kg / 15 500 lb)          |
|                   | Small to heavy fixed-wing (≥7 031 kg / 15 500 lb) |
|                   | Light rotorcraft                                  |
|                   | Heavy rotorcraft                                  |
|                   | Glider/sailplane                                  |
|                   | Lighter-than-air                                  |
|                   | Ultralight                                        |
|                   | Hang-glider                                       |
|                   | Paraglider                                        |
|                   | Parachutist/skydiver/wingsuit                     |
|                   | eVTOL/UAM                                         |
|                   | UAS 'open' category                               |
|                   | UAS 'specific' category                           |
|                   | UAS 'certified' category                          |
|                   | Model plane                                       |
|                   | Reserved                                          |

| Parameter | 95 % horizontal accuracy bound |
|-----------|--------------------------------|
|           | EPU ≥ 926 m (0.5 NM)           |
|           | EPU < 926 m (0.5 NM)           |
|           | EPU < 555.6 m (0.3 NM)         |
|           | EPU < 185.2 m (0.1 NM)         |
|           | EPU < 92.6 m (0.05 NM)         |
|           | EPU < 30 m                     |
|           | EPU < 10 m                     |
|           | EPU < 3 m                      |

| Data type                  | 95 % geometric altitude accuracy |
|----------------------------|----------------------------------|
| Vertical position accuracy | Unknown or > 150 m               |
|                            | ≤ 150 m                          |
|                            | ≤ 45 m                           |
|                            | ≤ 15 m                           |

**TABLES FOR OPTIONAL PARAMETERS**

| Parameter        | Values                      |
|------------------|-----------------------------|
| Emergency status | No emergency                |
|                  | General emergency           |
|                  | Lifeguard/medical emergency |
|                  | Minimum fuel (Energy)       |
|                  | No communications           |
|                  | Unlawful interference       |
|                  | Downed aircraft             |
|                  | Reserved                    |

| Parameter         | Horizontal Figure of Merit for rate (HFOMr) values |
|-------------------|----------------------------------------------------|
| Velocity accuracy | Unknown or $\geq 10$ m/s                           |
|                   | $< 10$ m/s                                         |
|                   | $< 3$ m/s                                          |
|                   | $< 1$ m/s                                          |

| Parameter        | Software and hardware DAL |
|------------------|---------------------------|
| Design assurance | n/a                       |
|                  | D                         |
|                  | C                         |
|                  | B                         |

| Parameter            | Rc           |
|----------------------|--------------|
| Navigation integrity | $\geq 20$ NM |
|                      | $< 20$ NM    |
|                      | $< 8$ NM     |
|                      | $< 4$ NM     |
|                      | $< 2$ NM     |
|                      | $< 1$ NM     |
|                      | $< 0.6$ NM   |
|                      | $< 0.2$ NM   |
|                      | $< 0.1$ NM   |
|                      | $< 75$ m     |
|                      | $< 25$ m     |
|                      | $< 7.5$ m    |

| Parameter              | Probability of exceeding Rc |
|------------------------|-----------------------------|
| Source integrity level | Unknown or $> 1E-3$ / FH    |
|                        | $\leq 1E-3$ / FH            |
|                        | $\leq 1E-5$ / FH            |
|                        | $\leq 1E-7$ / FH            |

**TRANSMISSION RATE**

The *position* and *velocity/track* parameters should be transmitted at a rate of at least 1 Hz. The transmission of other parameters may be less frequent than 1 Hz, but not less frequent than 0.1 Hz.

**ERROR CONTROL**

There should be at least a digital error detection technique at one level of the transmission (e.g. cyclic redundancy check (CRC)). No specific error-control means are prescribed.

**SECURITY**

The transmission should be protected to ensure security and confidentiality of the exchanged parameters.

**POSITION SOURCE**

The *horizontal and vertical position* and *velocity/track* parameters should primarily be based on a GNSS source.

**GM1 SERA.6005(c) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace**

ED Decision 2022/024/R

**POSITION SOURCE**

It is recommended that the GNSS position source process more than one constellation and/or use SBAS augmentation if available.

**USE OF THE 'HARDWARE AND SOFTWARE DAL' PARAMETER**

The development assurance parameter is a provision to indicate the system's hardware and software development assurance levels (DALs), if applicable. Further information on DAL determination and use may be found in aeronautical standards for certification of software and hardware items, such as ED-80 and ED-12().

**INSTALLED SYSTEMS**

- (a) Certified ADS-B OUT systems compliant with ICAO Annex 10 that are implemented and deployed for that purpose in all Member States.

The systems may be installed in accordance with CS-ACNS (Subpart D Section 4) or CS-STAN (Standard Change CS-SC005 *INSTALLATION OF AN ADS-B OUT SYSTEM COMBINED WITH A TRANSPONDER SYSTEM*), or AMC 20-24. The installation of the system should be approved by the competent authority.

- (b) Systems using an SRD 860 frequency band or standardised mobile telecommunication network services coordinated for aerial use in Europe.

The installation of a system in an aircraft, for which EASA is the competent authority for the aircraft design, should be performed in accordance with the EASA aircraft design change processes or in accordance with CS-STAN (CS-SC0051 *INSTALLATION OF 'FLARM' EQUIPMENT*, and CS-SC0057 *INSTALLATION OF AN ELECTRONIC CONSPICUITY (EC) FUNCTION*).

- (c) The installation of a system in an aircraft, for which an aviation competent authority is the authority for the aircraft design, should be performed in accordance with the aircraft design change processes defined by the relevant authority. Aviation competent authorities may make

use of recognised standards (e.g. CS-STAN) for technically similar installations in aircraft specified in Annex I to Regulation (EU) 2018/1139.

#### **DECLARATION OF COMPLIANCE**

The manufacturer of a system referred to in points (a)(3)(i) and (ii) of AMC1 SERA.6005(c) may declare conformity of its system with point SERA.6005(c). The declaration should be supported by technical documentation showing compliance. Alternatively, the manufacturer may voluntarily ask for a technical evaluation of its system by a competent authority. Such declarations of conformity and technical evaluations may be used by aircraft operators to demonstrate to competent authorities compliance with point SERA.6005(c).

#### **NON-INSTALLED EQUIPMENT**

- (d) The carriage of non-installed equipment on board the aircraft, for which EASA is the competent authority for the aircraft design, should comply with the applicable air operations requirements (points CAT.GEN.MPA.140, NCC.GEN.130, NCO.GEN.125, and SPO.GEN.130). The carriage of non-installed equipment on board the aircraft, for which an aviation competent authority is the authority for the aircraft design, should comply with the applicable air operations requirements defined by the relevant authorities. Aviation competent authorities may make use of the relevant EASA requirements for similar kinds of air operations with aircraft specified in Annex I to Regulation (EU) 2018/1139.
- (e) The equipment should be set up on board the aircraft in such a way so as to limit transmission obscuration by the airframe, human body, or other structures and at the same time maximise the visibility of the transmitting antennas, including those on the ground.

#### **MOBILE TELECOMMUNICATION SERVICES FOR AERIAL USE**

- (f) National and international roaming agreements rely on standardised roamed services (SMS, voice streaming, etc.), which cannot be automatically presumed for aerial services. Only the mobile telecommunication services concluded by the standardisation bodies for aerial use could be used by manned aircraft to make themselves electronically conspicuous to U-space service providers.
- (g) There are country-specific restrictions for the aerial use of certain mobile telecommunication frequencies. Therefore, the frequencies used by aerial mobile telecommunication services should be consistent with the relevant decisions of the Electronic Communication Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (CEPT) as implemented by national telecommunication authorities.

#### **MILITARY AND STATE AIRCRAFT OPERATIONS**

- (h) Although the amendment to Implementing Regulation (EU) No 923/2012 introduced by Implementing Regulation (EU) 2021/666 does not apply to military and State aircraft operations and training, these aircraft may fully or partially operate in the U-space airspace. Military and State organisations may reserve the right not to be electronically conspicuous to U-space service providers, taking both security and safety requirements into account.
- (i) At national level, coordination between authorities in charge of civil and military/State aircraft should assess the risk of electronically non-conspicuous military and State aircraft operating in U-space airspace and may specify means by which the presence and or location of such aircraft may be communicated by the relevant operational units.

- (j) In determining the designation of an area as U-space airspace, States should consider operations and training conducted with manned military and State aircraft in the airspace concerned and the ability or otherwise to be conspicuous, whether for technical or operational reasons.

#### **SAFEGUARDS FOR CONTINUOUS TRANSMISSION**

- (k) U-space service providers may use the provisions of Article 18(h) of Implementing Regulation (EU) 2021/664 to inform the competent authority about any known irregularities in the continuous transmission of the systems that make manned aircraft electronically conspicuous to U-space service providers, particularly if such irregularities may negatively affect the provision of air traffic information services as referred to in Article 11 of that Regulation.
- (l) Manned aircraft that operate in U-space airspace should use the provisions of Regulation (EU) No 376/2014 for reporting any known irregularities in the continuous transmission of the systems used for making them electronically conspicuous to U-space service providers.
- (m) The competent authority should, in case of an urgent safety problem, determine a corrective action (including directives or recommendations) to be taken by a natural or a legal person, where this is necessary to safeguard the safety of traffic information service.

### **GM1 SERA.6005(d) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace**

ED Decision 2024/007/R

#### **PUBLICATION OF RADIO MANDATORY ZONES AND TRANSPONDER MANDATORY ZONES**

For guidance on the publication of radio mandatory zones and transponder mandatory zones, refer to AMC1 and GM1 to point AIS.OR.325 'Aeronautical charts' of Commission Implementing [Regulation \(EU\) 2017/373](#).

## SECTION 7 AIR TRAFFIC SERVICES

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

*Regulation (EU) No 923/2012*

The objectives of the air traffic services shall be to:

- (a) prevent collisions between aircraft;
- (b) prevent collisions between aircraft on the manoeuvring area and obstructions on that area;
- (c) expedite and maintain an orderly flow of air traffic;
- (d) provide advice and information useful for the safe and efficient conduct of flights;
- (e) notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required.

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

*ED Decision 2013/013/R*

#### GENERAL

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

### SERA.7002 Collision hazard information when ATS based on surveillance are provided

*Regulation (EU) 2016/1185*

- (a) When an identified controlled flight is observed to be on a conflicting path with an unknown aircraft, deemed to constitute a collision hazard, the pilot of the controlled flight shall, whenever practicable:
  - (1) be informed of the unknown aircraft, and, if the pilot so requests, or if the situation so warrants in the opinion of the controller, avoiding action shall be suggested; and
  - (2) be notified when the conflict no longer exists.

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

*ED Decision 2016/023/R*

#### 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**

ED Decision 2016/023/R

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**

ED Decision 2016/023/R

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**

ED Decision 2020/007/R

#### **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, as far as practicable:

- (a) be informed as to the need for collision avoidance action to be initiated, and if so requested by the pilot or if, in the opinion of the air traffic controller, the FIS officer or the AFIS officer, the situation warrants, a course of avoiding action should be suggested; and
- (b) be notified when the conflict no longer exists.

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

ED Decision 2016/023/R

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**

ED Decision 2016/023/R

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

*ED Decision 2016/023/R*

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.

## SERA.7005 Coordination between the aircraft operator and air traffic services

*Regulation (EU) No 923/2012*

- (a) Air traffic services units, in carrying out their objectives, shall have due regard for the requirements of the aircraft operators consequent on their obligations as specified in the relevant Union legislation on Air Operations, and, if so required by the aircraft operators, shall make available to them or their designated representatives such information as may be available to enable them or their designated representatives to carry out their responsibilities.
- (b) When so requested by an aircraft operator, messages (including position reports) received by air traffic services units and relating to the operation of the aircraft for which operational control service is provided by that aircraft operator shall, so far as practicable, be made available immediately to the aircraft operator or a designated representative in accordance with locally agreed procedures.

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

*ED Decision 2013/013/R*

### GENERAL

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

## SECTION 8 AIR TRAFFIC CONTROL SERVICE

### SERA.8001 Application

*Regulation (EU) No 923/2012*

Air traffic control service shall be provided:

- (a) to all IFR flights in airspace Classes A, B, C, D and E;
- (b) to all VFR flights in airspace Classes B, C and D;
- (c) to all special VFR flights;
- (d) to all aerodrome traffic at controlled aerodromes.

### SERA.8005 Operation of air traffic control service

*Regulation (EU) 2020/469*

- (a) In order to provide air traffic control service, an air traffic control unit shall:
  - (1) be provided with information on the intended movement of each aircraft, or variations therefrom, and with current information on the actual progress of each aircraft;
  - (2) determine from the information received, the relative positions of known aircraft to each other;
  - (3) issue one or more of the following: clearances, instructions or information for the purpose of preventing collision between aircraft under its control and of expediting and maintaining an orderly flow of traffic;
  - (4) coordinate clearances as necessary with other units:
    - (i) whenever an aircraft might otherwise conflict with traffic operated under the control of such other units;
    - (ii) before transferring control of an aircraft to such other units.
- (b) Clearances issued by air traffic control units shall provide separation:
  - (1) between all flights in airspace Classes A and B;
  - (2) between IFR flights in airspace Classes C, D and E;
  - (3) between IFR flights and VFR flights in airspace Class C;
  - (4) between IFR flights and special VFR flights;
  - (5) between special VFR flights unless otherwise prescribed by the competent authority;

except that, when requested by the pilot of an aircraft and agreed by the pilot of the other aircraft and if so prescribed by the competent authority for the cases listed under b) above in airspace Classes D and E, a flight may be cleared subject to maintaining own separation in respect of a specific portion of the flight below 3 050 m (10 000 ft) during climb or descent, during day in visual meteorological conditions.

- (c) Except for cases of operations on parallel or near-parallel runways as in point ATS.TR.255 of Annex IV to [Commission Implementing Regulation \(EU\) 2017/373](#)<sup>1</sup>, or when a reduction in separation minima in the vicinity of aerodromes can be applied, separation by an ATC unit shall be obtained by at least one of the following:
- (1) vertical separation, obtained by assigning different levels selected from the table of cruising levels in [Appendix 3](#), except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or ATC clearances. The vertical separation minimum shall be a nominal 300 m (1 000 ft) up to and including FL 410 and a nominal 600 m (2 000 ft) above that level. Geometric height information shall not be used to establish vertical separation;
  - (2) horizontal separation, obtained by providing:
    - (i) longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance; or
    - (ii) lateral separation, by maintaining aircraft on different routes or in different geographical areas.

### GM1 SERA.8005(a)(3) Operation of air traffic control service

ED Decision 2020/007/R

#### CLEARANCE FOR IMMEDIATE TAKE-OFF

In the interest of expediting traffic, a clearance for immediate take-off may be issued to an aircraft before it enters the runway. On acceptance of such clearance, the aircraft should taxi out to the runway and take off in one continuous movement.

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

ED Decision 2013/013/R

#### CLEARANCES TO MAINTAIN OWN SEPARATION

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

### GM2 SERA.8005(b) Operation of air traffic control service

ED Decision 2020/007/R

#### CLEARANCES TO FLY MAINTAINING OWN SEPARATION WHILE IN VISUAL METEOROLOGICAL CONDITIONS

- (a) If there is a possibility that flight under visual meteorological conditions may become impracticable, an IFR flight should be provided with alternative instructions to be complied with in the event that flight in visual meteorological conditions cannot be maintained for the term of the clearance.

<sup>1</sup> Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1).

- (b) The pilot of an IFR flight, on observing that conditions are deteriorating and considering that operation in visual meteorological conditions will become impossible, should inform air traffic control units before entering instrument meteorological conditions and should proceed in accordance with the alternative instructions given.

### GM3 SERA.8005(b) Operation of air traffic control service

ED Decision 2020/007/R

#### CLEARANCES TO FLY MAINTAINING OWN SEPARATION WHILE IN VISUAL METEOROLOGICAL CONDITIONS

- (a) The provision of vertical or horizontal separation by an air traffic control unit is not applicable in respect of any specified portion of a flight cleared subject to maintaining own separation and remaining in visual meteorological conditions. It is for the aircraft so cleared to ensure, for the duration of the clearance, that it is not operated in such proximity to other flights as to create a collision hazard.
- (b) It is axiomatic that a VFR flight must remain in visual meteorological conditions at all times. Accordingly, the issuance of a clearance to a VFR flight to fly subject to maintaining own separation and remaining in visual meteorological conditions has no other object than to signify that, for the duration of the clearance, separation from other aircraft by air traffic control units is not provided.
- (c) The objectives of the air traffic control service as prescribed in ATS.TR.100 of [Regulation \(EU\) 2017/373](#) do not include prevention of collision with terrain. Pilots are responsible for ensuring that any clearances issued by air traffic control units are safe in this respect. When vectoring or assigning a direct routing not included in the flight plan, which takes an IFR flight off published ATS route or instrument procedure, the procedures in ATS.TR.235(a)(5) of [Regulation \(EU\) 2017/373](#) apply.

### AMC1 SERA.8005(c) Operation of air traffic control service

ED Decision 2020/007/R

#### VISUAL APPROACH

- (a) Subject to the conditions described in point (b), clearance for an IFR flight to execute a visual approach may be requested by a flight crew or initiated by the air traffic controller. In the latter case, the concurrence of the flight crew should be required.
- (b) An IFR flight should only be cleared to execute a visual approach, provided the pilot can maintain visual reference to the terrain and:
  - (1) the reported ceiling is at or above the level of the beginning of the initial approach segment for the aircraft so cleared; or
  - (2) the pilot reports at the level of the beginning of the initial approach segment or at any time during the instrument approach procedure that the meteorological conditions are such that with reasonable assurance a visual approach and landing can be completed.
- (c) Except between aircraft performing successive visual approaches as described in point (d), separation should be provided between an aircraft cleared to execute a visual approach and other arriving and departing aircraft.
- (d) For successive visual approaches, separation should be maintained by the air traffic controller until the pilot of a succeeding aircraft reports having the preceding aircraft in sight. The aircraft should then be instructed to follow and maintain own separation from the preceding aircraft.

- (e) In case of aircraft performing successive visual approaches and instructed to maintain own separation as in point (d), and the distance between such aircraft is less than the appropriate wake turbulence minimum, the air traffic controller should issue a caution of possible wake turbulence.

## GM1 to AMC1 SERA.8005(c) Operation of air traffic control service

ED Decision 2020/007/R

### VISUAL APPROACH

The pilot-in-command of the aircraft concerned is responsible for ensuring that the spacing from a preceding aircraft of a heavier wake turbulence category is acceptable. If it is determined that additional spacing is required, the flight crew should inform the ATC unit accordingly, stating their requirements.

## GM1 SERA.8005(c)(1) Operation of air traffic control service

ED Decision 2020/007/R

### GEOMETRIC HEIGHT INFORMATION

Geometric height information is generated by airborne systems such as GPS or radio altimeters.

## SERA.8010 Separation minima

Regulation (EU) No 923/2012

- (a) The selection of separation minima for application within a given portion of airspace shall be made by the ANSP responsible for the provision of air traffic services and approved by the competent authority concerned.
- (b) For traffic that will pass from one into the other of neighbouring airspaces and for routes that are closer to the common boundary of the neighbouring airspaces than the separation minima applicable in the circumstances, the selection of separation minima shall be made in consultation between the ANSPs responsible for the provision of air traffic services in neighbouring airspace.
- (c) Details of the selected separation minima and of their areas of application shall be notified:
- (1) to the air traffic services units concerned; and
  - (2) to pilots and aircraft operators through aeronautical information publications, where separation is based on the use by aircraft of specified navigation aids or specified navigation techniques.

## GM1 SERA.8010(b) Separation minima

ED Decision 2013/013/R

### GENERAL

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

## SERA.8012 Application of wake turbulence separation

*Regulation (EU) 2020/469*

- (a) Air traffic control units shall apply wake turbulence separation minima to aircraft in the approach and departure phases of flight in any of the following circumstances:
  - (1) an aircraft is operating directly behind another aircraft at the same altitude or less than 300 m (1 000 ft) below it;
  - (2) both aircraft are using the same runway or parallel runways separated by less than 760 m (2 500 ft);
  - (3) an aircraft is crossing behind another aircraft at the same altitude or less than 300 m (1 000 ft) below it.
- (b) Paragraph (a) shall not apply to arriving VFR flights and to arriving IFR flights executing visual approach when the aircraft has reported the preceding aircraft in sight and has been instructed to follow and maintain own separation from that aircraft. In those cases, the air traffic control unit shall issue caution for wake turbulence.

## AMC1 SERA.8012 Application of wake turbulence separation

*ED Decision 2024/007/R*

### CATEGORISATION OF AIRCRAFT FOR THE PURPOSES OF WAKE TURBULENCE SEPARATION MINIMA APPLICATION

Wake turbulence separation minima should be based on a grouping of aircraft types into four categories according to the maximum certificated take-off mass as follows:

- (a) SUPER (J) — aircraft types listed as such in ICAO Doc 8643 'Aircraft Type Designators', latest edition;
- (b) HEAVY (H) — all aircraft types of 136 000 kg or more, with the exception of aircraft types covered in point (a);
- (c) MEDIUM (M) — aircraft types of less than 136 000 kg but more than 7 000 kg; and
- (d) LIGHT (L) — aircraft types of 7 000 kg or less.

## SERA.8015 Air traffic control clearances

*Regulation (EU) 2024/1111*

- (a) Air traffic control clearances shall be based solely on the following requirements for providing air traffic control service:
  - (1) Clearances shall be issued solely for expediting and separating air traffic and be based on known traffic conditions which affect safety in aircraft operation. Such traffic conditions include not only aircraft in the air and on the manoeuvring area over which control is being exercised, but also any vehicular traffic or other obstructions not permanently installed on the manoeuvring area in use.
  - (2) ATC units shall issue such ATC clearances as necessary to prevent collisions and to expedite and maintain an orderly flow of air traffic.
  - (3) ATC clearances shall be issued early enough to ensure that they are transmitted to the aircraft in sufficient time for it to comply with them.

(b) Operation subject to clearance:

- (1) An air traffic control clearance shall be obtained prior to operating a controlled flight, or a portion of a flight as a controlled flight. Such clearance shall be requested through the submission of a flight plan to an air traffic control unit.
- (2) When a flight plan specifies that the initial portion of a flight will be uncontrolled, and that the subsequent portion of the flight will be subject to air traffic control service, the flight crew shall obtain the clearance from the appropriate air traffic control unit prior to entering the area where controlled flight will be commenced.
- (3) When a flight plan specifies that the initial portion of a flight will be subject to air traffic control service, and that the subsequent portion will be uncontrolled, the aircraft shall normally be cleared to the point at which the controlled flight terminates.
- (4) The pilot-in-command of an aircraft shall inform the air traffic control unit if an air traffic control clearance is not satisfactory. In such cases, the air traffic control unit will issue an amended clearance, if practicable.
- (5) Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.
- (6) Potential reclearance in flight. If, prior to departure, it is anticipated that, depending on fuel/energy endurance and subject to reclearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.
- (7) An aircraft operated on a controlled aerodrome shall not taxi on the manoeuvring area without clearance from the aerodrome control tower and shall comply with any instructions given by that unit.
- (8) When vectoring or assigning a direct routing not included in the flight plan, which takes an IFR flight off published ATS route or instrument procedure, an air traffic controller providing ATS surveillance service shall issue clearances such that the prescribed obstacle clearance exists at all times until the aircraft reaches the point where the pilot re-joins the flight plan route or joins a published ATS route or instrument procedure.

(c) Clearances for transonic flight

- (1) The air traffic control clearance relating to the transonic acceleration phase of a supersonic flight shall extend at least to the end of that phase.
- (2) The air traffic control clearance relating to the deceleration and descent of an aircraft from supersonic cruise to subsonic flight shall seek to provide for uninterrupted descent at least during the transonic phase.

(d) Contents of clearances

An air traffic control clearance shall indicate:

- (1) aircraft identification as shown in the flight plan;
- (2) clearance limit;

- 
- (3) route of flight:
    - (i) the route of flight shall be detailed in each clearance when deemed necessary;
    - (ii) the phrase “cleared flight planned route” shall not be used when granting a re-clearance;
  - (4) level or levels of flight for the entire route or part thereof and changes of levels if required;
  - (5) any necessary instructions or information on other matters, such as ATFM departure slot if applicable, approach or departure manoeuvres, communications and the time of expiry of the clearance.
- (e) Read back of clearances, instructions and safety-related information
- (1) The flight crew shall read back to the air traffic controller safety-related parts of ATC clearances and instructions which are transmitted by voice. The following items shall always be read back:
    - (i) ATC route clearances;
    - (ii) clearances and instructions to enter, land on, take off from, hold short of, cross, taxi and backtrack on any runway; and
    - (iii) runway-in-use, altimeter settings, SSR codes, newly assigned communication channels, level instructions, heading and speed instructions; and
    - (iv) transition levels, whether issued by the controller or contained in ATIS broadcasts.
  - (2) Other clearances or instructions, including conditional clearances and taxi instructions, shall be read back or acknowledged in a manner to clearly indicate that they have been understood and will be complied with.
  - (3) The controller shall listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and shall take immediate action to correct any discrepancies revealed by the read-back.
  - (4) Voice read-back of CPDLC messages shall not be required, unless otherwise specified by the ANSP.
  - (5) Vehicle drivers operating or intending to operate on the manoeuvring area shall read back to the air traffic controller safety-related parts of instructions which are transmitted by voice, e.g. instructions to enter, hold short of, cross and operate on any operational runway or taxiway.
  - (6) The controller shall listen to the read-back to ascertain that the instruction has been correctly acknowledged by the vehicle driver and shall take immediate action to correct any discrepancies revealed by the read-back.
- (ea) Changes in clearance regarding route or level
- (1) When issuing a clearance covering a requested change in route or level, the exact nature of the change shall be included in the clearance.
  - (2) When traffic conditions will not permit clearance of a requested change, the word ‘UNABLE’ shall be used. When warranted by circumstances, an alternative route or level shall be offered.

(eb) Clearance related to altimetry

- (1) For flights in areas where a transition altitude is established, the vertical position of the aircraft shall, except as provided for in (5) below, be expressed in terms of altitudes at or below the transition altitude and in terms of flight levels at or above the transition level. While passing through the transition layer, the vertical position shall be expressed in terms of flight levels when climbing and in terms of altitudes when descending.
- (2) The flight crew shall be provided with the transition level in due time prior to reaching it during descent.
- (3) Except when it is known that the aircraft has already received the information in a directed transmission, an QNH altimeter setting shall be included in:
  - (i) the descent clearance, when first cleared to an altitude below the transition level;
  - (ii) the approach clearance or the clearance to enter the traffic circuit;
  - (iii) the taxi clearance for departing aircraft.
- (4) A QFE altimeter setting shall be provided to aircraft on request or on a regular basis in accordance with local arrangements.
- (5) When an aircraft has been given clearance to land or where an aircraft has been informed that the runway is available for landing at AFIS aerodromes and that aircraft is completing its approach using atmospheric pressure at aerodrome elevation (QFE), the vertical position of that aircraft shall be expressed in terms of height above aerodrome elevation during that portion of its flight for which QFE may be used, except that it shall be expressed in terms of height above runway threshold elevation:
  - (i) for instrument runways if the threshold is 2 m (7 ft) or more below the aerodrome elevation; and
  - (ii) for precision approach runways.

(ec) Conditional clearances

Conditional phrases, such as 'behind landing aircraft' or 'after departing aircraft', shall not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot. The aircraft or vehicle causing the condition in the clearance issued shall be the first aircraft/vehicle to pass in front of the other aircraft concerned. In all cases, a conditional clearance shall be given in the following order and consist of:

- (1) the call sign;
- (2) the condition;
- (3) the clearance; and
- (4) a brief reiteration of the condition.

(f) Coordination of clearances

- (1) An air traffic control clearance shall be coordinated between air traffic control units to cover the entire route of an aircraft or a specified portion thereof as described in provisions (2) to (6).

- (2) An aircraft shall be cleared for the entire route to the aerodrome of first intended landing:
  - (i) when it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or
  - (ii) when there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.
- (3) When coordination as in (2) has not been achieved or is not anticipated, the aircraft shall be cleared only to that point where coordination is reasonably assured; prior to reaching such point, or at such point, the aircraft shall receive further clearance, holding instructions being issued as appropriate.
- (4) When prescribed by the ATS unit, aircraft shall contact a downstream air traffic control unit, for the purpose of receiving a downstream clearance prior to the transfer of control point.
  - (i) Aircraft shall maintain the necessary two-way communication with the current air traffic control unit whilst obtaining a downstream clearance.
  - (ii) A clearance issued as a downstream clearance shall be clearly identifiable as such to the pilot.
  - (iii) Unless coordinated, downstream clearances shall not affect the aircraft's original flight profile in any airspace, other than that of the air traffic control unit responsible for the delivery of the downstream clearance.
- (5) When an aircraft intends to depart from an aerodrome within a control area to enter another control area within a period of thirty minutes, or such other specific period of time as has been agreed between the area control centres concerned, coordination with the subsequent area control centre shall be effected prior to issuance of the departure clearance.
- (6) When an aircraft intends to leave a control area for flight outside controlled airspace, and will subsequently re-enter the same or another control area, a clearance from the point of departure to the aerodrome of first intended landing may be issued. Such clearance or revisions thereto shall apply only to those portions of the flight conducted within controlled airspace.

## GM1 SERA.8015(a) Air traffic control clearances

ED Decision 2016/023/R

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\(b\)](#).

## AMC1 SERA.8015(b)(1) Air traffic control clearances

ED Decision 2024/007/R

### HORIZONTAL SPEED CONTROL INSTRUCTIONS

Speed control instructions should remain in effect unless explicitly cancelled or amended by the air traffic controller.

**AMC2 SERA.8015(b)(1) Air traffic control clearances**

ED Decision 2024/007/R

**STANDARD INSTRUMENT DEPARTURE (SID) AND STANDARD INSTRUMENT ARRIVAL (STAR) SPEED RESTRICTIONS**

The flight crew should comply with published SID and STAR speed restrictions unless the restrictions are explicitly cancelled or amended by the air traffic controller.

**GM1 SERA.8015(b)(1) Air traffic control clearances**

ED Decision 2024/007/R

**HORIZONTAL SPEED CONTROL INSTRUCTIONS**

Cancellation of any speed control instruction does not relieve the flight crew of compliance with the speed limitations associated with airspace classifications as specified in [Appendix 4](#) 'ATS airspace classes — services provided and flight requirements' to the Annex to Commission Implementing Regulation (EU) No 923/2012.

**GM2 SERA.8015(b)(1) Air traffic control clearances**

ED Decision 2024/007/R

**STANDARD INSTRUMENT DEPARTURE (SID) AND STANDARD INSTRUMENT ARRIVAL (STAR) SPEED RESTRICTIONS**

Some SID and STAR speed restrictions ensure containment within RNAV departure or arrival procedure (e.g. maximum speed associated with a constant radius arc to a fix (RF) leg).

**GM1 SERA.8015(b)(6) Air traffic control clearances**

ED Decision 2024/007/R

**OPERATION SUBJECT TO CLEARANCE — POTENTIAL RECLEARANCE IN FLIGHT**

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

**GM1 SERA.8015(b)(8) Air traffic control clearances**

ED Decision 2024/007/R

**VECTERING TO PILOT-INTERPRETED FINAL APPROACH AID**

When clearance for the approach is issued, the aircraft is expected to maintain the last assigned level until intercepting the specified or nominal glide path of the approach procedure. If the air traffic controller requires an aircraft to intercept the glide path at a level other than a level flight segment depicted on the instrument approach chart, the air traffic controller should instruct the pilot to maintain the particular level until established on the glide path.

**GM1 SERA.8015(d)(3)(ii) Air traffic control clearances**

ED Decision 2024/007/R

**USE OF CERTAIN PHRASES IN A CLEARANCE**

The phrase 'cleared flight planned route' may be used to describe any route or portion thereof, provided that the route or portion thereof is identical to that filed in the flight plan and sufficient

routing details are given to definitely establish the aircraft on its route. The phrases ‘cleared (designation) departure’ or ‘cleared (designation) arrival’ may be used when standard departure or arrival routes have been established and published in AIPs.

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

ED Decision 2013/013/R

### CONTENT OF THE CLEARANCES — TIME OF EXPIRY

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

## GM1 SERA.8015(e)(1) ATC clearances

ED Decision 2020/007/R

### CHANGE IN CLEARANCE REGARDING THE ROUTE

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 rejoin the previous route, to the destination.

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

ED Decision 2013/013/R

### READ-BACK OF CPDLC MESSAGES

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

## GM1 SERA.8015(ec) Air traffic control clearances

ED Decision 2024/007/R

### 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.8015(f)(2) Air traffic control clearances

ED Decision 2016/023/R

### PROVISIONS FOR CLEARANCES AND INSTRUCTIONS — ALTIMETRY

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

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

ED Decision 2013/013/R

### COORDINATION OF CLEARANCES — DOWNSTREAM CLEARANCE

- (a) In such cases it is assumed that contact of a downstream ATC unit is initiated by the pilot. Therefore, the rules require that the aircraft maintain the necessary two-way communication with the current ATC unit.

- (b) In cases where an aircraft cannot maintain two-way communication whilst obtaining a downstream clearance, the pilot needs to seek the acceptance to leave momentarily the communication channel of the current ATC unit prior to contacting a downstream ATC unit.

## SERA.8020 Adherence to flight plan

Regulation (EU) 2024/1111

- (a) Except as provided for in (b) and (d) an aircraft shall adhere to the current flight plan or the applicable portion of a current flight plan submitted for a controlled flight unless a request for a change has been made and clearance obtained from the appropriate air traffic control unit, or unless an emergency situation arises which necessitates immediate action by the aircraft, in which event as soon as circumstances permit, after such emergency authority is exercised, the appropriate air traffic services unit shall be notified of the action taken and that this action has been taken under emergency authority.
- (1) Unless otherwise authorised by the competent authority, or directed by the appropriate air traffic control unit, controlled flights shall, in so far as practicable:
    - (i) when on an established ATS route, operate along the defined centre line of that route; or
    - (ii) when on any other route, operate directly between the navigation facilities and/or points defining that route.
  - (2) Unless otherwise authorised by the competent authority, or directed by the appropriate air traffic control unit, an aircraft operating along an ATS route segment defined by reference to very high frequency omnidirectional radio ranges shall change over for its primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the changeover point, where established.
  - (3) Deviation from the requirements in point (1) shall be notified to the appropriate ATS unit.
- (b) *Deviations from the current flight plan.* In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:
- (1) Deviation from track: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.
  - (2) Deviation from the air traffic control assigned Mach number/indicated airspeed: the appropriate air traffic services unit shall be informed immediately.
  - (3) Deviation from Mach number/true airspeed: if the sustained Mach number/true airspeed at cruising level varies by plus or minus Mach 0,02 or more, or plus or minus 19 km/h (10 kt) true airspeed or more from the current flight plan, the appropriate air traffic services unit shall be so informed.
  - (4) Change in time estimate: except where ADS-C is activated and serviceable in airspace where ADS-C services are provided, if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, changes in excess of 2 minutes from that previously notified to air traffic services, or such other period of time as is prescribed by the competent authority, the flight crew shall notify the appropriate air traffic services unit as soon as possible.
  - (5) Additionally, when an ADS-C agreement is in place, the air traffic services unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS-C event contract.

- (c) *Intended changes.* Requests for flight plan changes shall include information as indicated hereunder:
- (1) Change of cruising level: aircraft identification; requested new cruising level and cruising speed at this level, revised time estimates (when applicable) at subsequent flight information region boundaries.
  - (2) Change of route:
    - (i) *Destination unchanged:* aircraft identification; flight rules; description of new route of flight including related flight plan data beginning with the position from which requested change of route is to commence; revised time estimates; any other pertinent information.
    - (ii) *Destination changed:* aircraft identification; flight rules; description of revised route of flight to revised destination aerodrome including related flight plan data, beginning with the position from which requested change of route is to commence; revised time estimates; alternate aerodrome(s); any other pertinent information.
  - (3) Change of Mach number/true airspeed: aircraft identification; requested Mach number/true airspeed.
- (d) *Weather deterioration below the VMC.* When it becomes evident that flight in VMC in accordance with its current flight plan will not be practicable, a VFR flight operated as a controlled flight shall:
- (1) request an amended clearance enabling the aircraft to continue in VMC to destination or to an alternative aerodrome or operating site, or to leave the airspace within which an ATC clearance is required; or
  - (2) if no clearance in accordance with point (1) can be obtained, continue to operate in VMC and notify the appropriate ATC unit of the action being taken either to leave the airspace concerned or to land at the nearest suitable aerodrome or operating site; or
  - (3) if operated within a control zone, request authorisation to operate as a special VFR flight; or
  - (4) request clearance to operate in accordance with the instrument flight rules.

## AMC1 SERA.8020(b) Adherence to current flight plan

ED Decision 2024/007/R

### ADHERENCE TO THE TRUE MACH NUMBER

- (a) Aircraft subject to the Mach number technique should adhere to the true Mach number approved by ATC and should request ATC approval before making any changes thereto. If it is essential to make an immediate temporary change in the Mach number (e.g. due to turbulence), ATC should be notified as soon as possible that such a change has been made.
- (b) If it is not feasible, due to aircraft performance, to maintain the last assigned Mach number during en-route climbs and descents, pilots of the aircraft concerned should advise ATC at the time of the climb/descent request.

## SERA.8025 Position reports

Regulation (EU) 2024/404

- (a) Unless exempted by the competent authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the competent authority or specified by the appropriate air traffic services unit.
- (1) Controlled flights providing position information to the appropriate air traffic services unit via data link communications shall only provide voice position reports when requested.
  - (2) When a controlled flight has been exempted from the requirement to report at compulsory reporting points, pilots shall, unless automated position reporting is in effect, resume voice or CPDLC position reporting:
    - (i) when so instructed;
    - (ii) when advised that the ATS surveillance service has been terminated; or
    - (iii) when advised that the ATS surveillance identification is lost.
- (b) With due regard to requirements in [SERA.14065](#) for communications change over, the position report shall contain the following elements:
- (1) aircraft identification;
  - (2) position;
  - (3) time;
  - (4) speed, if assigned by ATC; and
  - (5) other elements as instructed by ATC.
- (c) The elements described in point (b) shall be reported as described in point 2 of Point A of [Appendix 5](#).

## AMC1 SERA.8025(a) Position reports

ED Decision 2024/007/R

### TRANSMISSION OF POSITION REPORTS

- (a) In the absence of designated reporting points, position reports should be made by the aircraft as soon as possible after the first half hour of the flight and at hourly intervals thereafter.
- (b) Under conditions specified by the competent authority, flights may be exempted from the requirement to make position reports at each designated compulsory reporting point or interval. In applying this, account should be taken of the meteorological requirement for the making and reporting of routine aircraft observations.

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

ED Decision 2016/023/R

### 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).

## SERA.8030 Termination of control

Regulation (EU) No 923/2012

A controlled flight shall, except when landing at a controlled aerodrome, advise the appropriate ATC unit as soon as it ceases to be subject to air traffic control service.

## SERA.8035 Communications

Regulation (EU) 2024/404

- (a) An aircraft operated as a controlled flight shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and establish two-way communication as necessary with, the appropriate air traffic control unit, except as may be prescribed by the relevant ANSP in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.
  - (1) The requirement for an aircraft to maintain an air-ground voice communication watch shall remain in effect when CPDLC has been established.
- (b) If a communication failure precludes compliance with point (a), the procedures on communication failures shall be followed, as specified in [SERA.14083](#).

## GM1 SERA.8035(a) Communications

ED Decision 2013/013/R

### GENERAL

- (a) In a HF environment, SELCAL or similar automatic signalling devices satisfy the requirement to maintain an air-ground voice communication watch.
- (b) An aircraft may be permitted to communicate temporarily with a control unit other than the unit controlling the aircraft.

## AMC1 SERA.8035 Communications

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### 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

### SERA.9001 Application

*Regulation (EU) No 923/2012*

- (a) Flight information service shall be provided by the appropriate air traffic services units to all aircraft which are likely to be affected by the information and which are:
  - (1) provided with air traffic control service; or
  - (2) otherwise known to the relevant air traffic services units.
- (b) The reception of flight information service does not relieve the pilot-in-command of an aircraft of any responsibilities and the pilot-in-command shall make the final decision regarding any suggested alteration of flight plan.
- (c) Where air traffic services units provide both flight information service and air traffic control service, the provision of air traffic control service shall have precedence over the provision of flight information service whenever the provision of air traffic control service so requires.

### SERA.9005 Scope of flight information service

*Regulation (EU) 2024/1111*

- (a) Flight information service shall include the provision of pertinent:
  - (1) SIGMET and AIRMET information;
  - (2) information concerning pre-eruption volcanic activity, volcanic eruptions and volcanic ash clouds;
  - (3) information concerning the release into the atmosphere of radioactive materials or toxic chemicals;
  - (4) information on changes in the availability of radio navigation services;
  - (5) information on changes in condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by snow, ice or significant depth of water;
  - (6) information on unmanned free balloons;
  - (7) information on abnormal aircraft configuration and condition;
  - (7a) information on unmanned aircraft;
  - (8) any other information likely to affect safety.
- (b) Flight information service provided to flights shall include, in addition to that outlined in (a), the provision of information concerning:
  - (1) weather conditions reported or forecast at departure, destination and alternate aerodromes;
  - (2) collision hazards, to aircraft operating in airspace Classes C, D, E, F and G;
  - (3) for flight over water areas, in so far as practicable and when requested by a pilot, any available information such as radio call sign, position, true track, speed, etc. of surface vessels in the area; and

- (4) messages, including clearances, received from other air traffic services units to relay to aircraft.
- (c) Flight information service provided to VFR flights shall include, in addition to that outlined in (a), the provision of available information concerning traffic and weather conditions along the route of flight that are likely to make operation under the visual flight rules impracticable.
- (d) AFIS provided to flights shall include, in addition to relevant items outlined in points (a) and (b), the provision of the information concerning:
  - (1) collision hazards with aircraft, vehicles and persons operating on the manoeuvring area;
  - (2) the runway-in-use.

## GM1 SERA.9005(a)(8) Scope of flight information service

*ED Decision 2020/007/R*

### INFORMATION ON SPACE WEATHER

When available, information on space weather phenomena that have an impact on high-frequency radio communications, communications via satellite, GNSS-based navigation and surveillance systems, and/or pose a radiation risk to aircraft occupants at flight levels within the area of responsibility of the ATS unit should be transmitted to the affected aircraft.

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

*ED Decision 2016/023/R*

### 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.

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

*ED Decision 2013/013/R*

### INFORMATION RELATED TO COLLISION HAZARDS

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

## SERA.9010 Automatic terminal information service (ATIS)

*Regulation (EU) 2024/404*

- (a) Use of the ATIS messages in directed request/reply transmissions
  - (1) When requested by the pilot, the applicable ATIS message(s) shall be transmitted by the appropriate air traffic services unit.

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- (2) Whenever Voice-ATIS and/or D-ATIS is provided:
- (i) aircraft shall acknowledge receipt of the information upon establishing communication with the ATS unit providing approach control service, the aerodrome control tower or Aerodrome Flight Information Service (AFIS), as appropriate; and
  - (ii) the appropriate air traffic services unit shall, when replying to an aircraft acknowledging receipt of an ATIS message or, in the case of arriving aircraft, at such other time as may be prescribed by the competent authority, provide the aircraft with the current altimeter setting.
- (3) Information contained in a current ATIS, the receipt of which has been acknowledged by the aircraft concerned, need not be included in a directed transmission to the aircraft, with the exception of the altimeter setting, which shall be provided in accordance with (2).
- (4) If an aircraft acknowledges receipt of an ATIS that is no longer current, the ATS unit shall without delay take one of the following actions:
- (i) communicate to the aircraft any element of information which has to be updated;
  - (ii) instruct the aircraft to obtain the current ATIS information.
- (b) ATIS for arriving and departing aircraft
- ATIS messages containing both arrival and departure information shall contain the following elements of information in the order listed:
- (1) name of aerodrome;
  - (2) arrival and/or departure indicator;
  - (3) contract type, if communication is via D-ATIS;
  - (4) designator;
  - (5) time of observation, if appropriate;
  - (6) type of approach(es) to be expected;
  - (7) the runway(s) in use; status of arresting system constituting a potential hazard, if any;
  - (8) runway surface conditions;
  - (9) holding delay, if appropriate;
  - (10) transition level, if applicable;
  - (11) other essential operational information;
  - (12) surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by aircraft operators, the indication of the runway and the section of the runway to which the information refers;
  - (13) visibility and, when applicable, RVR<sup>1</sup> and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by

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<sup>1</sup> These elements are replaced by the term 'CAVOK' when the following conditions occur simultaneously at the time of observation: (a) visibility: 10 km or more, and the lowest visibility not reported; (b) no cloud of operational significance; and (c) no weather of significance to aviation.

operators, the indication of the runway and the section of the runway to which the information refers;

- (14) present weather<sup>1</sup>;
- (15) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available<sup>1</sup>;
- (16) air temperature;
- (17) dew point temperature;
- (18) altimeter setting(s);
- (19) any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;
- (20) trend forecast, when available; and
- (21) specific ATIS instructions.

(c) ATIS for arriving aircraft

ATIS messages containing arrival information only shall contain the following elements of information in the order listed:

- (1) name of aerodrome;
- (2) arrival indicator;
- (3) contract type, if communication is via D-ATIS;
- (4) designator;
- (5) time of observation, if appropriate;
- (6) type of approach(es) to be expected;
- (7) main landing runway(s); status of arresting system constituting a potential hazard, if any;
- (8) runway surface conditions;
- (9) holding delay, if appropriate;
- (10) transition level, if applicable;
- (11) other essential operational information;
- (12) surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by aircraft operators, the indication of the runway and the section of the runway to which the information refers;
- (13) visibility and, when applicable, RVR<sup>1</sup> and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;

- (14) present weather<sup>1</sup>;
  - (15) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available<sup>1</sup>;
  - (16) air temperature;
  - (17) dew point temperature;
  - (18) altimeter setting(s);
  - (19) any available information on significant meteorological phenomena in the approach area including wind shear, and information on recent weather of operational significance;
  - (20) trend forecast, when available; and
  - (21) specific ATIS instructions.
- (d) ATIS for departing aircraft
- ATIS messages containing departure information only shall contain the following elements of information in the order listed:
- (1) name of aerodrome;
  - (2) departure indicator;
  - (3) contract type, if communication is via D-ATIS;
  - (4) designator;
  - (5) time of observation, if appropriate;
  - (6) runway(s) to be used for take-off; status of arresting system constituting a potential hazard, if any;
  - (7) surface conditions of runway(s) to be used for take-off;
  - (8) departure delay, if appropriate;
  - (9) transition level, if applicable;
  - (10) other essential operational information;
  - (11) surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by aircraft operators, the indication of the runway and the section of the runway to which the information refers;
  - (12) visibility and, when applicable RVR<sup>1</sup> and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
  - (13) present weather<sup>1</sup>;

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<sup>1</sup> These elements are replaced by the term 'CAVOK' when the following conditions occur simultaneously at the time of observation: (a) visibility: 10 km or more, and the lowest visibility not reported; (b) no cloud of operational significance; and (c) no weather of significance to aviation.

- (14) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available<sup>1</sup>;
- (15) air temperature;
- (16) dew point temperature;
- (17) altimeter setting(s);
- (18) any available information on significant meteorological phenomena in the climb-out area including wind shear;
- (19) trend forecast, when available; and
- (20) specific ATIS instructions.

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<sup>1</sup> These elements are replaced by the term 'CAVOK' when the following conditions occur simultaneously at the time of observation: (a) visibility: 10 km or more, and the lowest visibility not reported; (b) no cloud of operational significance; and (c) no weather of significance to aviation.

## SECTION 10 ALERTING SERVICE

### SERA.10001 Application

*Regulation (EU) 2016/1185*

- (a) Alerting service shall be provided by the air traffic services units:
  - (1) for all aircraft provided with air traffic control service;
  - (2) in so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and
  - (3) to any aircraft known or believed to be the subject of unlawful interference.
- (b) Unless otherwise prescribed by the competent authority, aircraft equipped with suitable two-way radio-communications shall report during the period 20 to 40 minutes following the time of the last contact, whatever the purpose of such contact, merely to indicate that the flight is progressing according to plan, such report to comprise identification of the aircraft and the words 'Operations normal'.
- (c) The 'Operations normal' message shall be transmitted air-ground to an appropriate ATS unit.

### GM1 SERA.10001 Application

*ED Decision 2024/007/R*

#### ALERTING SERVICE — PROMULGATION OF NOTAMs FOR SEARCH AND RESCUE OPERATIONS

It may be advisable, in case of a search and rescue operation of a substantial duration, to promulgate by NOTAM the lateral and vertical limits of the area of a search and rescue action, and to warn aircraft not engaged in actual search and rescue operations and not controlled by air traffic control service to avoid such areas unless otherwise authorised by the appropriate air traffic services unit.

### GM1 SERA.10001(b) Application

*ED Decision 2016/023/R*

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'.

### SERA.10005 Information to aircraft operating in the vicinity of an aircraft in a state of emergency

*Regulation (EU) No 923/2012*

- (a) When it has been established by an air traffic services unit that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved shall, except as provided in (b), be informed of the nature of the emergency as soon as practicable.
- (b) When an air traffic services unit knows or believes that an aircraft is being subjected to unlawful interference, no reference shall be made in ATS air-ground communications to the nature of the emergency unless it has first been referred to in communications from the aircraft involved and it is certain that such reference will not aggravate the situation.

## SECTION 11 INTERFERENCE, EMERGENCY CONTINGENCIES AND INTERCEPTION

### SERA.11001 General

*Regulation (EU) 2016/1185*

- (a) [Deleted.]
- (b) [Deleted.]
- (c) In case of an aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference, ATS units shall give the aircraft maximum consideration, assistance and priority over other aircraft, as may be necessitated by the circumstances.
- (d) Subsequent ATC actions shall be based on the intentions of the pilot, the overall air traffic situation and the real-time dynamics of the contingency.

### GM1 SERA.11001 General

*ED Decision 2024/007/R*

#### EMERGENCY DESCENT PROCEDURES

- (a) When an aircraft experiences sudden decompression or a malfunction requiring an emergency descent, the pilot should take the following steps as soon as practicable in the order appropriate for the circumstance:
  - (1) navigate as deemed appropriate by the pilot;
  - (2) advise the appropriate ATS unit of the emergency descent and, if able, intentions;
  - (3) set transponder to Code 7700 and, if applicable, select the appropriate emergency mode on the automatic dependent surveillance – broadcast and/or automatic dependent surveillance – contract (ADS-B/ADS-C);
  - (4) turn on aircraft exterior lights (commensurate with appropriate operating limitations);
  - (5) watch for conflicting traffic both visually and by reference to airborne collision avoidance system (ACAS) (if equipped); and
  - (6) when emergency descent is complete, coordinate further intentions with the appropriate ATS unit.
- (b) The aircraft should not 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) Upon recognition that an aircraft is making an emergency descent, all appropriate actions should be taken immediately by the air traffic services unit to safeguard all aircraft concerned. Appropriate actions may include the following, in the order appropriate for the circumstance:
  - (1) broadcasting an emergency message;
  - (2) issuing traffic information and/or instructions to aircraft affected by the descent;
  - (3) advising the minimum flight altitude and altimeter setting for the area of operation; and

- (4) informing any other air traffic services units that may be affected by the emergency descent.
- (d) Unless specifically instructed by the air traffic services unit to clear the area or threatened by immediate danger, the pilot of an aircraft receiving emergency descent broadcast should take the following actions:
  - (1) continue according to current clearance and maintain listening watch on the frequency in use for any further instructions from the air traffic services unit; and
  - (2) watch for conflicting traffic both visually and by reference to ACAS (if equipped).

## SERA.11005 Unlawful interference

*Regulation (EU) 2024/1111*

- (a) [Deleted.]
- (aa) An aircraft which is being subjected to unlawful interference shall endeavour to set the transponder to Code 7500 and notify the appropriate ATS unit of any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimise conflict with other aircraft.
- (ab) If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or operating site or at a dedicated aerodrome or operating site assigned by the competent authority, unless considerations aboard the aircraft dictate otherwise.
- (b) When an occurrence of unlawful interference with an aircraft takes place or is suspected, air traffic services units shall attend promptly to requests by the aircraft. Information pertinent to the safe conduct of the flight shall continue to be transmitted and necessary action shall be taken to expedite the conduct of all phases of the flight, especially the safe landing of the aircraft.
- (c) When an occurrence of unlawful interference with an aircraft takes place or is suspected, ATS units shall, in accordance with locally agreed procedures, immediately inform the appropriate authority designated by the State and exchange necessary information with the aircraft operator or its designated representative.

## AMC1 SERA.11005 Unlawful interference

*ED Decision 2016/023/R*

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

ATS units should also:

  - (1) transmit, and continue to transmit, information pertinent to the safe conduct of the flight, without expecting a reply from the aircraft;

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

selected with a view to minimising any security risks to the public, other aircraft and installations at the aerodrome.

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

*ED Decision 2016/023/R*

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

## **GM1 SERA.11005 Unlawful interference**

*ED Decision 2016/023/R*

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.

## **SERA.11010 Strayed or unidentified aircraft**

*Regulation (EU) 2016/1185*

- (a) As soon as an air traffic services unit becomes aware of a strayed aircraft it shall take all necessary steps as outlined in (1) and (3) to assist the aircraft and to safeguard its flight.
  - (1) If the aircraft's position is not known, the air traffic services unit shall:
    - (i) attempt to establish two-way communication with the aircraft, unless such communication already exists;
    - (ii) use all available means to determine its position;

- (iii) inform other air traffic services units into whose area the aircraft may have strayed or may stray, taking into account all the factors which may have affected the navigation of the aircraft in the circumstances;
  - (iv) inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning strayed aircraft;
  - (v) request from the units referred to in (iii) and (iv) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.
- (2) The requirements in (1)(iv) and (1)(v) shall apply also to air traffic services units informed in accordance with (1)(iii).
- (3) When the aircraft's position is established, the air traffic services unit shall:
  - (i) advise the aircraft of its position and the corrective action to be taken. This advice shall be immediately provided when the ATS unit is aware that there is a possibility of interception or other hazard to the safety of the aircraft; and
  - (ii) provide, as necessary, other air traffic services units and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.
- (b) As soon as an air traffic services unit becomes aware of an unidentified aircraft in its area, it shall endeavour to establish the identity of the aircraft whenever this is necessary for the provision of air traffic services or required by the appropriate military authorities in accordance with locally agreed procedures. To this end, the air traffic services unit shall take such of the following steps as are appropriate in the circumstances:
  - (1) attempt to establish two-way communication with the aircraft;
  - (2) inquire of other air traffic services units within the flight information region about the flight and request their assistance in establishing two-way communication with the aircraft;
  - (3) inquire of air traffic services units serving the adjacent flight information regions about the flight and request their assistance in establishing two-way communication with the aircraft;
  - (4) attempt to obtain information from other aircraft in the area;
  - (5) the air traffic services unit shall, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.
- (c) In the case of a strayed or unidentified aircraft, the possibility of the aircraft being subject of unlawful interference shall be taken into account. Should the air traffic services unit consider that a strayed or unidentified aircraft may be the subject of unlawful interference, the appropriate authority designated by the State shall immediately be informed, in accordance with locally agreed procedures.

## GM1 SERA.11010 Strayed or unidentified aircraft

ED Decision 2013/013/R

### GENERAL

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

## SERA.11012 Minimum Fuel/Energy and Fuel/Energy Emergency

Regulation (EU) 2024/1111

- (a) When a pilot reports a state of minimum fuel/energy, the controller shall inform the pilot as soon as practicable of any anticipated delays or that no delays are expected.
- (b) When the level of fuel/energy renders declaring a situation of distress necessary, the pilot, in accordance with point [SERA.14095](#), shall indicate that by using the radiotelephony distress signal (MAYDAY), preferably spoken three times, followed by the nature of the distress condition (FUEL).

## GM1 SERA.11012 Minimum fuel/energy and fuel/energy emergency

ED Decision 2025/012/R

The declaration by the pilot of minimum fuel/energy using the phrase '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 the planned final reserve fuel/energy. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

## SERA.11013 Degraded aircraft performance

Regulation (EU) 2016/1185

- (a) Whenever, as a result of failure or degradation of navigation, communications, altimetry, flight control or other systems, aircraft performance is degraded below the level required for the airspace in which it is operating, the flight crew shall advise the ATC unit concerned without delay. Where the failure or degradation affects the separation minimum currently being employed, the controller shall take action to establish another appropriate type of separation or separation minimum.
- (b) Degradation or failure of the RNAV system  
  
When an aircraft cannot meet the specifications as required by the RNAV route or procedure, as a result of a failure or degradation of the RNAV system, a revised clearance shall be requested by the pilot.

- 
- (c) Loss of vertical navigation performance required for reduced vertical separation minima (RVSM) airspace
- (1) The pilot shall inform ATC as soon as possible of any circumstances where the vertical navigation performance requirements for RVSM airspace cannot be maintained. In such cases, the pilot shall obtain a revised ATC clearance prior to initiating any deviation from the cleared route and/or flight level, whenever possible. When a revised ATC clearance cannot be obtained prior to such a deviation, the pilot shall obtain a revised clearance as soon as possible thereafter.
  - (2) During operations in, or vertical transit through, RVSM airspace with aircraft not approved for RVSM operations, pilots shall report non-approved status as follows:
    - (i) at initial call on any channel within RVSM airspace;
    - (ii) in all requests for level changes; and
    - (iii) in all read-backs of level clearances.
  - (3) Air traffic controllers shall explicitly acknowledge receipt of messages from aircraft reporting RVSM non-approved status.
  - (4) Degradation of aircraft equipment — pilot-reported:
    - (i) When informed by the pilot of an RVSM-approved aircraft operating in RVSM airspace that the aircraft's equipment no longer meets the RVSM requirements, ATC shall consider the aircraft as non-RVSM-approved.
    - (ii) ATC shall take action immediately to provide a minimum vertical separation of 600 m (2 000 ft) or an appropriate horizontal separation from all other aircraft concerned that are operating in RVSM airspace. An aircraft rendered non-RVSM-approved shall normally be cleared out of RVSM airspace by ATC when it is possible to do so.
    - (iii) Pilots shall inform ATC, as soon as practicable, of any restoration of the proper functioning of equipment required to meet the RVSM requirements.
    - (iv) The first ACC to become aware of a change in an aircraft's RVSM status shall coordinate with adjacent ACCs, as appropriate.
  - (5) Severe turbulence — not forecast:
    - (i) When an aircraft operating in RVSM airspace encounters severe turbulence due to weather or wake vortex that the pilot believes will impact the aircraft's capability to maintain its cleared flight level, the pilot shall inform ATC. ATC shall establish either an appropriate horizontal separation or an increased minimum vertical separation.
    - (ii) ATC shall, to the extent possible, accommodate pilot requests for flight level and/or route changes and shall pass on traffic information, as required.
    - (iii) ATC shall solicit reports from other aircraft to determine whether RVSM should be suspended entirely or within a specific flight level band and/or area.
    - (iv) The ACC suspending RVSM shall coordinate with adjacent ACCs such suspension(s) and any required adjustments to sector capacities, as appropriate, to ensure an orderly progression of the transfer of traffic.

(6) Severe turbulence — forecast:

- (i) When a meteorological forecast is predicting severe turbulence within RVSM airspace, ATC shall determine whether RVSM should be suspended and, if so, for how long and for which specific flight level(s) and/or area.
- (ii) In cases where RVSM will be suspended, the ACC suspending RVSM shall coordinate with adjacent ACCs with regard to the flight levels appropriate for the transfer of traffic, unless a contingency flight level allocation scheme has been determined by letter of agreement. The ACC suspending RVSM shall also coordinate applicable sector capacities with adjacent ACCs, as appropriate.

## GM1 SERA.11013(b) Degraded aircraft performance

ED Decision 2016/023/R

### 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**

ED Decision 2016/023/R

**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.

**SERA.11014 ACAS resolution advisory (RA)**

Regulation (EU) 2016/1185

- (a) ACAS II shall be used during flight, except as provided in the minimum equipment list specified in Commission Regulation (EU) No 965/2012<sup>1</sup> in a mode that enables RA indications to be produced for the flight crew when undue proximity to another aircraft is detected. This shall not apply if inhibition of RA indication mode (using traffic advisory (TA) indication only or equivalent) is called for by an abnormal procedure or due to performance-limiting conditions.
- (b) In the event of an ACAS RA, pilots shall:
  - (1) respond immediately by following the RA, as indicated, unless doing so would jeopardise the safety of the aircraft;
  - (2) follow the RA even if there is a conflict between the RA and an ATC instruction to manoeuvre;
  - (3) not manoeuvre in the opposite sense to an RA;
  - (4) as soon as possible, as permitted by flight crew workload, notify the appropriate ATC unit of any RA which requires a deviation from the current ATC instruction or clearance;
  - (5) promptly comply with any modified RAs;
  - (6) limit the alterations of the flight path to the minimum extent necessary to comply with the RAs;
  - (7) promptly return to the terms of the ATC instruction or clearance when the conflict is resolved; and
  - (8) notify ATC when returning to the current clearance.
- (c) When a pilot reports an ACAS RA, the controller shall not attempt to modify the aircraft flight path until the pilot reports 'CLEAR OF CONFLICT'.
- (d) Once an aircraft departs from its ATC clearance or instruction in compliance with an RA, or a pilot reports an RA, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the manoeuvre induced by the RA. The controller shall resume responsibility for providing separation to all the affected aircraft when:
  - (1) the controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance; or

<sup>1</sup> Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1).

- (2) the controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.

### GM1 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

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)

ED Decision 2016/023/R

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)

ED Decision 2016/023/R

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

### GM4 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

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)

ED Decision 2016/023/R

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)

ED Decision 2016/023/R

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)

ED Decision 2016/023/R

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.

## SERA.11015 Interception

Regulation (EU) 2024/1111

- (a) Except for intercept and escort service provided on request to an aircraft, interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Member States in compliance with the Convention on International Civil Aviation, and in particular [Article 3\(d\)](#) under which ICAO Contracting States undertake, when issuing regulations for their State aircraft, to have due regard for the safety of navigation of civil aircraft.
- (b) The pilot-in-command of a civil aircraft, when intercepted, shall:
  - (1) immediately follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Tables S11-1 and S11-2;
  - (2) notify, if possible, the appropriate air traffic services unit;
  - (3) attempt to establish radio-communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121,5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz,
  - (4) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit;
  - (5) if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.

Table S11-1

Signals initiated by intercepting aircraft and responses by intercepted aircraft

| Series | INTERCEPTING Aircraft Signals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Meaning                                  | INTERCEPTED Aircraft Responds                                                                       | Meaning                  |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------|
| 1      | DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left (or to the right in the case of a helicopter) on the desired heading.<br>Note 1<br>Meteorological conditions or terrain may require the intercepting aircraft | You have been intercepted.<br>Follow me. | DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following. | Understood, will comply. |

**Table S11-1**
**Signals initiated by intercepting aircraft and responses by intercepted aircraft**

| Series | INTERCEPTING Aircraft Signals                                                                                                                                                                                                                                                                                                                                                                                                  | Meaning                 | INTERCEPTED Aircraft Responds                                                                                                                                                                                                                                            | Meaning                  |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|        | to reverse the positions and direction of turn given above in Series 1.<br>Note 2<br>If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.                                                                                                                 |                         |                                                                                                                                                                                                                                                                          |                          |
| 2      | DAY or NIGHT — An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.                                                                                                                                                                                                                                | You may proceed.        | DAY or NIGHT — Rocking the aircraft.                                                                                                                                                                                                                                     | Understood, will comply. |
| 3      | DAY or NIGHT – Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter / VTOL-capable aircraft, overflying the helicopter / VTOL-capable aircraft landing area. In the case of helicopters / VTOL-capable aircraft, the intercepting helicopter / VTOL-capable aircraft makes a landing approach, coming to hover near the landing area. | Land at this aerodrome. | DAY or NIGHT – Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter / VTOL-capable aircraft landing area, landing is considered safe, proceeding to land. | Understood, will comply. |

**Table S11-2**
**Signals initiated by intercepted aircraft and responses by intercepting aircraft**

| Series | INTERCEPTED Aircraft Signals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Meaning                                      | INTERCEPTING Aircraft Responds                                                                                                                                                                                                                                                                                                                              | Meaning                                                    |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| 4      | DAY or NIGHT – Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter / VTOL-capable aircraft landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter / VTOL-capable aircraft landing area. If unable to flash landing lights, flash any other lights available. | Aerodrome you have designated is inadequate. | DAY or NIGHT – If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft.<br><br>If it is decided to release the intercepted aircraft, the intercepting aircraft uses the | Understood, follow me.<br><br>Understood, you may proceed. |

| Table S11-2                                                                      |                                                                                                                                  |                |                                                                           |             |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------|-------------|
| Signals initiated by intercepted aircraft and responses by intercepting aircraft |                                                                                                                                  |                |                                                                           |             |
| Series                                                                           | INTERCEPTED Aircraft Signals                                                                                                     | Meaning        | INTERCEPTING Aircraft Responds                                            | Meaning     |
|                                                                                  |                                                                                                                                  |                | Series 2 signals prescribed for intercepting aircraft.                    |             |
| 5                                                                                | DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights. | Cannot comply. | DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft. | Understood. |
| 6                                                                                | DAY or NIGHT — Irregular flashing of all available lights.                                                                       | In distress.   | DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft. | Understood. |

- (c) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.
- (d) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.
- (e) If radio contact is established during interception but communication in a common language is not possible, attempts shall 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:

| Table S11-3                              |                            |                         |                                         |                              |                             |
|------------------------------------------|----------------------------|-------------------------|-----------------------------------------|------------------------------|-----------------------------|
| Phrases for use by INTERCEPTING aircraft |                            |                         | Phrases for use by INTERCEPTED aircraft |                              |                             |
| Phrase                                   | Pronunciation <sup>1</sup> | Meaning                 | Phrase                                  | Pronunciation <sup>1</sup>   | Meaning                     |
| CALL SIGN                                | <u>KOL</u> SA-IN           | What is your call sign? | CALL SIGN (call sign) <sup>2</sup>      | <u>KOL</u> SA-IN (call sign) | My call sign is (call sign) |
| FOLLOW                                   | <u>FOL</u> -LO             | Follow me               | WILCO                                   | <u>VILL</u> -KO              | Understood, will comply     |
| DESCEND                                  | DEE- <u>SEND</u>           | Descend for landing     | ---                                     |                              |                             |
|                                          |                            |                         | CAN NOT                                 | <u>KANN</u> NOTT             | Unable to comply            |
| YOU LAND                                 | <u>YOU</u> <u>LAAND</u>    | Land at this aerodrome  | REPEAT                                  | REE- <u>PEET</u>             | Repeat your instruction     |
|                                          |                            |                         | AM LOST                                 | <u>AM</u> <u>LOSST</u>       | Position unknown            |
| PROCEED                                  | PRO- <u>SEED</u>           | You may proceed         |                                         |                              |                             |
|                                          |                            |                         | MAYDAY                                  | MAYDAY                       | I am in distress            |
|                                          |                            |                         | HIJACK <sup>3</sup>                     | <u>HI-JACK</u>               | I have been hijacked        |

<sup>1</sup> In the second column, syllables to be emphasised are underlined.

<sup>2</sup> The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.

<sup>3</sup> Circumstances may not always permit, nor make desirable, the use of the phrase 'HIJACK'.

Table S11-3

| Phrases for use by INTERCEPTING aircraft |                            |         | Phrases for use by INTERCEPTED aircraft |                            |                                      |
|------------------------------------------|----------------------------|---------|-----------------------------------------|----------------------------|--------------------------------------|
| Phrase                                   | Pronunciation <sup>1</sup> | Meaning | Phrase                                  | Pronunciation <sup>1</sup> | Meaning                              |
|                                          |                            |         | LAND<br>(place name)                    | LAAND<br>(place name)      | I request to land at<br>(place name) |
|                                          |                            |         | DESCEND                                 | DEE-SEND                   | I require descent                    |

- (f) As soon as an air traffic services unit learns that an aircraft is being intercepted in its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:
- (1) attempt to establish two-way communication with the intercepted aircraft via any means available, including the emergency radio frequency 121,5 MHz, unless such communication already exists,
  - (2) inform the pilot of the intercepted aircraft of the interception;
  - (3) establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
  - (4) relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;
  - (5) in close coordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft;
  - (6) inform air traffic services units serving adjacent flight information regions if it appears that the aircraft has strayed from such adjacent flight information regions.
- (g) As soon as an air traffic services unit learns that an aircraft is being intercepted outside its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:
- (1) inform the air traffic services unit serving the airspace in which the interception is taking place, providing this unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with (f);
  - (2) relay messages between the intercepted aircraft and the appropriate air traffic services unit, the intercept control unit or the intercepting aircraft.

## GM1 SERA.11015 Interception

ED Decision 2016/023/R

### 1. General

- 1.1 Interception of civil aircraft should be avoided and should be undertaken only as a last resort. If undertaken, the interception should be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome. Practice interception of civil aircraft is not to be undertaken unless prior agreement has been reached to conduct such activity with the pilot and operator of the civil aircraft concerned.

- 1.2 To eliminate or reduce the need for interception of civil aircraft, it is important that:
- (a) all possible efforts be made by intercept control units to secure identification of any aircraft which may be a civil aircraft, and to issue any necessary instructions or advice to such aircraft, through the appropriate ATS units. To this end, it is essential that means of rapid and reliable communications between intercept control units and ATS units be established and that agreements be formulated concerning exchanges of information between such units on the movements of civil aircraft, in accordance with the provisions of [SERA.4001\(b\)\(4\)](#), [SERA.11010\(a\)\(1\)\(iv\)](#), [SERA.11010\(a\)\(3\)\(ii\)](#), [SERA.11010\(b\)](#), and [SERA.11010\(b\)\(5\)](#);
  - (b) areas prohibited to all civil flights and areas in which civil flight is not permitted without special authorisation by the State be clearly promulgated in the AIP together with the risk, if any, of interception in the event of penetration of such areas. When delineating such areas in close proximity to promulgated ATS routes, or other frequently used tracks, account should be taken of the availability and overall systems accuracy of the navigation systems to be used by civil aircraft and their ability to remain clear of the delineated areas;
  - (c) the establishment of additional navigation aids be considered where necessary to ensure that civil aircraft are able to safely circumnavigate prohibited or, as required, restricted areas.
- 1.3 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure coordinated actions by the pilots and ground units concerned. To this end, it is essential that steps be taken to ensure that:
- (a) all pilots of civil aircraft are made fully aware of the actions to be taken by them and the visual signals to be used;
  - (b) operators or pilots-in-command of civil aircraft implement the capability of aircraft to communicate on 121,5 MHz and the availability of interception procedures and visual signals on board aircraft,
  - (c) all ATS personnel are made fully aware of the actions to be taken by them in accordance with the provisions of [SERA.4001\(b\)\(4\)](#), [SERA.11010\(a\)\(1\)\(iv\)](#), [SERA.11010\(a\)\(3\)\(ii\)](#), [SERA.11010\(b\)](#) and [SERA.11010\(b\)\(5\)](#);
  - (d) all pilots-in-command of intercepting aircraft are made aware of the general performance limitations of civil aircraft and of the possibility that intercepted civil aircraft may be in a state of emergency due to technical difficulties or unlawful interference;
  - (e) clear and unambiguous instructions are issued to intercept control units and to pilots-in-command of potential intercepting aircraft, covering interception manoeuvres, guidance of intercepted aircraft, action by intercepted aircraft, air-to-air visual signals, radio-communication with intercepted aircraft, and the need to refrain from resorting to the use of weapons;
- Note. See paragraphs 2 to 6.*
- (f) intercept control units and intercepting aircraft are provided with radiotelephony equipment so as to enable them to communicate with intercepted aircraft on the emergency frequency 121,5 MHz,

- (g) secondary surveillance radar and/or ADS-B facilities are made available to the extent possible to permit intercept control units to identify civil aircraft in areas where they might otherwise be intercepted. Such facilities should permit recognition of aircraft identity and immediate recognition of any emergency or urgency conditions.

## 2. Interception manoeuvres

- 2.1 A standard method should be established for the manoeuvring of aircraft intercepting a civil aircraft in order to avoid any hazard for the intercepted aircraft. Such method should take due account of the performance limitations of civil aircraft, the need to avoid flying in such proximity to the intercepted aircraft that a collision hazard may be created, and the need to avoid crossing the aircraft's flight path or to perform any other manoeuvre in such a manner that the wake turbulence may be hazardous, particularly if the intercepted aircraft is a light aircraft.
- 2.2 An aircraft equipped with an ACAS, which is being intercepted, may perceive the interceptor as a collision threat and thus initiate an avoidance manoeuvre in response to an ACAS RA. Such a manoeuvre might be misinterpreted by the interceptor as an indication of unfriendly intentions. It is important therefore that pilots of intercepting aircraft equipped with a secondary surveillance radar (SSR) transponder suppress the transmission of pressure-altitude information (in Mode C replies or in the AC field of Mode S replies) within a range of at least 37 km (20 NM) of the aircraft being intercepted. This prevents the ACAS in the intercepted aircraft from using RAs in respect of the interceptor, while the ACAS traffic advisory information will remain available.
- 2.3 Manoeuvres for visual identification

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

### *Phase I*

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

### *Phase II*

The element leader, or the single intercepting aircraft, should begin closing in gently on the intercepted aircraft, at the same level, until no closer than absolutely necessary to obtain the information needed. The element leader, or the single intercepting aircraft, should use caution to avoid startling the flight crew or the passengers of the intercepted aircraft, keeping constantly in mind the fact that manoeuvres considered normal to an intercepting aircraft may be considered hazardous to passengers and crews of civil aircraft. Any other participating aircraft should continue to stay well clear of the intercepted aircraft. Upon completion of identification, the intercepting aircraft should withdraw from the vicinity of the intercepted aircraft as outlined in Phase III.

### *Phase III*

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

#### 2.4 Manoeuvres for navigational guidance

2.4.1 If, following the identification manoeuvres in Phase I and Phase II above, it is considered necessary to intervene in the navigation of the intercepted aircraft, the element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, to enable the pilot-in-command of the latter aircraft to see the visual signals given.

2.4.2 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given. If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series 1 signal in [Table S11-1](#), are unsuccessful, other methods of signalling may be used for this purpose, including as a last resort the visual effect of the reheat/afterburner, provided that no hazard is created for the intercepted aircraft.

2.5 It is recognised that meteorological conditions or terrain may occasionally make it necessary for the element leader, or the single intercepting aircraft, to take up a position on the right (starboard) side, slightly above and ahead of the intercepted aircraft. In such case, the pilot-in-command of the intercepting aircraft must take particular care that the intercepting aircraft is clearly visible at all times to the pilot-in-command of the intercepted aircraft.

### 3. Guidance of an intercepted aircraft

3.1 Navigational guidance and related information should be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.

3.2 When navigational guidance is given to an intercepted aircraft, care must be taken that the aircraft is not led into conditions where the visibility may be reduced below that required to maintain flight in visual meteorological conditions and that the manoeuvres demanded of the intercepted aircraft do not add to already existing hazards in the event that the operating efficiency of the aircraft is impaired.

3.3 In the exceptional case where an intercepted civil aircraft is required to land in the territory overflown, care must also be taken that:

- (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/energy remaining to reach the aerodrome;
- (d) if the intercepted aircraft is a civil transport aircraft, the designated aerodrome has a runway with a length equivalent to at least 2 500 m at MSL and a bearing strength sufficient to support the aircraft; and

- (e) whenever possible, the designated aerodrome is one that is described in detail in the relevant AIP.

3.4 When requiring a civil aircraft to land at an unfamiliar aerodrome, it is essential that sufficient time be allowed for it to prepare for a landing, bearing in mind that only the pilot-in-command of the civil aircraft can judge the safety of the landing operation in relation to runway length and aircraft mass at the time.

3.5 It is particularly important that all information necessary to facilitate a safe approach and landing be given to the intercepted aircraft by radiotelephony.

#### 4. Air-to-air visual signals

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

#### 5. Radio communication between the intercept control unit or the intercepting aircraft and the intercepted aircraft

5.1 When an interception is being made, the intercept control unit and the intercepting aircraft should:

- (a) first attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121,5 MHz, using the call signs 'INTERCEPT CONTROL', 'INTERCEPTOR (call sign)' and 'INTERCEPTED AIRCRAFT' respectively, and
- (b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the competent authority, or to establish contact through the appropriate ATS unit(s).

5.2 If radio contact is established during interception, but communication in a common language is not possible, attempts must be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in [Table S11-3](#) and transmitting each phrase twice.

#### 6. Refraining from the use of weapons

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

#### 7. Coordination between intercept control units and ATS units

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

## AMC1 SERA.11015(a) Interception

ED Decision 2013/013/R

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

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

## GM1 SERA.11015(a) Interception

ED Decision 2013/013/R

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

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

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

### SERA.12001 Types of aircraft observations

Regulation (EU) No 923/2012

- (a) The following aircraft observations shall be made during any phase of the flight:
- (1) special aircraft observations; and
  - (2) other non-routine aircraft observations.

### SERA.12005 Special aircraft observations

Regulation (EU) 2020/1177

- (a) Special observations shall be made and reported by all aircraft whenever the following conditions are encountered or observed:
- (1) moderate or severe turbulence; or
  - (2) moderate or severe icing; or
  - (3) severe mountain wave; or
  - (4) thunderstorms, without hail, that are obscured, embedded, widespread or in squall lines; or
  - (5) thunderstorms, with hail, that are obscured, embedded, widespread or in squall lines; or
  - (6) heavy dust storm or heavy sandstorm; or
  - (7) volcanic ash cloud; or
  - (8) pre-eruption volcanic activity or a volcanic eruption; or
  - (9) the runway braking action encountered is not as good as reported.
- (b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.
- (c) Flight crews shall compile the reports using forms based on the model AIREP SPECIAL form as set out in point A of [Appendix 5](#). Those reports shall comply with the detailed instructions for reporting, as provided in point 2 of [Appendix 5](#).
- (1) The detailed instructions, including the formats of messages and the phraseologies provided in [Appendix 5](#), shall be used by flight crews when transmitting air-reports and by ATS units when retransmitting such reports.
  - (2) Special air-reports containing observations of volcanic activity shall be recorded on the special air-report of volcanic activity form. Forms based on the model form for special air-reports of volcanic activity set out in point B of [Appendix 5](#) shall be provided for flight crews operating on routes which could be affected by volcanic ash clouds.

## GM1 SERA.12005(c) Special aircraft observations

ED Decision 2016/023/R

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.

## SERA.12010 Other non-routine aircraft observations

Regulation (EU) No 923/2012

When other meteorological conditions not listed under [SERA.12005\(a\)](#), e.g. wind shear, are encountered and which, in the opinion of the pilot-in-command, may affect the safety or markedly affect the efficiency of other aircraft operations, the pilot-in-command shall advise the appropriate air traffic services unit as soon as practicable.

## SERA.12015 Reporting of aircraft observations by voice communication

Regulation (EU) No 923/2012

- (a) Aircraft observations shall be reported during flight at the time the observation is made or as soon thereafter as is practicable.
- (b) Aircraft observations shall be reported as air-reports and shall comply with the technical specifications in [Appendix 5](#).

## SERA.12020 Exchange of air-reports

Regulation (EU) 2024/404

- (a) Air traffic services units shall transmit, as soon as practicable, special and non-routine air-reports to:
  - (1) other aircraft concerned;
  - (2) the associated meteorological watch office (MWO) in accordance with point 3 of Point A [Appendix 5](#); and
  - (3) other air traffic services units concerned.
- (b) When receiving special air-reports by voice communications concerning braking action which does not correspond to the runway condition report, air traffic services units shall forward them without delay to the appropriate aerodrome operator.
- (c) Transmissions to aircraft shall be repeated at a frequency and continued for a period of time which shall be determined by the air traffic services unit concerned.

## AMC1 SERA.12020 Exchange of air-reports

ED Decision 2016/023/R

### SPECIAL AIR-REPORTS

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

## **GM1 SERA.12020(a)(2) Exchange of air-reports**

*ED Decision 2020/007/R*

### **SPECIAL AND NON-ROUTINE AIR-REPORTS TO THE ASSOCIATED METEOROLOGICAL WATCH OFFICE (MWO)**

The transmission of special and non-routine air-reports to their associated MWO is to be intended with the exceptions of runway braking action encountered and wind shear air-reports.

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

*ED Decision 2013/013/R*

### **OTHER ATS UNITS CONCERNED**

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

## SECTION 13 SSR TRANSPONDER AND ADS-B TRANSMITTERS

### SERA.13001 Operation of an SSR transponder

*Regulation (EU) 2016/1185*

- (a) When an aircraft carries a serviceable SSR transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes.
- (b) Pilots shall not operate the IDENT feature unless requested by ATS.
- (c) Except for flight in airspace designated by the competent authority for mandatory operation of transponder, aircraft without sufficient electrical power supply are exempted from the requirement to operate the transponder at all times.

### GM1 SERA.13001 Operation of an SSR transponder

*ED Decision 2016/023/R*

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

*ED Decision 2016/023/R*

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.

### GM2 SERA.13001(c) Operation of an SSR transponder

*ED Decision 2025/012/R*

#### AIRCRAFT WITHOUT SUFFICIENT ELECTRICAL POWER

This exemption addresses aircraft (e.g. sailplanes) that have electrical power supply only for the operation of on-board equipment, supporting notably communication, navigation and surveillance, which is not sufficient for the permanent operation of the SSR transponder.

Aircraft whose engines are electrically powered are not subject to this exemption since their certification provides for sufficient electrical power supply to cover both aircraft propulsion and other on-board supporting systems.

### SERA.13005 SSR transponder Mode A code setting

*Regulation (EU) 2016/1185*

- (a) To indicate that it is in a specific contingency situation, the pilot of an aircraft equipped with SSR shall:
  - (1) select Code 7700 to indicate a state of emergency unless ATC has previously directed the pilot to operate the transponder on a specified code. In the latter case, a pilot may nevertheless select Code 7700 whenever there is a specific reason to believe that this would be the best course of action;
  - (2) select Code 7600 to indicate a state of radio-communication failure;

- (3) attempt to select Code 7500 to indicate a state of unlawful interference. If circumstances so warrant, Code 7700 should be used instead.
- (b) Except in the cases described in (a) above, the pilot shall:
  - (1) select codes as instructed by the ATS unit; or
  - (2) in the absence of ATS instructions related to code setting, select code 2000 or another code as prescribed by the competent authority; or
  - (3) when not receiving air traffic services, select code 7000 in order to improve the detection of suitably equipped aircraft unless otherwise prescribed by the competent authority.
- (c) When it is observed that the code shown on the situation display is different from what has been assigned to the aircraft:
  - (1) the pilot shall be requested to confirm the code selected and, if the situation warrants, to reselect the correct code; and
  - (2) if the discrepancy between assigned and displayed codes still persists, the pilot may be requested to stop the operation of the aircraft's transponder. The next control position and any other affected unit using SSR and/or multilateration (MLAT) in the provision of ATS shall be informed accordingly.

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

ED Decision 2016/023/R

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

ED Decision 2016/023/R

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.

### SERA.13010 Pressure-altitude-derived information

Regulation (EU) 2020/469

- (a) When the aircraft carries serviceable Mode C equipment, the pilot shall continuously operate this mode unless otherwise dictated by ATC.
- (b) Unless otherwise prescribed by the competent authority, verification of the pressure-altitude-derived level information displayed shall be effected at least once by each suitably equipped ATS unit on initial contact with the aircraft concerned or, if this is not feasible, as soon as possible thereafter.

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

ED Decision 2020/007/R

### ERRONEOUS LEVEL INFORMATION IN AIR TRAFFIC CONTROL SERVICE PROVISION

- (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.

## GM2 SERA.13010(b) Pressure-altitude-derived information

ED Decision 2020/007/R

### ERRONEOUS LEVEL INFORMATION IN FLIGHT INFORMATION SERVICE PROVISION

The procedures for the verification of pressure-altitude-derived displayed information in the provision of flight information service should be established by the competent authority taking into consideration GM1 ATS.TR.155(f) in [EASA ED Decision 2020/008/R](#).

## SERA.13015 On-board aircraft identification setting

Regulation (EU) 2024/404

- (a) Aircraft equipped with a Mode S or ADS-B transmitter that has an aircraft identification feature shall transmit the aircraft identification as specified in the flight plan or, when no flight plan has been filed, the aircraft registration, unless the aircraft operator holds an approval from the competent authority to use other than the aircraft registration as aircraft identification for flights without a flight plan.
- (b) Whenever it is observed on the situation display that the aircraft identification transmitted by an aircraft equipped with a Mode S or ADS-B transmitter is different from that expected from the aircraft, the pilot shall be requested to confirm and, if necessary, re-enter the correct aircraft identification.

- (c) If, following confirmation by the pilot that the correct aircraft identification has been set on the Mode S or ADS-B transmitter identification feature, the discrepancy continues to exist, the air traffic services unit shall take the following actions:
- (1) inform the pilot of the persistent discrepancy;
  - (2) where possible, correct the label showing the aircraft identification on the situation display; and
  - (3) notify the next control position and any other unit concerned using Mode S or ADS-B for identification purposes that the aircraft identification transmitted by the aircraft is erroneous.

## AMC1 SERA.13015 On-board aircraft identification setting

ED Decision 2024/007R

### AIRCRAFT IDENTIFICATION SETTING

- (a) The aircraft identification transmitted should conform to the format specified for Item 7 of the ICAO flight plan form.
- (b) The competent authority should only authorise aircraft operators to use other than aircraft registration as aircraft identification when operating without a flight plan provided that:
- (1) the aircraft operator demonstrates that procedures have been implemented to ensure the uniqueness of the aircraft identification for flights that might operate simultaneously;
  - (2) the air traffic services providers have indicated that the air traffic services surveillance systems are capable of managing duplication of Mode S aircraft identification;
  - (3) the need for individual identification for other authorities is addressed accordingly.

## GM1 SERA.13015 On-board aircraft identification setting

ED Decision 2024/007R

### OPERATION OF ADS-B TRANSMITTERS

To indicate that it is in a state of emergency or to transmit other urgent information, an aircraft equipped with ADS-B may operate either of the emergency and/or urgency mode as follows:

- (a) emergency,
- (b) communication failure,
- (c) unlawful interference,
- (d) minimum fuel/energy,
- (e) medical.

## GM2 SERA.13015 On-board aircraft identification setting

ED Decision 2024/007R

### OPERATION OF ADS-B TRANSMITTERS

Some aircraft equipped with first-generation ADS-B avionics do not have the capability described in [GM1 SERA.13015](#) and only have the capability to transmit a general emergency alert regardless of the code selected by the pilot.

## GM3 SERA.13015 On-board aircraft identification setting

ED Decision 2024/007/R

### AIRCRAFT IDENTIFICATION SETTING

Point (b)(1) of [AMC1 SERA.13015](#) requires aircraft operators to incorporate into an operations manual a mechanism that ensures the uniqueness of aircraft call signs. For example, they may elect to assign each pilot-in-command or each airframe with a unique number, which may also be augmented with the addition of letters. The call sign, consisting of the operator designator issued by ICAO and the unique number together with any augmenting letter, is to be inserted into the Mode S identification feature prior to departure and used in all radio communications unless instructed otherwise by air traffic services.

## GM4 SERA.13015 On-board aircraft identification setting

ED Decision 2024/007/R

### DUPLICATED AIRCRAFT IDENTIFICATION

To demonstrate the resilience of the ATS surveillance system to duplicated aircraft identification, as prescribed in point (b)(2) of [AMC1 SERA.13015](#), it is normally enough to indicate that a duplicated downlinked aircraft identification would not affect, or reduce in any way, the performance of the surveillance tracker for generating and validating system tracks. In the case of a multisensor tracking system, using surveillance information from sensors belonging to neighbouring air traffic services providers, indication that the neighbouring surveillance tracker is not affected by potential duplication of the aircraft identification is needed.

## GM5 SERA.13015 On-board aircraft identification setting

ED Decision 2024/007/R

### AIRCRAFT IDENTIFICATION SETTING

The ATS surveillance information used by an air navigation service provider is in many Member States also used by other authorities (e.g. air defence, search and rescue). The impact, if any, of allowing aircraft operating without a flight plan to transmit aircraft identification other than aircraft registration should be assessed and documented accordingly, as prescribed in point (b)(3) of [AMC1 SERA.13015](#).

## SERA.13020 SSR transponder failure when the carriage of a functioning transponder is mandatory

Regulation (EU) 2016/1185

- (a) In case of a transponder failure after departure, ATC units shall attempt to provide for continuation of the flight to the destination aerodrome in accordance with the flight plan. Pilots may, however, be expected to comply with specific restrictions.
- (b) In the case of a transponder which has failed and cannot be restored before departure, pilots shall:
  - (1) inform ATS as soon as possible, preferably before submission of a flight plan;
  - (2) insert in Item 10 of the ICAO flight plan form under SSR the character 'N' for complete unserviceability of the transponder or, in case of partial transponder failure, insert the character corresponding to the remaining transponder capability; and

- (3) comply with any published procedures for requesting an exemption from the requirements to carry a functioning SSR transponder.

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

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### 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 1207/2011<sup>1</sup> also addresses this issue.

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

## SECTION 14 VOICE COMMUNICATION PROCEDURES

### SERA.14001 General

*Regulation (EU) 2016/1185*

Standardised phraseology shall be used in all situations for which it has been specified. Only when standardised phraseology cannot serve an intended transmission, plain language shall be used.

### AMC1 SERA.14001 General

*ED Decision 2016/023/R*

For standardised phraseology, refer to the [Appendix 1](#).

## Appendix 1 to AMC1 SERA.14001 General

ED Decision 2025/012/R

### 1. ATS PHRASEOLOGIES

#### 1.1 General

| Section | Circumstances                                                                                                                                                                                                                                                                                                                       | Phraseologies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Applicable to                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                  |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ATC                                                                                                                                                                                                                                                                           | FIS                                                                                                                                                                                              |
| 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>) FEET/METRES; or</p> <p>c) [ALTITUDE] (<i>number</i>) FEET/METRES.</p> <p>d) (<i>number</i>) FEET/METRES ABOVE (or BELOW)</p>                                                                                                                                                                                                                                                                                                                                                                        | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                                                                                                      | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                         |
| 1.1.2   | <p>Level changes, reports and rates</p> <p>...instruction that a climb (or descent) to a level within the vertical range defined is to commence</p> <p>...for SST aircraft only</p>                                                                                                                                                 | <p>a) CLIMB (or DESCEND); followed as necessary by:</p> <p>1) TO (<i>level</i>)</p> <p>2) TO AND MAINTAIN BLOCK (<i>level</i>) TO (<i>level</i>);</p> <p>3) TO REACH (<i>level</i>) AT (or BY) (<i>time or significant point</i>);</p> <p>4) REPORT LEAVING (or REACHING, or PASSING) (<i>level</i>);</p> <p>5) AT (<i>number</i>) METRES PER SECOND (or FEET PER MINUTE) [OR GREATER (or OR LESS)];</p> <p>6) REPORT STARTING ACCELERATION (or DECELERATION).</p> <p>b) MAINTAIN AT LEAST (<i>number</i>) METRES (or FEET) ABOVE (or BELOW) (<i>aircraft call sign</i>);</p> | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> |

|                                                                                                                                                                   |                                                                                                             |                                     |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
|                                                                                                                                                                   | c) REQUEST LEVEL (or FLIGHT LEVEL or ALTITUDE) CHANGE FROM (name of unit) [AT (time or significant point)]; | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | d) STOP CLIMB (or DESCENT) AT (level);                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | e) CONTINUE CLIMB (or DESCENT) TO (level);                                                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | f) EXPEDITE CLIMB (or DESCENT) [UNTIL PASSING (level)];                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | g) WHEN READY, CLIMB (or DESCEND) TO (level);                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | h) EXPECT CLIMB (or DESCENT) AT (time or significant point);                                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | *i) REQUEST DESCENT AT (time);                                                                              | *                                   |                          |
| ...to require action at a specific time or place                                                                                                                  | j) IMMEDIATELY;                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | k) AFTER PASSING (significant point);                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | l) AT (time or significant point);                                                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...to require action when convenient                                                                                                                              | m) WHEN READY (instruction);                                                                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...to require an aircraft to climb or descend maintaining own separation and VMC                                                                                  | n) MAINTAIN OWN SEPARATION AND VMC [FROM (level)] [TO (level)];                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                   | o) MAINTAIN OWN SEPARATION AND VMC ABOVE (or BELOW, or TO) (level);                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...when there is doubt that an aircraft can comply with a clearance or instruction                                                                                | p) IF UNABLE, (alternative instructions) AND ADVISE;                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...when a pilot is unable to comply with a clearance or instruction                                                                                               | *q) UNABLE;                                                                                                 | *                                   |                          |
| ...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) | *r) TCAS RA;                                                                                                | *                                   |                          |
|                                                                                                                                                                   | s) ROGER;                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...after the response to an ACAS RA is completed and a return to the ATC clearance or instruction is                                                              | *t) CLEAR OF CONFLICT, RETURNING TO (assigned clearance);                                                   | *                                   |                          |
|                                                                                                                                                                   | u) ROGER (or alternative instructions);                                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                                                                                                                                                                                                                                               |                                                                                                                          |   |                                     |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------|--------------------------|
| initiated (Pilot and controller interchange)                                                                                                                                                                                                                                                                                  | *v) CLEAR OF CONFLICT ( <i>assigned clearance</i> ) RESUMED;                                                             | * | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                                                                                                                                                                               | w) ROGER ( <i>or alternative instructions</i> );                                                                         | * | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...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)                                                                                                                                              | *x UNABLE, TCAS RA;                                                                                                      | * | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                                                                                                                                                                                                               | y) ROGER;                                                                                                                |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to climb on a SID which has published level and/or speed restrictions, where the pilot is to climb to the cleared level and comply with published level restrictions, follow the lateral profile of the SID, and comply with published speed restrictions or ATC-issued speed control instructions as applicable | z) CLIMB VIA SID TO ( <i>level</i> );                                                                                    |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to cancel level restriction(s) of the vertical profile of a SID during climb                                                                                                                                                                                                                                     | aa) [CLIMB VIA SID TO ( <i>level</i> )], CANCEL LEVEL RESTRICTION(S);                                                    |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to cancel specific level restriction(s) of the vertical profile of a SID during climb                                                                                                                                                                                                                            | bb) [CLIMB VIA SID TO ( <i>level</i> )], CANCEL LEVEL RESTRICTION(S) AT ( <i>point(s)</i> );                             |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to cancel speed restrictions of a SID during climb                                                                                                                                                                                                                                                               | cc) [CLIMB VIA SID TO ( <i>level</i> )], CANCEL SPEED RESTRICTION(S);                                                    |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to cancel specific speed restrictions of a SID during climb                                                                                                                                                                                                                                                      | dd) [CLIMB VIA SID TO ( <i>level</i> )], CANCEL SPEED RESTRICTION(S) AT ( <i>point(s)</i> );                             |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to climb and to cancel level and speed restrictions of a SID                                                                                                                                                                                                                                                     | ee) CLIMB UNRESTRICTED TO ( <i>level</i> ) ( <i>or</i> ) CLIMB TO ( <i>level</i> ), CANCEL LEVEL AND SPEED RESTRICTIONS; |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance to descend on a STAR which has published level and/or speed restrictions, where the pilot is to descend to the cleared level and comply with published level restrictions, follow the lateral profile of the STAR, and comply with published speed restrictions                                                  | ff) DESCEND VIA STAR TO ( <i>level</i> );                                                                                |   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |



the ATS unit will initiate communications soon.

*Note. — An aircraft may be requested to ‘MONITOR’ a frequency when information is being broadcast thereon.*

\*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.

\*

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#### 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;

\*

...to request status in respect of 8.33 kHz exemption

g) CONFIRM EIGHT POINT THREE THREE EXEMPTED;

☒

☒

|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>*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>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>*</p> <p>*</p> <p><input checked="" type="checkbox"/></p>                                                                                                                                           | <p></p> <p></p> <p><input type="checkbox"/></p>                                                                                                                                                     |
| <p>1.1.6 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>                                                                                                                  | <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>                                                                                                                                     |
| <p>1.1.7 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> <p>g) TRAFFIC IS <i>(classification)</i> UNMANNED FREE BALLOON(S) WAS <i>[or ESTIMATED]</i> OVER <i>(place)</i> AT <i>(time)</i> REPORTED <i>level(s)</i> <i>[or LEVEL UNKNOWN]</i> MOVING <i>(direction)</i> <i>(other pertinent information, if any)</i>.</p> <p>‘*’ denotes pilot transmission.</p> | <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p>*</p> <p>*</p> <p>*</p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> | <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p></p> <p></p> <p></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> |

|       |                                                                                                                                          |                                                                                                                                                                                                                                                                       |   |   |
|-------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| 1.1.8 | Meteorological conditions                                                                                                                | a) [SURFACE] WIND ( <i>number</i> ) DEGREES ( <i>speed</i> ) ( <i>units</i> );                                                                                                                                                                                        | ☑ | ☑ |
|       |                                                                                                                                          | b) WIND AT ( <i>level</i> ) ( <i>number</i> ) DEGREES ( <i>number</i> ) KILOMETRES PER HOUR (or KNOTS);                                                                                                                                                               | ☑ | ☑ |
|       |                                                                                                                                          | <i>Note. — Wind is always expressed by giving the mean direction and speed and any significant variations thereof.</i>                                                                                                                                                |   |   |
|       |                                                                                                                                          | c) VISIBILITY ( <i>distance</i> ) ( <i>units</i> ) [ <i>direction</i> ];                                                                                                                                                                                              | ☑ | ☑ |
|       |                                                                                                                                          | d) RUNWAY VISUAL RANGE (or RVR) [RUNWAY ( <i>number</i> )] ( <i>distance</i> ) ( <i>units</i> );                                                                                                                                                                      | ☑ | ☑ |
|       |                                                                                                                                          | e) RUNWAY VISUAL RANGE (or RVR) RUNWAY ( <i>number</i> ) NOT AVAILABLE (or NOT REPORTED);                                                                                                                                                                             | ☑ | ☑ |
|       | ...for multiple RVR observations                                                                                                         | f) RUNWAY VISUAL RANGE (or RVR) [RUNWAY ( <i>number</i> )] ( <i>first position</i> ) ( <i>distance</i> ) ( <i>units</i> ), ( <i>second position</i> ) ( <i>distance</i> ) ( <i>units</i> ), ( <i>third position</i> ) ( <i>distance</i> ) ( <i>units</i> );           | ☑ | ☑ |
|       |                                                                                                                                          | <i>Note 1. — Multiple RVR observations are always representative of the touchdown zone, midpoint zone and the roll-out/stop-end zone respectively.</i>                                                                                                                |   |   |
|       |                                                                                                                                          | <i>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.</i> |   |   |
|       | ...in the event that RVR information on any one position is not available, this information will be included in the appropriate sequence | g) RUNWAY VISUAL RANGE (or RVR) [RUNWAY ( <i>number</i> )] ( <i>first position</i> ) ( <i>distance</i> ) ( <i>units</i> ), ( <i>second position</i> ) NOT AVAILABLE, ( <i>third position</i> ) ( <i>distance</i> ) ( <i>units</i> );                                  | ☑ | ☑ |
|       |                                                                                                                                          | h) PRESENT WEATHER (details);                                                                                                                                                                                                                                         | ☑ | ☑ |
|       |                                                                                                                                          | i) CLOUD ( <i>amount</i> , [ <i>type</i> ]) and height of base) ( <i>units</i> ) (or SKY CLEAR);                                                                                                                                                                      | ☑ | ☑ |
|       |                                                                                                                                          | j) CAVOK;                                                                                                                                                                                                                                                             | ☑ | ☑ |
|       |                                                                                                                                          | <i>Note. — ‘CAVOK’ pronounced ‘CAV-O-KAY’.</i>                                                                                                                                                                                                                        |   |   |
|       |                                                                                                                                          | k) TEMPERATURE [MINUS] ( <i>number</i> ) (and/or DEWPOINT [MINUS] ( <i>number</i> ));                                                                                                                                                                                 | ☑ | ☑ |

|        |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |                                     |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
|        | <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>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>p) INSTRUMENT METEOROLOGICAL CONDITIONS REPORTED (or forecast) IN THE VICINITY OF (location)</p>                                                                                                                                                                                                                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.1.9  | <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>                                                                                                                                                                                                                                                                                                                                                                                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 1.1.10 | <p>Additional reports</p> <p>...to request a report at a specified place or distance</p> <p>...to report at a specified place or distance</p> <p>...to request a report of present position</p> <p>...to report present position</p> | <p>a) REPORT PASSING (significant point);</p> <p>b) REPORT (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point);</p> <p>*c) (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point);</p> <p>d) REPORT PASSING (three digits) RADIAL (name of VOR) VOR;</p> <p>e) REPORT (GNSS or DME) DISTANCE FROM (significant point) or (name of DME station);</p> <p>*f) (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point).</p> <p>‘*’ denotes pilot transmission.</p> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.1.11 | <p>Aerodrome information</p> <p><i>Note. — This information is provided for runway thirds or the full runway, as applicable. (Applicable from 12 August 2021)</i></p>                                                                | <p>a) [(location)] RUNWAY (number) SURFACE CONDITION [CODE (three-digit number)];</p> <p>followed as necessary by:</p> <p>1. ISSUED AT (date and time UTC);</p>                                                                                                                                                                                                                                                                                                                                                                                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

- |                                                                                                                                                                                                                                                                                                                                                    |                                     |                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 2. DRY, or WET ICE, or WATER ON TOP OF COMPACTED SNOW, or DRY SNOW, or DRY SNOW ON TOP OF ICE, or WET SNOW ON TOP OF ICE, or ICE, or SLUSH, or STANDING WATER, or COMPACTED SNOW, or WET SNOW, or DRY SNOW ON TOP OF COMPACTED SNOW, or WET SNOW ON TOP OF COMPACTED SNOW, or WET, or SLIPPERY WET, OR SPECIALLY PREPARED WINTER RUNWAY, or FROST; |                                     |                                     |
| 3. DEPTH (( <i>depth of deposit</i> ) MILLIMETRES or NOT REPORTED);                                                                                                                                                                                                                                                                                |                                     |                                     |
| 4. COVERAGE (( <i>number</i> ) PER CENT or NOT REPORTED);                                                                                                                                                                                                                                                                                          |                                     |                                     |
| 5. AVAILABLE WIDTH ( <i>number</i> ) METRES;                                                                                                                                                                                                                                                                                                       |                                     |                                     |
| 6. LENGTH REDUCED TO ( <i>number</i> ) METRES;                                                                                                                                                                                                                                                                                                     |                                     |                                     |
| 7. DRIFTING SNOW;                                                                                                                                                                                                                                                                                                                                  |                                     |                                     |
| 8. LOOSE SAND;                                                                                                                                                                                                                                                                                                                                     |                                     |                                     |
| 9. CHEMICALLY TREATED;                                                                                                                                                                                                                                                                                                                             |                                     |                                     |
| 10. SNOWBANK ( <i>number</i> ) METRES [LEFT, or RIGHT or LEFT AND RIGHT] [OF or FROM] CENTRE LINE;                                                                                                                                                                                                                                                 |                                     |                                     |
| 11. TAXIWAY ( <i>identification of taxiway</i> ) SNOWBANK ( <i>number</i> ) METRES [LEFT, or RIGHT or LEFT AND RIGHT] [OF or FROM] CENTRE LINE;                                                                                                                                                                                                    |                                     |                                     |
| 12. ADJACENT SNOWBANKS;                                                                                                                                                                                                                                                                                                                            |                                     |                                     |
| 13. TAXIWAY ( <i>identification of taxiway</i> ) POOR;                                                                                                                                                                                                                                                                                             |                                     |                                     |
| 14. APRON ( <i>identification of apron</i> ) POOR;                                                                                                                                                                                                                                                                                                 |                                     |                                     |
| 15. Plain-language remarks                                                                                                                                                                                                                                                                                                                         |                                     |                                     |
| b) [( <i>location</i> )] RUNWAY SURFACE CONDITION RUNWAY ( <i>number</i> ) NOT CURRENT;                                                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) LANDING SURFACE ( <i>condition</i> );                                                                                                                                                                                                                                                                                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) CAUTION CONSTRUCTION WORK ( <i>location</i> );                                                                                                                                                                                                                                                                                                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) CAUTION ( <i>specify reasons</i> ) RIGHT (or LEFT), (or BOTH SIDES) OF RUNWAY [( <i>number</i> )];                                                                                                                                                                                                                                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) CAUTION WORK IN PROGRESS (or OBSTRUCTION) ( <i>position and any necessary advice</i> );                                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) BRAKING ACTION REPORTED BY ( <i>aircraft type</i> ) AT ( <i>time</i> ) GOOD (or GOOD TO MEDIUM, or MEDIUM, or MEDIUM TO POOR, or POOR);                                                                                                                                                                                                         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

|        |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                     |
|--------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
|        |                                                                             | h) TAXIWAY ( <i>identification of taxiway</i> ) WET [or STANDING WATER, or SNOW REMOVED ( <i>length and width as applicable</i> ), or CHEMICALLY TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or COMPACTED SNOW, or SLUSH, or FROZEN SLUSH, or ICE, or WET ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS, or FROZEN RUTS AND RIDGES or LOOSE SAND)];                                                                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|        |                                                                             | i) ( <i>ATS unit call sign</i> ) OBSERVES (weather information);                                                                                                                                                                                                                                                                                                                                                                                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|        |                                                                             | j) PILOT REPORTS ( <i>weather information</i> ).                                                                                                                                                                                                                                                                                                                                                                                                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.1.12 | Operational status of visual and non-visual aids                            | a) ( <i>specify visual or non-visual aid</i> ) RUNWAY ( <i>number</i> )<br>( <i>description of deficiency</i> );<br>b) ( <i>type</i> ) LIGHTING ( <i>unserviceability</i> );<br>c) GBAS/SBAS/MLS/ILS CATEGORY ( <i>category</i> ) ( <i>serviceability state</i> );<br>d) TAXIWAY LIGHTING ( <i>description of deficiency</i> );<br>e) ( <i>type of visual approach slope indicator</i> ) RUNWAY ( <i>number</i> ) ( <i>description of deficiency</i> ). | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.1.13 | Reduced vertical separation minimum (RVSM) operations                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                     |
|        | ...to ascertain RVSM approval status of an aircraft                         | a) CONFIRM RVSM APPROVED;                                                                                                                                                                                                                                                                                                                                                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|        | ...to report RVSM approved status                                           | *b) AFFIRM RVSM;                                                                                                                                                                                                                                                                                                                                                                                                                                        | *                                   |                                     |
|        | ...to report RVSM non-approved status followed by supplementary information | *c) NEGATIVE RVSM [( <i>supplementary information, e.g. State aircraft</i> )];                                                                                                                                                                                                                                                                                                                                                                          | *                                   |                                     |
|        | ...to deny ATC clearance into RVSM airspace                                 | d) UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] ( <i>level</i> );                                                                                                                                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|        | ...to report when severe turbulence affects the capability                  | *e) UNABLE RVSM DUE TURBULENCE;                                                                                                                                                                                                                                                                                                                                                                                                                         | *                                   |                                     |

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

...to report ability to resume RVSM operations after an equipment or weather-related contingency

\*f) UNABLE RVSM DUE EQUIPMENT;

\*

g) REPORT WHEN ABLE TO RESUME RVSM;

☒

☐

h) CONFIRM ABLE TO RESUME RVSM;

☒

☐

\*i) READY TO RESUME RVSM.

\*

'\*' denotes pilot transmission.

#### 1.1.14 GNSS service status

a) GNSS REPORTED UNRELIABLE (or GNSS MAY NOT BE AVAILABLE [DUE TO INTERFERENCE]);

☒

☒

1) IN THE VICINITY OF (location) (radius) [BETWEEN (levels)];

or

2) IN THE AREA OF (description) (or IN (name) FIR) [BETWEEN (levels)];

b) BASIC GNSS (or SBAS, or GBAS) UNAVAILABLE FOR (specify operation) [FROM (time) TO (time) (or UNTIL FURTHER NOTICE)];

☒

☒

\*c) BASIC GNSS UNAVAILABLE [DUE TO (reason, e.g. LOSS OF RAIM or RAIM ALERT)];

\*

\*d) GBAS (or SBAS) UNAVAILABLE ;

\*

e) CONFIRM GNSS NAVIGATION;

☒

☒

\*f) AFFIRM GNSS NAVIGATION.

\*

'\*' denotes pilot transmission.

**1.1.15 RNAV**

...RNAV arrival or departure procedure cannot be accepted by the pilot

\*UNABLE (*designator*) DEPARTURE [*or* ARRIVAL] DUE RNAV TYPE; \*

...pilot is unable to comply with an assigned terminal area procedure

\*UNABLE (*designator*) DEPARTURE [*or* ARRIVAL] (*reasons*); \*

...ATC unable to assign an RNAV arrival or departure procedure requested by the 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 En-route air traffic services**
**Section Circumstances**
**Phraseologies**
**Applicable to**

ATC FIS

**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];

☒ ☐

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|       |                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                              |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                                                                                                                                                       | d) MAINTAIN <i>(level)</i> UNTIL <i>(time)</i> ;<br>e) MAINTAIN <i>(level)</i> UNTIL ADVISED BY <i>(name of unit)</i> ;<br>f) MAINTAIN <i>(level)</i> UNTIL FURTHER ADVISED;<br>g) MAINTAIN <i>(level)</i> WHILE IN CONTROLLED AIRSPACE;<br>h) MAINTAIN BLOCK <i>(level)</i> TO <i>(level)</i> .<br><i>Note. — The term ‘MAINTAIN’ is not to be used in lieu of ‘DESCEND’ or ‘CLIMB’ when instructing an aircraft to change level.</i>                                | <input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/> |
| 1.2.4 | Specification of cruising levels                                                                                                                                      | a) CROSS <i>(significant point)</i> AT (or ABOVE, or BELOW) <i>(level)</i> ;<br>b) CROSS <i>(significant point)</i> AT <i>(time)</i> OR LATER (or BEFORE) AT <i>(level)</i> ;<br>c) CRUISE CLIMB BETWEEN <i>(levels)</i> (or ABOVE <i>(level)</i> );<br>d) CROSS <i>(distance)</i> MILES, (GNSS or DME) <i>[(direction)]</i> OF <i>(name of DME station)</i> OR <i>(distance) [(direction)]</i> OF <i>(significant point)</i> AT (or ABOVE or BELOW) <i>(level)</i> . | <input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/>                                                                 |
| 1.2.5 | Emergency descent<br><br><i>Note. — FIC and AFIS units are entitled only to provide information, and to relay clearances and instructions on behalf of ATC units.</i> | *a) EMERGENCY DESCENT <i>(intentions)</i> ;<br>b) ATTENTION ALL AIRCRAFT IN THE VICINITY OF [or AT] <i>(significant point or location)</i> EMERGENCY DESCENT IN PROGRESS FROM <i>(level)</i> (followed as necessary by specific instructions, clearances, traffic information, etc.).<br><br><i>‘*’ denotes pilot transmission.</i>                                                                                                                                   | *<br><input checked="" type="checkbox"/> <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                 |
| 1.2.6 | If clearance cannot be issued immediately upon request                                                                                                                | EXPECT CLEARANCE <i>(or type of clearance)</i> AT <i>(time)</i> .                                                                                                                                                                                                                                                                                                                                                                                                     | <input checked="" type="checkbox"/> <input type="checkbox"/>                                                                                                                                                                                                                                                                 |
| 1.2.7 | When clearance for deviation cannot be issued                                                                                                                         | UNABLE, TRAFFIC <i>(direction)</i> BOUND <i>(type of aircraft)</i> <i>(level)</i> ESTIMATED (or OVER) <i>(significant</i>                                                                                                                                                                                                                                                                                                                                             | <input checked="" type="checkbox"/> <input type="checkbox"/>                                                                                                                                                                                                                                                                 |

*point*) AT (*time*) CALL SIGN (*call sign*) ADVISE INTENTIONS.

**1.2.8 Separation instructions**

|                                                                                                                               |                                     |                          |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| a) CROSS ( <i>significant point</i> ) AT ( <i>time</i> ) [OR LATER ( <i>or</i> OR BEFORE)];                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) ADVISE IF ABLE TO CROSS ( <i>significant point</i> ) AT ( <i>time or level</i> );                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) MAINTAIN MACH ( <i>number</i> ) [OR GREATER ( <i>or</i> OR LESS)] [UNTIL ( <i>significant point</i> )];                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) DO NOT EXCEED MACH ( <i>number</i> );                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) CONFIRM ESTABLISHED ON THE TRACK BETWEEN ( <i>significant point</i> ) AND ( <i>significant point</i> ) [WITH ZERO OFFSET]; | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *f) ESTABLISHED ON THE TRACK BETWEEN ( <i>significant point</i> ) AND ( <i>significant point</i> ) [WITH ZERO OFFSET];        | *                                   |                          |
| g) MAINTAIN TRACK BETWEEN ( <i>significant point</i> ) AND ( <i>significant point</i> ). REPORT ESTABLISHED ON THE TRACK;     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *h) ESTABLISHED ON THE TRACK;                                                                                                 | *                                   |                          |
| i) CONFIRM ZERO OFFSET;                                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *j) AFFIRM ZERO OFFSET.                                                                                                       | *                                   |                          |
| ‘*’ denotes pilot transmission                                                                                                |                                     |                          |

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

**1.2.9 Instructions associated with flying a track (offset), parallel to the cleared route**

|                                                                                                                                                                                             |                                     |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| a) ADVISE IF ABLE TO PROCEED PARALLEL OFFSET;                                                                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) PROCEED OFFSET ( <i>distance</i> ) RIGHT/LEFT OF ( <i>route</i> ) ( <i>track</i> ) [CENTRE LINE] [AT ( <i>significant point or time</i> )] [UNTIL ( <i>significant point or time</i> )]; | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) CANCEL OFFSET ( <i>instructions to rejoin cleared flight route or other information</i> ).                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

|        |                                                                          |                                                                                                                                         |                                     |                                     |
|--------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 1.2.10 | Relaying clearances, instructions, and information                       | a) (ATC unit) CLEARS (or INSTRUCTS) (or INFORMS) <i>(details of the clearance, instructions, or information);</i>                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|        | ...confirmation or otherwise of the readback of clearance or instruction | b) [THAT IS] CORRECT (or NEGATIVE) [I SAY AGAIN (ATC unit) CLEARS (or INSTRUCTS) <i>(details of the clearance or the instruction)</i> ] | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

### 1.3 Arrival and departure air traffic services

| Section | Circumstances                                                                                                                                                                                                                                                                                                                                                                                                  | Phraseologies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Applicable to                       |                          |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
|         |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ATC                                 | FIS                      |
| 1.3.1   | Departure instructions                                                                                                                                                                                                                                                                                                                                                                                         | <p>a) [AFTER DEPARTURE] TURN RIGHT (or LEFT) HEADING <i>(three digits)</i> (or CONTINUE RUNWAY HEADING) (or TRACK EXTENDED CENTRE LINE) TO <i>(level or significant point)</i> [<i>(other instructions as required)</i>];</p> <p>b) AFTER REACHING (or PASSING) <i>(level or significant point)</i> <i>(instructions)</i>;</p> <p>c) TURN RIGHT (or LEFT) HEADING <i>(three digits)</i> TO <i>(level)</i> [TO INTERCEPT <i>(track, route, airway, etc.)</i>];</p> <p>d) <i>(standard departure name and number)</i> DEPARTURE;</p> <p>e) TRACK <i>(three digits)</i> DEGREES [MAGNETIC (or TRUE)] TO (or FROM) <i>(significant point)</i> UNTIL <i>(time, or REACHING (fix or significant point or level))</i> [BEFORE PROCEEDING ON COURSE];</p> <p>f) CLEARED <i>(designation)</i> DEPARTURE;</p> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|         | <p><i>Note. – Conditions associated with the use of this phrase are in <a href="#">SERA.8015(d)(3)</a>, and <a href="#">GM1 SERA.8015(d)(3)(ii)</a>, and in <a href="#">ATS.TR.235(b)(3)</a>, and in <a href="#">GM1 ATS.TR.235(b)(3)(i)</a>, to Commission Implementing Regulation (EU) 2017/373.</i></p> <p>...clearance to proceed direct with advance notice of a future instruction to rejoin the SID</p> | <p>g) CLEARED DIRECT <i>(waypoint)</i>, CLIMB TO <i>(level)</i>, EXPECT TO REJOIN SID [<i>(SID designator)</i>] [AT <i>(waypoint)</i>],<br/><br/><i>then</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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|                                                                                                                                        |                                                                                                                                                                           |                                     |                          |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| ...when a pilot requests a visual approach                                                                                             | j) CLEARED STRAIGHT-IN [(type of approach)] APPROACH [RUNWAY (number)];                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | k) REPORT VISUAL;                                                                                                                                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...to request if a pilot is able to accept a visual approach                                                                           | l) REPORT RUNWAY [LIGHTS] IN SIGHT;                                                                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | *m) REQUEST VISUAL APPROACH;                                                                                                                                              | *                                   |                          |
| ...in case of successive visual approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight | n) CLEARED VISUAL APPROACH RUNWAY (number);                                                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | o) ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY (number);                                                                                                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | p) CLEARED VISUAL APPROACH RUNWAY (number), MAINTAIN OWN SEPARATION FROM PRECEDING (aircraft type and wake turbulence category as appropriate) [CAUTION WAKE TURBULENCE]; | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | q) REPORT (significant point); [OUTBOUND, or INBOUND];                                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | r) REPORT COMMENCING PROCEDURE TURN;                                                                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | *s) REQUEST VMC DESCENT;                                                                                                                                                  | *                                   |                          |
|                                                                                                                                        | t) MAINTAIN OWN SEPARATION;                                                                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | u) MAINTAIN VMC;                                                                                                                                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | v) ARE YOU FAMILIAR WITH (name) APPROACH PROCEDURE;                                                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                        | *w) REQUEST (type of approach) APPROACH [RUNWAY number];                                                                                                                  | *                                   |                          |
|                                                                                                                                        | ‘*’ denotes pilot transmission.                                                                                                                                           |                                     |                          |

**1.3.3 Holding clearances**

...visual

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

☒ ☐

...published holding procedure over a facility or fix

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

| Section | Circumstances                             | Phraseologies                                                                                                                    | Applicable to                                                                                                     |                                                                                                                   |
|---------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|         |                                           |                                                                                                                                  | ATC                                                                                                               | FIS                                                                                                               |
| 1.4.1   | Identification of aircraft                | SHOW LANDING LIGHTS.                                                                                                             | <input checked="" type="checkbox"/>                                                                               | <input checked="" type="checkbox"/>                                                                               |
| 1.4.2   | Acknowledgement by visual means           | a) ACKNOWLEDGE BY MOVING AILERONS (or RUDDER);<br>b) ACKNOWLEDGE BY ROCKING WINGS;<br>c) ACKNOWLEDGE BY FLASHING LANDING LIGHTS. | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> |
| 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 response                          | c) START-UP APPROVED;                                                                                                            | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | d) START-UP AT (time);                                                                                                           | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | e) EXPECT START-UP AT (time);                                                                                                    | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | f) START-UP AT OWN DISCRETION;                                                                                                   | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | g) EXPECT DEPARTURE (time) START-UP AT OWN DISCRETION.                                                                           | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | ‘*’ denotes pilot transmission.                                                                                                  |                                                                                                                   |                                                                                                                   |
| 1.4.4   | Pushback procedures                       |                                                                                                                                  |                                                                                                                   |                                                                                                                   |
|         | ...aircraft/ATC                           | *a) [aircraft location] REQUEST PUSHBACK;                                                                                        | *                                                                                                                 |                                                                                                                   |
|         |                                           | b) PUSHBACK APPROVED;                                                                                                            | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | c) STAND BY;                                                                                                                     | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |
|         |                                           | d) PUSHBACK AT OWN DISCRETION;                                                                                                   | <input checked="" type="checkbox"/>                                                                               | <input type="checkbox"/>                                                                                          |

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

|                                                                                         |                                                                                                                                                                                                              |                                     |                          |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| ...where detailed taxi instructions are required                                        | c) TAXI TO HOLDING POINT <i>[number]</i> [RUNWAY <i>(number)</i> ] [HOLD SHORT OF RUNWAY <i>(number)</i> (or CROSS RUNWAY <i>(number)</i> )] [TIME <i>(time)</i> ];                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | *d) <i>[aircraft type]</i> <i>[wake turbulence category if 'super' or 'heavy']</i> REQUEST DETAILED TAXI INSTRUCTIONS;                                                                                       | *                                   |                          |
| ...where aerodrome information is not available from an alternative source such as ATIS | e) TAXI TO HOLDING POINT <i>[number]</i> [RUNWAY <i>(number)</i> ] VIA <i>(specific route to be followed)</i> [TIME <i>(time)</i> ] [HOLD SHORT OF RUNWAY <i>number</i> ] (or CROSS RUNWAY <i>number</i> )); | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | f) TAXI TO HOLDING POINT <i>[number]</i> <i>(followed by aerodrome information as applicable)</i> [TIME <i>(time)</i> ];                                                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | g) TAKE (or TURN) FIRST or SECOND) LEFT or RIGHT);                                                                                                                                                           |                                     |                          |
|                                                                                         | h) TAXI VIA <i>(identification of taxiway)</i> ;                                                                                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | i) TAXI VIA RUNWAY <i>(number)</i> ;                                                                                                                                                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...for helicopter operations                                                            | j) TAXI TO TERMINAL <i>(or other location, e.g. GENERAL AVIATION AREA)</i> [STAND <i>(number)</i> ];                                                                                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | *k) REQUEST AIR-TAXIING FROM (or VIA) TO <i>(location or routing as appropriate)</i> ;                                                                                                                       | *                                   |                          |
|                                                                                         | l) AIR-TAXI TO (or VIA) <i>(location or routing as appropriate)</i> [CAUTION <i>(dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)</i> ];                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...after landing                                                                        | m) AIR-TAXI VIA <i>(direct, as requested, or specified route)</i> TO <i>(location, heliport, operating or movement area, active or inactive runway)</i> . AVOID <i>(aircraft or vehicles or personnel)</i> ; | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | *n) REQUEST BACKTRACK;                                                                                                                                                                                       | *                                   |                          |
|                                                                                         | o) BACKTRACK APPROVED;                                                                                                                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...general                                                                              | p) BACKTRACK RUNWAY <i>(number)</i> ;                                                                                                                                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | *q) <i>[(aircraft location)]</i> REQUEST TAXI TO <i>(destination on aerodrome)</i> ;                                                                                                                         | *                                   |                          |
|                                                                                         | r) TAXI STRAIGHT AHEAD;                                                                                                                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         | s) TAXI WITH CAUTION;                                                                                                                                                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

|                                                                       |                                     |                          |
|-----------------------------------------------------------------------|-------------------------------------|--------------------------|
| t) GIVE WAY TO ( <i>description and position of other aircraft</i> ); | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *u) GIVING WAY TO ( <i>traffic</i> );                                 | *                                   |                          |
| *v) TRAFFIC ( <i>or type of aircraft</i> ) IN SIGHT;                  | *                                   |                          |
| w) TAXI INTO HOLDING BAY;                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| x) FOLLOW ( <i>description of other aircraft or vehicle</i> );        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| y) VACATE RUNWAY;                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *z) RUNWAY VACATED;                                                   | *                                   |                          |
| aa) EXPEDITE TAXI [( <i>reason</i> )];                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *bb) EXPEDITING;                                                      | *                                   |                          |
| cc) [CAUTION] TAXI SLOWER [ <i>reason</i> ];                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *dd) SLOWING DOWN.                                                    | *                                   |                          |
| '*' denotes pilot transmission.                                       | *                                   |                          |

#### 1.4.8 Holding

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

|                                                                                                                                                                                                                                                                                                                                                           |                                     |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| ‡a) HOLD ( <i>direction</i> ) OF ( <i>position, runway number, etc.</i> );                                                                                                                                                                                                                                                                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ‡b) HOLD POSITION;                                                                                                                                                                                                                                                                                                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ‡c) HOLD ( <i>distance</i> ) FROM ( <i>position</i> );                                                                                                                                                                                                                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ‡d) HOLD SHORT OF ( <i>position</i> );                                                                                                                                                                                                                                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *e) HOLDING;                                                                                                                                                                                                                                                                                                                                              | *                                   |                          |
| *f) HOLDING SHORT.                                                                                                                                                                                                                                                                                                                                        | *                                   |                          |
| '‡' requires specific acknowledgement from the pilot.<br><br>'*' 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

*Note. — The pilot will, when requested, report 'RUNWAY VACATED' when the entire aircraft is beyond the relevant runway-holding position.*

|                                                                                                                                                                                                                        |                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| *a) REQUEST CROSS RUNWAY (number);                                                                                                                                                                                     | *                                                                       |
| <i>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.</i> |                                                                         |
| b) CROSS RUNWAY (number) [REPORT VACATED];                                                                                                                                                                             | <input checked="" type="checkbox"/> <input type="checkbox"/>            |
| c) EXPEDITE CROSSING RUNWAY (number) TRAFFIC (aircraft type) (distance) KILOMETRES or MILES FINAL;                                                                                                                     | <input checked="" type="checkbox"/> <input type="checkbox"/>            |
| d) TAXI TO HOLDING POINT [number] [RUNWAY (number)] VIA (specific route to be followed), [HOLD SHORT OF RUNWAY (number)] or [CROSS RUNWAY (number)];                                                                   | <input checked="" type="checkbox"/> <input type="checkbox"/>            |
| e) REPORT RUNWAY (number) VACATED;                                                                                                                                                                                     | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| *f) RUNWAY VACATED.                                                                                                                                                                                                    | *                                                                       |
| ** denotes pilot transmission.                                                                                                                                                                                         |                                                                         |

## 1.4.10 Preparation for take-off

...clearance to enter runway and  
await take-off clearance

...conditional clearances

|                                                               |                                                              |
|---------------------------------------------------------------|--------------------------------------------------------------|
| a) UNABLE TO ISSUE (designator) DEPARTURE (reasons);          | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| b) REPORT WHEN READY [FOR DEPARTURE];                         | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| c) ARE YOU READY [FOR DEPARTURE]?;                            | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| d) ARE YOU READY FOR IMMEDIATE DEPARTURE?;                    | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| *e) READY;                                                    | *                                                            |
| f) LINE UP [AND WAIT];                                        | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| †g) LINE UP RUNWAY (number);                                  | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| h) LINE UP. BE READY FOR IMMEDIATE DEPARTURE;                 | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| ‡i) (condition) LINE UP (brief reiteration of the condition); | <input checked="" type="checkbox"/> <input type="checkbox"/> |

|                                                                           |                                                                                                                                                                                            |                                     |                          |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| ...acknowledgement of a conditional clearance                             | *j) (condition) LINING UP (brief reiteration of the condition);                                                                                                                            | *                                   |                          |
| ...confirmation or otherwise of the readback of a conditional clearance   | k) [THAT IS] CORRECT (or NEGATIVE) [I SAY AGAIN] (as appropriate);                                                                                                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...request for departure from an intersection take-off position           | *l) REQUEST DEPARTURE FROM RUNWAY (number), INTERSECTION (designation or name of intersection);                                                                                            | *                                   |                          |
| ...approval of requested departure from an intersection take-off position | m) APPROVED, TAXI TO HOLDING POINT RUNWAY (number), INTERSECTION (designation or name of intersection);                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...denial of requested departure from an intersection take-off position   | n) NEGATIVE, TAXI TO HOLDING POINT RUNWAY (number), INTERSECTION (designation or name of intersection);                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...ATC-initiated intersection take-off                                    | o) ADVISE ABLE TO DEPART FROM RUNWAY (number), INTERSECTION (designation or name of intersection);                                                                                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...advising take-off run available from an intersection take-off position | p) TORA RUNWAY (number), FROM INTERSECTION (designation or name of intersection), (distance) METRES;                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...issuing multiple line-up instruction                                   | q) LINE UP AND WAIT RUNWAY (number), INTERSECTION (name of intersection), (essential local traffic information);                                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...request for a visual departure                                         | *r) REQUEST VISUAL DEPARTURE [DIRECT] TO/UNTIL (navaid, waypoint, altitude);                                                                                                               | *                                   |                          |
| ...ATS-initiated visual departure                                         | s) ADVISE ABLE TO ACCEPT VISUAL DEPARTURE [DIRECT] TO/UNTIL (navaid, waypoint/altitude);                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...clearance for visual departure                                         | t) VISUAL DEPARTURE RUNWAY (number) APPROVED, TURN LEFT/RIGHT [DIRECT] TO (navaid, heading, waypoint) [MAINTAIN VISUAL REFERENCE UNTIL (altitude)];                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...read-back of visual departure clearance                                | *u) VISUAL DEPARTURE TO/UNTIL (navaid, waypoint/altitude);<br><br>‘*’ denotes pilot transmission.<br><br>‘†’ When there is the possibility of confusion during multiple runway operations. | *                                   |                          |

‘‡’ Provisions concerning the use of conditional clearances are contained in [SERA.8015\(ec\)](#).

*Note. — ‘TORA’ is pronounced ‘TOR-AH’.*

#### 1.4.11 Take-off clearance

...when reduced runway separation is used

...when take-off clearance has not been complied with

...to cancel a take-off clearance

...to stop a take-off after an aircraft has commenced take-off roll

...for helicopter operations

a) RUNWAY (number) CLEARED FOR TAKE-OFF [REPORT AIRBORNE];

b) (traffic information) RUNWAY (number) CLEARED FOR TAKE-OFF;

c) TAKE OFF IMMEDIATELY OR VACATE RUNWAY [(instructions)];

d) TAKE OFF IMMEDIATELY OR HOLD SHORT OF RUNWAY;

e) HOLD POSITION, CANCEL TAKE-OFF I SAY AGAIN CANCEL TAKE-OFF (reasons);

\*f) HOLDING;

g) STOP IMMEDIATELY [(repeat aircraft call sign) STOP IMMEDIATELY];

\*h) STOPPING;

i) CLEARED FOR TAKE-OFF [FROM (location)] (present position, taxiway, final approach and take-off area, runway and number);

\*j) REQUEST DEPARTURE INSTRUCTIONS;

k) AFTER DEPARTURE TURN RIGHT (or LEFT, or CLIMB) (instructions as appropriate).

‘\*’ denotes pilot transmission; ‘HOLDING’ and ‘STOPPING’ are the procedural responses to e) and g) respectively.

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#### 1.4.12 Turn or climb instructions after take-off

...to request airborne time

\*a) REQUEST RIGHT (or LEFT) TURN;

b) RIGHT (or LEFT) TURN APPROVED;

c) WILL ADVISE LATER FOR RIGHT (or LEFT) TURN;

d) REPORT AIRBORNE;

\*

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|                                              |                                                                                                                                                                                                                                                                                       |                                     |                                     |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| ...heading to be followed                    | e) AIRBORNE ( <i>time</i> );                                                                                                                                                                                                                                                          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                              | f) AFTER PASSING ( <i>level</i> ) ( <i>instructions</i> );                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                              | g) CONTINUE RUNWAY HEADING ( <i>instructions</i> );                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                              | h) TRACK EXTENDED CENTRE LINE ( <i>instructions</i> );                                                                                                                                                                                                                                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                              | i) CLIMB STRAIGHT AHEAD ( <i>instructions</i> ).                                                                                                                                                                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| ‘*’ denotes pilot transmission.              |                                                                                                                                                                                                                                                                                       |                                     |                                     |
| 1.4.13 Entering an aerodrome traffic circuit | *a) [ <i>aircraft type</i> ] ( <i>position</i> ) ( <i>level</i> ) FOR LANDING;                                                                                                                                                                                                        | *                                   |                                     |
|                                              | b) JOIN [( <i>direction of circuit</i> )] ( <i>position in circuit</i> ) 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> )]; | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                              | c) [( <i>direction of circuit</i> )] 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> )];                                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                              | d) 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> )];                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                              | *e) ( <i>aircraft type</i> ) ( <i>position</i> ) ( <i>level</i> ) INFORMATION ( <i>ATIS identification</i> ) FOR LANDING;                                                                                                                                                             | *                                   |                                     |
|                                              | f) JOIN ( <i>position in circuit</i> ) [RUNWAY ( <i>number</i> )] QNH (or QFE) ( <i>number</i> ) [( <i>units</i> )] [TRAFFIC ( <i>detail</i> )];                                                                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                              | g) ( <i>direction of circuit</i> ) [RUNWAY ( <i>number</i> )] QNH (or QFE) ( <i>number</i> ) [( <i>units</i> )] [TRAFFIC ( <i>detail</i> )].                                                                                                                                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| ‘*’ denotes pilot transmission.              |                                                                                                                                                                                                                                                                                       |                                     |                                     |
| 1.4.14 In the circuit                        | *a) ( <i>position in circuit, e.g. DOWNWIND/FINAL</i> );                                                                                                                                                                                                                              | *                                   |                                     |
|                                              | b) NUMBER ... FOLLOW ( <i>aircraft type and position</i> ) [ <i>additional instructions if required</i> ];                                                                                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

|        |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |                                                                                                                                                                                                                                                                                                                                                                           | c) TRAFFIC ( <i>detail</i> ) [additional information if required];<br><br>d) REPORT ( <i>position in circuit</i> ).<br><br><i>**</i> denotes pilot transmission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/> <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                  |
| 1.4.15 | Approach instructions<br><br><i>Note. — The report 'LONG FINAL' is made when an aircraft turns 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.</i>                                    | a) MAKE SHORT APPROACH;<br><br>b) MAKE LONG APPROACH (or EXTEND DOWNWIND);<br><br>c) REPORT BASE (or FINAL, or LONG FINAL);<br><br>d) CONTINUE APPROACH [PREPARE FOR POSSIBLE GO-AROUND].                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/>                                                                                                                                                                                                                 |
| 1.4.16 | Landing clearance<br><br>...when reduced runway separation is used<br><br>...special operations<br><br>...to make an approach along, or parallel to, a runway, descending to an agreed minimum level<br><br>...to fly past the control tower or other observation point for the purpose of visual inspection by persons on the ground<br><br>...for helicopter operations | a) RUNWAY ( <i>number</i> ) CLEARED TO LAND;<br><br>b) ( <i>traffic information</i> ) RUNWAY ( <i>number</i> ) CLEARED TO LAND;<br><br>c) CLEARED TOUCH AND GO;<br><br>d) MAKE FULL STOP;<br><br>*e) REQUEST LOW APPROACH ( <i>reasons</i> );<br><br>f) CLEARED LOW APPROACH [RUNWAY ( <i>number</i> )] [( <i>altitude restriction if required</i> ) ( <i>go-around instructions</i> )];<br><br>*g) REQUEST LOW PASS ( <i>reasons</i> );<br><br>h) CLEARED LOW PASS [ <i>as in f</i> ];<br><br>*i) REQUEST STRAIGHT-IN (or CIRCLING APPROACH, LEFT or RIGHT) TURN TO ( <i>location</i> );<br><br>j) MAKE STRAIGHT-IN (or CIRCLING APPROACH, LEFT or RIGHT) TURN TO ( <i>location, runway, taxiway,</i> | <input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><br>*<br><input checked="" type="checkbox"/> <input type="checkbox"/><br><br>*<br><input checked="" type="checkbox"/> <input type="checkbox"/><br><br>*<br><input checked="" type="checkbox"/> <input type="checkbox"/> |

*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.*

*'\*' denotes pilot transmission.*

**1.4.17 Delaying aircraft**

a) CIRCLE THE AERODROME;



b) ORBIT (RIGHT, *or* LEFT) [FROM PRESENT POSITION];



c) MAKE ANOTHER CIRCUIT.


**1.4.18 Missed approach**

a) GO AROUND;



\*b) GOING AROUND.

\*

*'\*' denotes pilot transmission.*

**1.4.19 Information to aircraft**

...when pilot requested visual inspection of landing gear

a) LANDING GEAR APPEARS DOWN;



b) RIGHT (*or* LEFT, *or* NOSE) WHEEL APPEARS UP (*or* DOWN);

c) WHEELS APPEAR UP;



d) RIGHT (*or* LEFT, *or* NOSE) WHEEL DOES NOT APPEAR UP (*or* DOWN);



...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;



...other traffic

h) TRAFFIC (*details*);



|                                                                                                                                                                                                                                                                  |                                                  |                                                                                                                                                                                                                  |                                     |                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| Information on the actual use of the runway<br><br><i>Note. — Information on the actual use of the runway in points i) and j) may be provided to aircraft at any phase of the flight, in particular in the circuit and during the preparation for departure.</i> |                                                  | i) NO REPORTED TRAFFIC RUNWAY ( <i>number</i> );                                                                                                                                                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                                                                                                                                                                                                                                                  |                                                  | j) RUNWAY ( <i>number</i> ) OCCUPIED [or BLOCKED BY] ( <i>details</i> ) [REPORT INTENTIONS].                                                                                                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 1.4.20                                                                                                                                                                                                                                                           | Runway vacating and communications after landing | a) CONTACT GROUND ( <i>frequency</i> );                                                                                                                                                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                                                                                                                                                                  |                                                  | b) WHEN VACATED CONTACT GROUND ( <i>frequency</i> );                                                                                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                                                                                                                                                                  |                                                  | c) EXPEDITE VACATING;                                                                                                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                                                                                                                                                                  |                                                  | d) YOUR STAND (or GATE) ( <i>designation</i> );                                                                                                                                                                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                                                                                                                                                                  |                                                  | e) TAKE (or TURN) FIRST (or SECOND, or CONVENIENT) LEFT (or RIGHT) AND CONTACT GROUND ( <i>frequency</i> );                                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                                                                                                                                                                  | ...for helicopter operations                     | f) AIR-TAXI TO HELICOPTER STAND / HELICOPTER PARKING POSITION ( <i>area</i> );                                                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                                                                                                                                                                  |                                                  | g) AIR-TAXI TO (or VIA) ( <i>location or routing as appropriate</i> ) [CAUTION ( <i>dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.</i> )];                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                                                                                                                                                                  |                                                  | h) AIR-TAXI VIA ( <i>direct, as requested, or specified route</i> ) TO ( <i>location, heliport, operating or movement area, active or inactive runway</i> ). AVOID ( <i>aircraft or vehicles or personnel</i> ). | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

#### 1.5 Phraseologies to be used related to controller–pilot data link communications (CPDLC)

| Section | Circumstances       | Phraseologies                                            | Applicable to                       |                          |
|---------|---------------------|----------------------------------------------------------|-------------------------------------|--------------------------|
|         |                     |                                                          | ATC                                 | FIS                      |
| 1.5.1   | Operational status  |                                                          |                                     |                          |
|         | ...failure of CPDLC | a) [ALL STATIONS] CPDLC FAILURE ( <i>instructions</i> ); | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

|                                                                                                               |                                                                                                                              |                                     |                          |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| ...failure of a single CPDLC message                                                                          | b) CPDLC MESSAGE FAILURE ( <i>appropriate clearance, instruction, information or request</i> );                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...to correct CPDLC clearances, instructions, information or requests                                         | c) DISREGARD CPDLC ( <i>message type</i> ) MESSAGE, BREAK ( <i>correct clearance, instruction, information or request</i> ); | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...to instruct all stations or a specific flight to avoid sending CPDLC requests for a limited period of time | d) [ALL STATIONS] STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [ <i>reason</i> ];                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ...to resume normal use of CPDLC                                                                              | e) [ALL STATIONS] RESUME NORMAL CPDLC OPERATIONS.                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## 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

| Section | Circumstances              | Phraseologies                                                                                                                      | Applicable to                       |                                     |
|---------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
|         |                            |                                                                                                                                    | ATC                                 | FIS                                 |
| 2.1.1   | Identification of aircraft | a) REPORT HEADING [AND FLIGHT LEVEL (or ALTITUDE)];                                                                                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|         |                            | b) FOR IDENTIFICATION TURN LEFT (or RIGHT) HEADING ( <i>three digits</i> );                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|         |                            | c) TRANSMIT FOR IDENTIFICATION AND REPORT HEADING;                                                                                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|         |                            | d) RADAR CONTACT [ <i>position</i> ];                                                                                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|         |                            | e) IDENTIFIED [ <i>position</i> ];                                                                                                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|         |                            | f) NOT IDENTIFIED [ <i>reason</i> ], [RESUME (or CONTINUE) OWN NAVIGATION];                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|         |                            | g) NOT IDENTIFIED [ <i>reason</i> ].                                                                                               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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> )). | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

**2.1.3**      **Vectoring instructions**

- |                                                                                                                   |                                     |                          |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| a) LEAVE ( <i>significant point</i> ) HEADING ( <i>three digits</i> );                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) CONTINUE HEADING ( <i>three digits</i> );                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) CONTINUE PRESENT HEADING;                                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) FLY HEADING ( <i>three digits</i> );                                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) TURN LEFT ( <i>or RIGHT</i> ) HEADING ( <i>three digits</i> )<br>[ <i>reason</i> ];                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) TURN LEFT ( <i>or RIGHT</i> ) ( <i>number of degrees</i> )<br>DEGREES [ <i>reason</i> ];                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) STOP TURN HEADING ( <i>three digits</i> );                                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| h) FLY HEADING ( <i>three digits</i> ), WHEN ABLE<br>PROCEED DIRECT ( <i>name</i> ) ( <i>significant point</i> ); | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| i) HEADING IS GOOD.                                                                                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**2.1.4**      **Termination of vectoring**

- |                                                                                                                                                                           |                                     |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| a) RESUME OWN NAVIGATION ( <i>position of aircraft</i> )<br>( <i>specific instructions</i> );                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) RESUME OWN NAVIGATION [DIRECT] ( <i>significant<br/>point</i> ) [MAGNETIC TRACK ( <i>three digits</i> ) DISTANCE<br>( <i>number</i> ) KILOMETRES ( <i>or MILES</i> )]. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**2.1.5**      **Manoeuvres**

...(in case of unreliable directional  
instruments on board aircraft)

- |                                                                                                                                                                                                                                                                             |                                     |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| a) MAKE A THREE SIXTY TURN LEFT ( <i>or RIGHT</i> )<br>[ <i>reason</i> ];                                                                                                                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) ORBIT LEFT ( <i>or RIGHT</i> ) [ <i>reason</i> ];                                                                                                                                                                                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) MAKE ALL TURNS RATE ONE ( <i>or RATE HALF, or<br/>(number) DEGREES PER SECOND</i> ) START AND STOP<br>ALL TURNS ON THE COMMAND 'NOW';                                                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) TURN LEFT ( <i>or RIGHT</i> ) NOW;                                                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) STOP TURN NOW.                                                                                                                                                                                                                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <p><i>Note. — When it is necessary to specify a reason for<br/>vectoring or for the above-mentioned manoeuvres,<br/>the following phraseologies should be used:</i></p> <p style="margin-left: 40px;">a) DUE TRAFFIC;</p> <p style="margin-left: 40px;">b) FOR SPACING;</p> |                                     |                          |

|       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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|       |               | c) FOR DELAY;<br>d) FOR DOWNWIND (or BASE, or FINAL).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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                                               |  |
| 2.1.6 | Speed control | a) REPORT SPEED;<br><br>*b) SPEED (number) KILOMETRES PER HOUR (or KNOTS);<br><br>c) MAINTAIN (number) KILOMETRES PER HOUR (or KNOTS) [OR GREATER (or OR LESS)] [UNTIL (significant point)];<br><br>d) DO NOT EXCEED (number) KILOMETRES PER HOUR (or KNOTS);<br><br>e) MAINTAIN PRESENT SPEED;<br><br>f) INCREASE (or REDUCE) SPEED TO (number) KILOMETRES PER HOUR (or KNOTS) [OR GREATER (or OR LESS)];<br><br>g) INCREASE (or REDUCE) SPEED BY (number) KILOMETRES PER HOUR (or KNOTS);<br><br>h) RESUME NORMAL SPEED;<br><br>i) REDUCE TO MINIMUM APPROACH SPEED;<br><br>j) REDUCE TO MINIMUM CLEAN SPEED;<br><br>k) RESUME PUBLISHED SPEED;<br><br><br>l) NO [ATC] SPEED RESTRICTIONS.<br><br>‘*’ denotes pilot transmission.<br><br><i>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.</i> | <input checked="" type="checkbox"/><br>*<br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input 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type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/><br><br><input checked="" type="checkbox"/> < |  |

|                                                                                                                              |                                                                                                                                                                 |                                     |                                     |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| ...to omit position reports                                                                                                  | a) OMIT POSITION REPORTS [UNTIL ( <i>specify</i> )];                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                              | b) NEXT REPORT AT ( <i>significant point</i> );                                                                                                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                              | c) REPORTS REQUIRED ONLY AT ( <i>significant point(s)</i> );                                                                                                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                              | d) RESUME POSITION REPORTING.                                                                                                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2.1.8 Traffic information and avoiding action                                                                                | a) TRAFFIC ( <i>number</i> ) O'CLOCK ( <i>distance</i> ) ( <i>direction of flight</i> ) [ <i>any other pertinent information</i> ];                             | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 1) UNKNOWN;                                                                                                                                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 2) SLOW MOVING;                                                                                                                                                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 3) FAST MOVING;                                                                                                                                                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 4) CLOSING;                                                                                                                                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 5) OPPOSITE ( <i>or</i> SAME) DIRECTION;                                                                                                                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 6) OVERTAKING;                                                                                                                                                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 7) CROSSING LEFT TO RIGHT ( <i>or</i> RIGHT TO LEFT);                                                                                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 8) ( <i>aircraft type</i> );                                                                                                                                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 9) ( <i>level</i> );                                                                                                                                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                              | 10) [YOUR CLEARED LEVEL]                                                                                                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| ...when passing level information on to aircraft climbing or descending, in the form of vertical distance from other traffic | 11) CLIMBING ( <i>or</i> DESCENDING);                                                                                                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| ...to request avoiding action                                                                                                | *b) REQUEST VECTORS;                                                                                                                                            | *                                   |                                     |
|                                                                                                                              | c) DO YOU WANT VECTORS?;                                                                                                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| ...when passing unknown traffic                                                                                              | d) CLEAR OF TRAFFIC [ <i>appropriate instructions</i> ];                                                                                                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| ...for avoiding action                                                                                                       | e) TURN LEFT ( <i>or</i> RIGHT) IMMEDIATELY HEADING ( <i>three digits</i> ) TO AVOID [UNIDENTIFIED] TRAFFIC ( <i>bearing by clock-reference and distance</i> ); | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|                                                                                                                              | f) TURN LEFT ( <i>or</i> RIGHT) ( <i>number of degrees</i> ) DEGREES IMMEDIATELY TO AVOID [UNIDENTIFIED]                                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

TRAFFIC AT (*bearing by clock-reference and distance*).

'\*' denotes pilot transmission.

2.1.9 Communications and loss of communications

...if loss of communications suspected

a) [IF] RADIO CONTACT LOST (*instructions*);

☒
☒

b) IF NO TRANSMISSIONS RECEIVED FOR (*number*) MINUTES (*or SECONDS*) (*instructions*);

☒
☐

c) REPLY NOT RECEIVED (*instructions*);

☒
☒

d) IF YOU READ (*manoeuvre instructions*);

☒
☐

e) IF YOU READ [*SQUAWK (code) or IDENT*]);

☒
☒

f) (*manoeuvre, SQUAWK or IDENT*) OBSERVED. POSITION (*position of aircraft*) [*(instructions)*].

☒
☒

2.1.10 Termination of radar and/or ADS-B service

a) RADAR SERVICE (*or IDENTIFICATION*) TERMINATED [*DUE (reason)*] (*instructions*);

☒
☒

b) WILL SHORTLY LOSE IDENTIFICATION (*appropriate instructions or information*);

☒
☒

c) IDENTIFICATION LOST [*reasons*] (*instructions*).

☒
☒

2.1.11 Radar and/or ADS-B equipment degradation

a) SECONDARY RADAR OUT OF SERVICE (*appropriate information as necessary*);

☒
☒

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

| Section | Circumstances                                                                 | Phraseologies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Applicable to                       |                          |
|---------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
|         |                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ATC                                 | FIS                      |
| 2.2.1   | Vectoring for approach                                                        | <p>a) VECTORIZING FOR <i>(type of approach)</i> APPROACH RUNWAY <i>(number)</i>;</p> <p>b) VECTORIZING FOR VISUAL APPROACH RUNWAY <i>(number)</i> REPORT FIELD <i>(or RUNWAY)</i> IN SIGHT;</p> <p>c) VECTORIZING FOR <i>(positioning in the circuit)</i>;</p> <p>d) VECTORIZING FOR SURVEILLANCE RADAR APPROACH RUNWAY <i>(number)</i>;</p> <p>e) VECTORIZING FOR PRECISION APPROACH RUNWAY <i>(number)</i>;</p> <p>f) <i>(type)</i> APPROACH NOT AVAILABLE DUE <i>(reason)</i> <i>(alternative instructions)</i>.</p> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2.2.2   | Vectoring for ILS and other approach procedures                               | <p>a) POSITION <i>(number)</i> KILOMETRES <i>(or MILES)</i> from x). TURN LEFT <i>(or RIGHT)</i> HEADING <i>(three digits)</i>;</p> <p>b) YOU WILL INTERCEPT (FINAL APPROACH COURSE <i>or radio aid</i>) <i>(distance)</i> FROM <i>(significant point or TOUCHDOWN)</i>;</p>                                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|         | ...when a pilot wishes to be positioned at a specific distance from touchdown | *c) REQUEST <i>(distance)</i> FINAL;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | *                                   |                          |
|         | ...instructions and information                                               | <p>d) CLEARED FOR <i>(type of approach)</i> APPROACH RUNWAY <i>(number)</i>;</p> <p>e) REPORT ESTABLISHED ON LOCALISER <i>(or ON [GLS/RNP/MLS] [FINAL] APPROACH [COURSE])</i>;</p> <p>f) CLOSING FROM LEFT <i>(or RIGHT)</i> [REPORT ESTABLISHED];</p> <p>g) TURN LEFT <i>(or RIGHT)</i> HEADING <i>(three digits)</i> [TO INTERCEPT] <i>or</i> [REPORT ESTABLISHED];</p> <p>h) EXPECT VECTOR ACROSS THE ( LOCALISER <i>or</i> [GLS/RNP/MLS] FINAL APPROACH COURSE <i>or radio aid</i>) <i>(reason)</i>;</p>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

|         |                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                              |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                                                                                                                                                                                                                                                                                        | <p>i) THIS TURN WILL TAKE YOU THROUGH THE (LOCALIZER or [GLS/RNP/MLS] FINAL APPROACH COURSE or radio aid) [(reason)];</p> <p>j) TAKING YOU THROUGH THE (LOCALISER or [GLS/RNP/MLS] FINAL APPROACH COURSE or radio aid) [(reason)];</p> <p>k) MAINTAIN (altitude) UNTIL GLIDE PATH INTERCEPTION;</p> <p>l) REPORT ESTABLISHED ON GLIDE PATH;</p> <p>m) INTERCEPT (LOCALISER or [GLS/RNP/MLS] [FINAL] APPROACH [COURSE] or radio aid) [RUNWAY (number)] [REPORT ESTABLISHED].</p> <p>‘*’ denotes pilot transmission.</p>                                                                                                                                                               | <input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/> |
| 2.2.3   | <p>Manoeuvre during independent and dependent parallel approaches</p> <p>...for avoidance action when an aircraft is observed penetrating the NTZ</p> <p>...for avoidance action below 120 m (400 ft) above the runway threshold elevation where parallel approach obstacle assessment surfaces (PAOAS) criteria are being applied</p> | <p>a) CLEARED FOR (type of approach) APPROACH RUNWAY (number) LEFT (or RIGHT);</p> <p>b) YOU HAVE CROSSED THE LOCALISER (or GLS/RNP/MLS FINAL APPROACH COURSE). TURN LEFT (or RIGHT) IMMEDIATELY AND RETURN TO THE LOCALISER (or GLS/RNP/MLS FINAL APPROACH COURSE) [RUNWAY (number)];</p> <p>c) ILS (or MLS) RUNWAY (number) LEFT (or RIGHT) LOCALISER (or MLS) FREQUENCY IS (frequency);</p> <p>d) TURN LEFT (or RIGHT) (number) DEGREES (or HEADING) (three digits) IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH], CLIMB TO (altitude);</p> <p>e) CLIMB TO (altitude) IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH] (other instructions).</p> | <input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/><br><input checked="" type="checkbox"/> <input type="checkbox"/> |
| 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)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <input checked="" type="checkbox"/> <input type="checkbox"/>                                                                                                                                                                                                                                                                 |

|                                |                                                                                                                                                              |                                     |                          |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
|                                | FROM TOUCHDOWN, OBSTACLE CLEARANCE ALTITUDE (or HEIGHT) ( <i>number</i> ) METRES (or FEET) CHECK YOUR MINIMA [IN CASE OF GO-AROUND ( <i>instructions</i> )]; |                                     |                          |
|                                | b) APPROACH INSTRUCTIONS WILL BE TERMINATED AT ( <i>distance</i> ) FROM TOUCHDOWN.                                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2.2.4.2 Elevation              | a) COMMENCE DESCENT NOW [TO MAINTAIN A ( <i>number</i> ) DEGREE GLIDE PATH];                                                                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                | b) ( <i>distance</i> ) FROM TOUCHDOWN ALTITUDE (or HEIGHT) SHOULD BE ( <i>numbers and units</i> ).                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2.2.4.3 Position               | ( <i>distance</i> ) FROM TOUCHDOWN.                                                                                                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2.2.4.4 Checks                 | a) CHECK GEAR DOWN [AND LOCKED];                                                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                | b) OVER THRESHOLD.                                                                                                                                           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2.2.4.5 Completion of approach | a) REPORT VISUAL;                                                                                                                                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                | b) REPORT RUNWAY [LIGHTS] IN SIGHT;                                                                                                                          | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                | c) APPROACH COMPLETED [CONTACT ( <i>unit</i> )].                                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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

| Section | Circumstances                                    | Phraseologies                                                                                                                                                             | Applicable to                       |                                     |
|---------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
|         |                                                  |                                                                                                                                                                           | ATC                                 | FIS                                 |
| 2.3.1   | To request the capability of the SSR equipment   | a) ADVISE TRANSPONDER CAPABILITY;<br><br>*b) TRANSPONDER ( <i>as shown in the flight plan</i> );<br><br>*c) NEGATIVE TRANSPONDER.<br><br>'**' denotes pilot transmission. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2.3.2   | To request the capability of the ADS-B equipment | a) ADVISE ADS-B CAPABILITY;<br><br>*b) ADS-B TRANSMITTER ( <i>data link</i> );<br><br>*c) ADS-B RECEIVER ( <i>data link</i> );<br><br>*d) NEGATIVE ADS-B.                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

|       |                                                                                 |                                                                                                                               |                                                                                                                                                          |                                                                                                                                                          |
|-------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                                                                 | '*' denotes pilot transmission.                                                                                               |                                                                                                                                                          |                                                                                                                                                          |
| 2.3.3 | To instruct setting of transponder                                              | a) FOR DEPARTURE SQUAWK <i>(code)</i> ;<br>b) SQUAWK <i>(code)</i> .                                                          | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                                                               | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                                                               |
| 2.3.4 | To request the pilot to reselect the assigned mode and code                     | a) RESET SQUAWK <i>[(mode)] (code)</i> ;<br><br>*b) RESETTING <i>[(mode)] (code)</i> .<br><br>'*' denotes pilot transmission. | <input checked="" type="checkbox"/><br><br>*                                                                                                             | <input checked="" type="checkbox"/><br><br>                                                                                                              |
| 2.3.5 | To request reselection of aircraft identification                               | RE-ENTER [ADS-B or MODE S] AIRCRAFT IDENTIFICATION.                                                                           | <input checked="" type="checkbox"/>                                                                                                                      | <input checked="" type="checkbox"/>                                                                                                                      |
| 2.3.6 | To request the pilot to confirm the code selected on the aircraft's transponder | a) CONFIRM SQUAWK <i>(code)</i> ;<br><br>*b) SQUAWKING <i>(code)</i> .<br><br>'*' denotes pilot transmission.                 | <input checked="" type="checkbox"/><br><br>*                                                                                                             | <input checked="" type="checkbox"/><br><br>                                                                                                              |
| 2.3.7 | To request the operation of the IDENT feature                                   | a) SQUAWK <i>[(code)] [AND] IDENT</i> ;<br>b) SQUAWK LOW;<br>c) SQUAWK NORMAL;<br>d) TRANSMIT ADS-B IDENT.                    | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> |
| 2.3.8 | To request temporary suspension of transponder operation                        | SQUAWK STANDBY.                                                                                                               | <input checked="" type="checkbox"/>                                                                                                                      | <input checked="" type="checkbox"/>                                                                                                                      |
| 2.3.9 | To request emergency code                                                       | SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].                                                                                   | <input checked="" type="checkbox"/>                                                                                                                      | <input checked="" type="checkbox"/>                                                                                                                      |

|                                                                                 |                                                                                               |                                     |                                     |
|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 2.3.10 To request termination of transponder and/or ADS-B transmitter operation | a) STOP SQUAWK [TRANSMIT ADS-B ONLY];<br><br>b) STOP ADS-B TRANSMISSION [SQUAWK (code) ONLY]. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                 |                                                                                               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

*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.*

|                                                     |                                                       |                                     |                                     |
|-----------------------------------------------------|-------------------------------------------------------|-------------------------------------|-------------------------------------|
| 2.3.11 To request transmission of pressure-altitude | a) SQUAWK CHARLIE;<br><br>b) TRANSMIT ADS-B ALTITUDE. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                     |                                                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

|                                                                    |                                                 |                                     |                                     |
|--------------------------------------------------------------------|-------------------------------------------------|-------------------------------------|-------------------------------------|
| 2.3.12 To request pressure setting check and confirmation of level | a) CHECK ALTIMETER SETTING AND CONFIRM (level). | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|--------------------------------------------------------------------|-------------------------------------------------|-------------------------------------|-------------------------------------|

|                                                                                             |                                                                                                                      |                                     |                                     |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| 2.3.13 To request termination of pressure-altitude transmission because of faulty operation | a) STOP SQUAWK CHARLIE WRONG INDICATION;<br><br>b) STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, or reason)]. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                             |                                                                                                                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

|                               |                  |                                     |                                     |
|-------------------------------|------------------|-------------------------------------|-------------------------------------|
| 2.3.14 To request level check | CONFIRM (level). | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|-------------------------------|------------------|-------------------------------------|-------------------------------------|

|                                                                                                                                     |                                                                                                                                                                                                                                                                                             |                                     |                          |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|
| 2.3.15 Controller queries a discrepancy between the displayed 'Selected Level' and the cleared level                                | CHECK SELECTED LEVEL. CLEARED LEVEL IS (level);<br><br>CHECK SELECTED LEVEL. CONFIRM CLIMBING (or DESCENDING) TO (or MAINTAINING) (level);<br><br>*CLIMBING (or DESCENDING) TO (or MAINTAINING) (level) (appropriate information on selected level).<br><br>'*' denotes pilot transmission. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <i>Note. — The controller will not state on radiotelephony the value of the 'Selected Level' observed on the situation display.</i> |                                                                                                                                                                                                                                                                                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                     |                                                                                                                                                                                                                                                                                             | *                                   | *                        |

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

#### 3.1 General ADS-C phraseologies

| Section | Circumstances     | Phraseologies                                                                     | Applicable to                                                |
|---------|-------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------|
|         |                   |                                                                                   | ATC FIS                                                      |
| 3.1.1   | ADS-C degradation | ADS-C (or ADS-CONTRACT) OUT OF SERVICE<br>(appropriate information as necessary). | <input checked="" type="checkbox"/> <input type="checkbox"/> |

### 4. ALERTING PHRASEOLOGIES

#### 4.1 Alerting phraseologies

| Section | Circumstances        | Phraseologies                                                                                                                                       | Applicable to                                                           |
|---------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|         |                      |                                                                                                                                                     | ATC FIS                                                                 |
| 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)]. | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| 4.1.2   | Terrain alert        | (aircraft call sign) TERRAIN ALERT, (suggested pilot action, if possible).                                                                          | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |

### 5. GROUND CREW/FLIGHT CREW PHRASEOLOGIES

#### 5.1 Ground crew/flight crew phraseologies

| Section | Circumstances                                | Phraseologies                                                                                                                                                                                                                                                                                                                                                                                                                                  | Applicable to |
|---------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|         |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                | ATC FIS       |
| 5.1.1   | Starting procedures<br>(ground crew/cockpit) | a) [ARE YOU] READY TO START UP?;<br><br>*b) STARTING NUMBER (engine number(s)).<br><br><i>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.</i><br><br><i>Note 2. — Unambiguous identification of the parties concerned is essential in any communications between ground crew and pilots.</i> |               |

'\*' denotes pilot transmission.

5.1.2 Pushback procedures  
...(ground crew/cockpit)

- a) ARE YOU READY FOR PUSHBACK?;
- \*b) READY FOR PUSHBACK;
- c) CONFIRM BRAKES RELEASED;
- \*d) BRAKES RELEASED;
- e) COMMENCING PUSHBACK;
- f) PUSHBACK COMPLETED;
- \*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.

**5.2 De-icing/anti-icing operations**

| <b>Section</b> | <b>Circumstances</b>                                                                                                                                                                | <b>Phraseologies</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.2.1          | <p>Prior to de-icing/anti-icing (ground crew (iceman) / flight crew)</p> <p>...aircraft configuration confirmation</p>                                                              | <p>a) STANDING BY TO DE-ICE. CONFIRM BRAKES SET AND TREATMENT REQUIRED;</p> <p>*b) [AFFIRM] BRAKES SET, REQUEST (<i>type of de/anti-icing treatment and areas to be treated</i>);</p> <p>c) HOLD POSITION AND CONFIRM AIRCRAFT CONFIGURED;</p> <p>*d) [AFFIRM] AIRCRAFT CONFIGURED, READY FOR DE-ICING;</p> <p>e) DE-ICING STARTS NOW.</p> <p>‘*’ denotes pilot transmission.</p>                                                                                                                                                                                                                                                                                                                                                                       |
| 5.2.2          | <p>Upon concluding de-icing/anti-icing procedure</p> <p>...for de-icing operation</p> <p>...for a two-step de-icing/anti-icing operation</p> <p>...de-icing/anti-icing complete</p> | <p>a) DE-ICING ON (<i>areas treated</i>) COMPLETE. ADVISE WHEN READY FOR INFORMATION;</p> <p>b) TYPE OF FLUID (<i>Type I or II or III or IV</i>);</p> <p>c) HOLDOVER TIME STARTED AT (<i>time</i>);</p> <p>d) ANTI-ICING CODE (<i>appropriate anti-icing code</i>).</p> <p><i>Note. – Anti-icing code example:</i></p> <p><i>A de-icing/anti-icing procedure whose last step is the use of a mixture of 75 % of a Type II fluid and 25 % of water, commencing at 13:35 local time, is recorded as follows:</i></p> <p><i>TYPE II/75 13:35 (followed by the complete name of the anti-icing fluid).</i></p> <p>e) FINAL STEP STARTED AT (<i>time</i>);</p> <p>f) POST DE-ICING CHECK COMPLETED;</p> <p>g) PERSONNEL AND EQUIPMENT CLEAR OF AIRCRAFT.</p> |

**5.2.3 Abnormal operations**

...for spray nozzle proximity  
sensor activation

a) BE ADVISED NOZZLE PROXIMITY ACTIVATION  
ON (*significant point on aircraft*) [NO VISUAL  
DAMAGE or DAMAGE (*description of damage*)  
OBSERVED] [SAY INTENTIONS];

...for other aircraft having an  
emergency in the de-icing  
bay

b) EMERGENCY IN DE-ICING BAY (*de-icing bay  
number*) [SHUT DOWN ENGINES or STANDBY  
FOR FURTHER INSTRUCTIONS].

**6. AIR TRAFFIC FLOW MANAGEMENT (ATFM)**
**6.1 ATFM**

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

a) SLOT (*time*);



*Change to CTOT resulting from a  
slot revision message (SRM).*

b) REVISED SLOT (*time*);



*CTOT cancellation resulting from a  
slot cancellation message (SLC).*

c) SLOT CANCELLED, REPORT READY;



*Flight suspension until further  
notice (resulting from flight  
suspension message (FLS)).*

d) FLIGHT SUSPENDED UNTIL FURTHER NOTICE,  
DUE (*reason*);



*Flight de-suspension resulting  
from a de-suspension message  
(DES).*

e) SUSPENSION CANCELLED, REPORT READY;



*Denial of start-up when requested  
too late to comply with the given  
CTOT.*

f) 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.*

g) UNABLE TO APPROVE START-UP CLEARANCE DUE  
SLOT (*time*), REQUEST START-UP AT (*time*).


**GM1 Appendix 1 to AMC1 SERA.14001 General**

ED Decision 2021/014/R

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.

## GM2 Appendix 1 to AMC1 SERA.14001 General

ED Decision 2021/014/R

The phraseologies listed in [Appendix 1 to AMC1 SERA.14001](#) are organised per phases of flight or per use of specific communication, navigation and surveillance technologies that require the exchange of specific communication between ATS personnel or ground crew and flight crews.

With regard to the communications between flight crews and ATS personnel, the tables specify the ATS phraseologies to be used to perform ATC service or FIS functions respectively. Consequently, the two rightmost columns indicate which of the ATS phraseologies are to be used for ATC functions, for FIS functions, or for both ATC and FIS functions.

In general, the subject SERA phraseologies constitute a standardised core content of identified phrases for usual situations; they do not constitute an exhaustive list. When circumstances differ, pilots, ATS personnel and other ground crew will be expected to use plain language which should be as clear and concise as possible and, when applicable, in the level specified in the relevant rules on language proficiency.

## GM1 SERA.14001 General

ED Decision 2016/023/R

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

ED Decision 2016/023/R

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.

## SERA.14005 Categories of messages

Regulation (EU) 2016/1185

- (a) The categories of messages handled by the aeronautical mobile service, and the order of priority in the establishment of communications and the transmission of messages shall be in accordance with Table S14-1.

| Table S14-1                                                                        |                            |
|------------------------------------------------------------------------------------|----------------------------|
| Message category and radiotelephony order of priority signal                       | Radiotelephony signal      |
| (a) Distress calls, distress messages and distress traffic                         | MAYDAY                     |
| (b) Urgency messages, including messages preceded by the medical transports signal | PAN PAN or PAN PAN MEDICAL |
| (c) Communications relating to direction finding                                   | —                          |
| (d) Flight safety messages                                                         | —                          |
| (e) Meteorological messages                                                        | —                          |
| (f) Flight regularity messages                                                     | —                          |

- (b) Distress messages and distress traffic shall be handled in accordance with the provisions of point [SERA.14095](#).
- (c) Urgency messages and urgency traffic, including messages preceded by the medical transports signal, shall be handled in accordance with the provisions of point [SERA.14095](#).

## SERA.14010 Flight safety messages

Regulation (EU) 2016/1185

Flight safety messages shall comprise the following:

- (a) movement and control messages;
- (b) messages originated by an aircraft operator or by an aircraft, of immediate concern to an aircraft in flight;
- (c) meteorological advice of immediate concern to an aircraft in flight or about to depart (individually communicated or for broadcast);
- (d) other messages concerning aircraft in flight or about to depart.

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

Regulation (EU) 2016/1185

- (a) The air-ground radiotelephony communications shall be conducted in the English language or in the language normally used by the station on the ground.
- (b) The English language shall be available, on request of any aircraft, at all stations on the ground serving designated aerodromes and routes used by international air services. Unless otherwise prescribed by the competent authority for specific cases, the English language shall be used for communications between the ATS unit and aircraft, at aerodromes with more than 50000 international IFR movements per year. Member States, where at the date of entry into force of this Regulation, the English language is not the only language used for communications between the ATS unit and aircraft at such aerodromes, may decide not to apply the requirement to use the English language and inform the Commission accordingly. In that case, those Member States shall, by 31 December 2017 at the latest, conduct a study on the possibility to require the use of the English language for communications between the ATS unit and aircraft at those aerodromes for reasons of safety, so as to avoid incursions of aircraft on an occupied runway or other safety risks, while taking into account the applicable provisions of Union and national law on the use of languages. They shall make that study public and communicate its conclusions to the Agency and the Commission.
- (c) The languages available at a given station on the ground shall form part of the Aeronautical Information Publications and other published aeronautical information concerning such facilities.

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

ED Decision 2016/023/R

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

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

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

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

ED Decision 2016/023/R

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; and
- (c) 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

ED Decision 2016/023/R

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.

## SERA.14020 Word spelling in radiotelephony

Regulation (EU) 2016/1185

When proper names, service abbreviations and words of which the spelling is doubtful are spelled out in radiotelephony, the alphabet in the Table S14-2 shall be used.

| Table S14-2                          |          |                                                           |
|--------------------------------------|----------|-----------------------------------------------------------|
| The radiotelephony spelling alphabet |          |                                                           |
| Letter                               | Word     | Approximate pronunciation (Latin alphabet representation) |
| A                                    | Alfa     | <u>AL</u> FAH                                             |
| B                                    | Bravo    | <u>BRAH</u> VOH                                           |
| C                                    | Charlie  | <u>CHAR</u> LEE or <u>SHAR</u> LEE                        |
| D                                    | Delta    | <u>DELL</u> TAH                                           |
| E                                    | Echo     | <u>ECK</u> OH                                             |
| F                                    | Foxtrot  | <u>FOKS</u> TROT                                          |
| G                                    | Golf     | GOLF                                                      |
| H                                    | Hotel    | HO <u>TELL</u>                                            |
| I                                    | India    | <u>IN</u> DEE AH                                          |
| J                                    | Juliett  | <u>JEW</u> LEE <u>ETT</u>                                 |
| K                                    | Kilo     | <u>KEY</u> LOH                                            |
| L                                    | Lima     | <u>LEE</u> MAH                                            |
| M                                    | Mike     | MIKE                                                      |
| N                                    | November | NO <u>VEM</u> BER                                         |
| O                                    | Oscar    | <u>OSS</u> CAH                                            |
| P                                    | Papa     | PAH <u>PAH</u>                                            |
| Q                                    | Quebec   | KEH <u>BECK</u>                                           |
| R                                    | Romeo    | <u>ROW</u> ME OH                                          |
| S                                    | Sierra   | SEE <u>AIR</u> RAH                                        |
| T                                    | Tango    | <u>TANG</u> GO                                            |
| U                                    | Uniform  | YOU NEE FORM or <u>OO</u> NEE FORM                        |
| V                                    | Victor   | <u>VIK</u> TAH                                            |
| W                                    | Whiskey  | <u>WISS</u> KEY                                           |
| X                                    | X-ray    | <u>ECKS</u> RAY                                           |
| Y                                    | Yankee   | <u>YANG</u> KEY                                           |
| Z                                    | Zulu     | <u>ZOO</u> LOO                                            |

*In the approximate representation using the Latin alphabet, syllables to be emphasised are underlined.*

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

*Regulation (EU) 2016/1185*

- (a) Use of ATS route designators in communications
- (1) In voice communications, the basic letter of a designator shall be spoken in accordance with the spelling alphabet as defined in [Table S14-2](#).
  - (2) Where the prefixes K, U or S are used, they shall, in voice communications, be spoken as follows:
    - (i) K — KOPTER
    - (ii) U — UPPER
    - (iii) S — SUPERSONIC

- (b) The word 'kopter' shall be pronounced as in the word 'helicopter' and the words 'upper' and 'supersonic' as in the English language.

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

ED Decision 2016/023/R

### 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.

## SERA.14026 Significant points

Regulation (EU) 2016/1185

Normally the plain language name for significant points marked by the site of a radio navigation aid, or the unique five-letter pronounceable 'name-code' for significant points not marked by the site of a radio navigation aid, shall be used to refer to the significant point in voice communications. If the plain language name for the site of a radio navigation aid is not used, it shall be replaced by the coded designator which, in voice communications, shall be spoken in accordance with the spelling alphabet.

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

Regulation (EU) 2016/1185

The plain language designator for standard instrument departure or arrival routes shall be used in voice communications.

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

ED Decision 2016/023/R

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.

## SERA.14035 Transmission of numbers in radiotelephony

Regulation (EU) 2024/404

- (a) Transmission of numbers
  - (1) All numbers used in the transmission of aircraft call sign, headings, wind direction and speed, and runway shall be transmitted by pronouncing each digit separately.
    - (i) Flight levels shall be transmitted by pronouncing each digit separately, except for the case of flight levels in whole hundreds.

- (ii) The altimeter setting shall be transmitted by pronouncing each digit separately, except for the case of a setting of 1 000 hPa, which shall be transmitted as “ONE THOUSAND”.
  - (iii) All numbers used in the transmission of transponder codes shall be transmitted by pronouncing each digit separately except that, when the transponder codes contain whole thousands only, the information shall be transmitted by pronouncing the digit in the number of thousands followed by the word “THOUSAND”.
- (2) All numbers used in transmission of other information than those described in point (a)(1) shall be transmitted by pronouncing each digit separately, except that all numbers containing whole hundreds and whole thousands shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word ‘HUNDRED’ or ‘THOUSAND’, as appropriate. Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word ‘THOUSAND’, followed by the number of hundreds followed by the word ‘HUNDRED’.
  - (3) In cases where there is a need to clarify the number transmitted as whole thousands and/or whole hundreds, the number shall be transmitted by pronouncing each digit separately.
  - (4) When providing information regarding the relative bearing to an object or to conflicting traffic in terms of the 12-hour clock, the information shall be given pronouncing the digits together such as ‘TEN O’CLOCK’ or ‘ELEVEN O’CLOCK’.
  - (5) Numbers containing a decimal point shall be transmitted as prescribed in point (a)(1) with the decimal point in appropriate sequence, indicated by the word ‘DECIMAL’.
  - (6) All six digits of the numerical designator shall be used to identify the transmitting channel in very high frequency (VHF) radiotelephony communications, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits shall be used.

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

ED Decision 2024/007/R

### CALL SIGN, HEADING, RUNWAY AND WIND

The following examples illustrate the application.

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

| headings    | transmitted as                 |
|-------------|--------------------------------|
| 100 degrees | heading <b>one zero zero</b>   |
| 080 degrees | heading <b>zero eight zero</b> |

| runway | transmitted as           |
|--------|--------------------------|
| 27     | runway <b>two seven</b>  |
| 30     | runway <b>three zero</b> |

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

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

ED Decision 2016/023/R

### FLIGHT LEVELS

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

### ALTIMETER SETTING

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

### TRANSPONDER CODES

The following examples illustrate the application.

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

**GM5 SERA.14035(a)(2) Transmission of numbers in radiotelephony**

ED Decision 2024/007R

**INDICATED AIRSPEED**

The following examples illustrate the application.

| Indicated airspeed | transmitted as      |
|--------------------|---------------------|
| 250 knots          | two five zero knots |
| 300 knots          | three hundred knots |

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

ED Decision 2016/023/R

**ALTITUDE**

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

**CLOUD HEIGHT**

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

**VISIBILITY**

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

**RUNWAY VISUAL RANGE**

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

**DECIMALS**

The following examples illustrate the application.

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

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

ED Decision 2016/023/R

**TRANSMISSION OF NUMBERS FOR RADIOTELEPHONY CHANNEL FREQUENCIES**

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

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

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

**SERA.14040 Pronunciation of numbers**

Regulation (EU) 2016/1185

When the language used for communication is English, numbers shall be transmitted using the pronunciation shown in Table S14-3:

| Table S14-3                |               |
|----------------------------|---------------|
| Numeral or numeral element | Pronunciation |
| 0                          | ZE-RO         |
| 1                          | WUN           |
| 2                          | TOO           |
| 3                          | TREE          |
| 4                          | FOW-er        |
| 5                          | FIFE          |
| 6                          | SIX           |
| 7                          | SEV-en        |
| 8                          | AIT           |
| 9                          | NIN-er        |
| 10                         | TEN           |
| 11                         | EE-LE-VEN     |
| 12                         | TWELF         |
| Decimal                    | DAY-SEE-MAL   |
| Hundred                    | HUN-dred      |
| Thousand                   | TOU-SAND      |

## SERA.14045 Transmitting technique

Regulation (EU) 2024/404

- (a) Transmissions shall be conducted concisely in a normal conversational tone.
- (b) The following words and phrases shall be used in radiotelephony communications as appropriate and shall have the meaning ascribed in Table S14-4:

| Table S14-4     |                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------|
| Phrase          | Meaning                                                                                                           |
| ACKNOWLEDGE     | 'Let me know that you have received and understood this message.'                                                 |
| AFFIRM          | 'Yes.'                                                                                                            |
| APPROVED        | 'Permission for proposed action granted.'                                                                         |
| BREAK           | 'I hereby indicate the separation between portions of the message.'                                               |
| BREAK BREAK     | 'I hereby indicate the separation between messages transmitted to different aircraft in a very busy environment.' |
| CANCEL          | 'Annul the previously transmitted clearance.'                                                                     |
| CHECK           | 'Examine a system or procedure.'                                                                                  |
| CLEARED         | 'Authorised to proceed under the conditions specified.'                                                           |
| CONFIRM         | 'I request verification of: (clearance, instruction, action, information).'                                       |
| CONTACT         | 'Establish communications with...'                                                                                |
| CORRECT         | 'True' or 'Accurate'.                                                                                             |
| CORRECTION      | 'An error has been made in this transmission (or message indicated). The correct version is...'                   |
| DISREGARD       | 'Ignore.'                                                                                                         |
| HOW DO YOU READ | 'What is the readability of my transmission?' (see point <a href="#">SERA.14070(c)</a> )                          |
| I SAY AGAIN     | 'I repeat for clarity or emphasis.'                                                                               |
| MAINTAIN        | 'Continue in accordance with the condition(s) specified' or in its literal sense.                                 |

| Table S14-4  |                                                                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phrase       | Meaning                                                                                                                                                                                                                         |
| MONITOR      | 'Listen out on (frequency).'                                                                                                                                                                                                    |
| NEGATIVE     | 'No' or 'Permission not granted' or 'That is not correct' or 'Not capable'.                                                                                                                                                     |
| OVER         | 'My transmission is ended, and I expect a response from you.'                                                                                                                                                                   |
| OUT          | 'This exchange of transmissions is ended and no response is expected.'                                                                                                                                                          |
| READ BACK    | 'Repeat all, or the specified part, of this message back to me exactly as received.'                                                                                                                                            |
| RECLEARED    | 'A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof.'                                                                                                      |
| REPORT       | 'Pass me the following information...'                                                                                                                                                                                          |
| REQUEST      | 'I should like to know...' or 'I wish to obtain...'                                                                                                                                                                             |
| ROGER        | 'I have received all of your last transmission.'                                                                                                                                                                                |
| SAY AGAIN    | 'Repeat all, or the following part, of your last transmission.'                                                                                                                                                                 |
| SPEAK SLOWER | 'Reduce your rate of speech.'                                                                                                                                                                                                   |
| STANDBY      | 'Wait and I will call you.'                                                                                                                                                                                                     |
| UNABLE       | 'I cannot comply with your request, instruction, or clearance.'                                                                                                                                                                 |
| WILCO        | (Abbreviation for 'will comply')<br>'I understand your message and will comply with it.'                                                                                                                                        |
| WORDS TWICE  | (a) As a request: 'Communication is difficult. Please send every word, or group of words, twice.'<br>(b) As information: 'Since communication is difficult, every word, or group of words, in this message will be sent twice.' |

- (c) The expression "TAKE-OFF" shall only be used in radiotelephony when an aircraft is cleared for take-off or when cancelling a take-off clearance.

## GM1 SERA.14045 Transmitting technique

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### MAINTAIN

For example, 'Maintain VFR'.

**GM4 SERA.14045 Transmitting technique**

ED Decision 2016/023/R

**OVER**

'OVER' is not normally used in VHF communications.

**GM5 SERA.14045 Transmitting technique**

ED Decision 2016/023/R

**OUT**

'OUT' is not normally used in VHF communications.

**GM6 SERA.14045 Transmitting technique**

ED Decision 2016/023/R

**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**

ED Decision 2016/023/R

**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**

ED Decision 2016/023/R

**UNABLE**

'UNABLE' is normally followed by a reason.

**SERA.14050 Radiotelephony call signs for aircraft**

Regulation (EU) 2016/1185

**(a) Full call signs:**

An aircraft radiotelephony call sign shall be one of the following types:

- (1) Type (a) — the characters corresponding to the registration marking of the aircraft; or
- (2) Type (b) — the telephony designator of the aircraft operator, followed by the last four characters of the registration marking of the aircraft;
- (3) Type (c) — the telephony designator of the aircraft operator, followed by the flight identification.

**(b) Abbreviated call signs:**

The aircraft radiotelephony call signs shown in point (a), with the exception of Type (c), may be abbreviated under the circumstances prescribed in point [SERA.14055\(c\)](#). Abbreviated call signs shall be in the following form:

- (1) Type (a) — the first character of the registration and at least the last two characters of the call sign;
- (2) Type (b) — the telephony designator of the aircraft operator, followed by at least the last two characters of the call sign;
- (3) Type (c) — no abbreviated form.

## AMC1 SERA.14050 Radiotelephony call signs for aircraft

ED Decision 2024/007/R

### AIRCRAFT RADIOTELEPHONY CALL SIGN SETTING

Unless otherwise instructed by the air traffic controller in accordance with point (a) of point [SERA.14055](#), the Mode S- or ADS-B-equipped aircraft should use a radiotelephony call sign corresponding to the aircraft identification specified in the flight plan or, when operating without a flight plan, a radiotelephony call sign corresponding to the aircraft identification transmitted by the Mode S transponder or ADS-B transmitter.

## GM1 SERA.14050 Radiotelephony call signs for aircraft

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### EXAMPLES OF FULL AND ABBREVIATED CALL SIGNS

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

\*The examples illustrate the application of [GM1 SERA.14050](#).

## SERA.14055 Radiotelephony procedures

Regulation (EU) 2016/1185

- (a) An aircraft shall not change the type of its radiotelephony call sign during flight, except temporarily on the instruction of an ATC unit in the interests of safety. Except for reasons of safety, no transmission shall be directed to an aircraft during take-off, during the last part of the final approach or during the landing roll.
- (b) Establishment of radiotelephony communications
  - (1) Full radiotelephony call signs shall always be used when establishing communication. When establishing communication, aircraft shall start their call by the designation of the station called, followed by the designation of the station calling.
  - (2) The reply to the above calls shall use the call sign of the station calling, followed by the call sign of the station answering, which shall be considered an invitation to proceed with

transmission by the station calling. For transfers of communication within one ATS unit, the call sign of the ATS unit may be omitted, when so authorised by the competent authority.

- (3) Communications shall commence with a call and a reply when it is desired to establish contact, except that, when it is certain that the station called will receive the call, the calling station may transmit the message, without waiting for a reply from the station called.

(c) Subsequent radiotelephony communications

- (1) Abbreviated radiotelephony call signs, as prescribed in point [SERA.14050\(b\)](#), shall be used only after satisfactory communication has been established and provided that no confusion is likely to arise. An aircraft shall use its abbreviated call sign only after it has been addressed in this manner by the aeronautical station.
- (2) When issuing ATC clearances and reading back such clearances, controllers and pilots shall always add the call sign of the aircraft to which the clearance applies. For other than those occasions, continuous two-way communication after contact has been established shall be permitted without further identification or call until termination of the contact.

## GM1 SERA.14055(b) Radiotelephony procedures

ED Decision 2016/023/R

### RADIOTELEPHONY CALLING PROCEDURE\*

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

\* In certain cases where the call is initiated by the aeronautical station, the call may be 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

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

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

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

ED Decision 2016/023/R

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.

## SERA.14060 Transfer of VHF communications

Regulation (EU) 2016/1185

- (a) An aircraft shall be advised by the appropriate ATS unit to transfer from one radio frequency to another in accordance with agreed procedures. In the absence of such advice, the aircraft shall notify the ATS unit before such a transfer takes place.
- (b) When establishing initial contact on, or when leaving, a VHF frequency, an aircraft shall transmit such information as may be prescribed by the ANSP responsible for the provision of services and approved by the competent authority.

## SERA.14065 Radiotelephony procedures for air-ground voice communication channel changeover

Regulation (EU) 2024/404

- (a) Unless otherwise prescribed by the ANSP responsible for the provision of services and approved by the competent authority, the initial call to an air traffic services unit after a change of the air-ground voice communication channel shall contain the following elements:
  - (1) the designation of the ATS unit being called;
  - (2) call sign, immediately followed by the word “Heavy” or “Super” corresponding, as appropriate, to the wake turbulence category of the aircraft;
  - (3) level, including passing and cleared levels, if not maintaining the cleared level;
  - (4) speed, if assigned by ATC; and
  - (5) additional elements, as required by the ANSP responsible for the provision of services and approved by the competent authority.
- (b) Pilots shall provide level information at the nearest full 30 m or 100 ft as indicated on the pilot's altimeter.
- (c) Initial call to aerodrome control tower  
For aircraft being provided with aerodrome control service, the initial call shall contain:
  - (1) the designation of the ATS unit being called;
  - (2) call sign, immediately followed by the word “Heavy” or “Super” corresponding, as appropriate, to the wake turbulence category of the aircraft;
  - (3) position; and
  - (4) additional elements, as required by the ANSP responsible for the provision of services and approved by the competent authority.

## SERA.14070 Test procedures

Regulation (EU) 2016/1185

- (a) The form of test transmissions shall be as follows:
  - (1) the identification of the station being called;

- (2) the identification of the station calling;
- (3) the words 'RADIO CHECK';
- (4) the frequency being used.
- (b) The reply to a test transmission shall be as follows:
  - (1) the identification of the station requesting the test;
  - (2) the identification of the station replying;
  - (3) information regarding the readability of the station requesting the test transmission.
- (c) When the tests are made, the following readability scale shall be used:

Readability Scale

  - (1) 1 Unreadable
  - (2) 2 Readable now and then
  - (3) 3 Readable but with difficulty
  - (4) 4 Readable
  - (5) 5 Perfectly readable

## **SERA.14075 Exchange of communications**

*Regulation (EU) 2016/1185*

- (a) Communications shall be concise and unambiguous, using standard phraseology whenever available.
  - (1) When transmitted by an aircraft, the acknowledgement of receipt of a message shall comprise the call sign of that aircraft.
  - (2) When acknowledgement of receipt is transmitted by an ATS unit to an aircraft, it shall comprise the call sign of the aircraft, followed if considered necessary, by the call sign of the ATS unit.
- (b) End of conversation.

A radiotelephone conversation shall be terminated by the receiving ATS unit or the aircraft using its own call sign.
- (c) Corrections and repetitions
  - (1) When an error has been made in transmission, the word 'CORRECTION' shall be spoken, the last correct group or phrase repeated, and then the correct version transmitted.
  - (2) If a correction can best be made by repeating the entire message, the phrase 'CORRECTION, I SAY AGAIN' shall be used before the message is transmitted a second time.
  - (3) If the receiving station is in doubt as to the correctness of the message received, a repetition either in full or in part shall be requested.
  - (4) If repetition of an entire message is required, the words 'SAY AGAIN' shall be spoken. If repetition of a portion of a message is required, the phrase: 'SAY AGAIN ALL BEFORE... (first word satisfactorily received)' shall be used; or 'SAY AGAIN... (word before missing

portion) TO...(word after missing portion)'; or 'SAY AGAIN ALL AFTER... (last word satisfactorily received)'.

- (d) If, in checking the correctness of a read-back, incorrect items are noticed, the words 'NEGATIVE I SAY AGAIN' shall be transmitted at the conclusion of the read-back followed by the correct version of the items concerned.

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

ED Decision 2016/023/R

### REPETITIONS

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

## SERA.14080 Communications watch/Hours of service

Regulation (EU) 2016/1185

- (a) During flight, aircraft shall maintain watch as required by the competent authority and shall not cease watch, except for reasons of safety, without informing the ATS unit concerned.
- (1) Aircraft on long over-water flights or on flights over designated areas over which the carriage of an emergency locator transmitter (ELT) is required, shall continuously guard the VHF emergency frequency 121,5 MHz, except for those periods when aircraft carry out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.
- (2) Aircraft shall continuously guard the VHF emergency frequency 121,5 MHz in areas or over routes where the possibility of interception of aircraft or other hazardous situations exists, and a requirement has been established by the competent authority.
- (b) Aeronautical stations shall maintain a continuous listening watch on VHF emergency channel 121,5 MHz during the hours of service of the units at which it is installed. Where two or more such stations are co-located, provision of 121,5 MHz listening watch at one of them shall meet that requirement.
- (c) When it is necessary for an aircraft or ATS unit to suspend operation for any reason, it shall, if possible, so inform other stations concerned, giving the time at which it is expected that operation will be resumed. When operation is resumed, other stations concerned shall be so informed. When it is necessary to suspend operation beyond the time specified in the original notice, a revised time of resumption of operation shall, if possible, be transmitted at or near the time first specified.

## AMC1 SERA.14080 Communications watch/Hours of service

ED Decision 2016/023/R

### 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.

**SERA.14083 Radio communication failure procedures**

Regulation (EU) 2024/404

- (a) When an aircraft is unable to comply with [SERA.8035](#), point (a), the flight crew shall attempt to establish contact on the previous channel used and, if not successful, on another channel appropriate to the route. If these attempts fail, the flight crew shall attempt to establish communication with:
- (1) the appropriate air traffic services unit;
  - (2) other air traffic services units; or
  - (3) other aircraft,
- using all available means, including, inter alia, data link, satellite voice and mobile phones and, when successful, advise that contact on the assigned channel could not be established.
- (b) When an expected communication from an aircraft has not been received within a time period such that the occurrence of a communication failure is suspected, or when requested by other air traffic services units, the air traffic controller shall call the aircraft on the frequencies on which the aircraft is believed to be listening, and:
- (1) when providing surveillance service, the air traffic controller shall normally determine whether or not the aircraft's receiver is functioning, and if successful, continue providing air traffic control service using SSR code/ADS-B transmission changes or IDENT transmissions to obtain acknowledgement of clearances issued to the aircraft;
  - (2) if not successful, the air traffic control unit shall:
    - (i) request other air traffic services units to render assistance by calling the aircraft and relaying messages, if necessary;
    - (ii) request aircraft on the route to attempt to establish communication with the aircraft and relay messages, if necessary;
    - (iii) initiate the notification to the aircraft operator, as soon as possible, of any failure in air-ground communication;
  - (3) if the attempts described in points (2)(i) and (2)(ii) fail, blind transmission of air traffic control clearances shall not be made to aircraft, except at the specific request of the originator. Other messages should be transmitted by blind transmission on the frequencies on which the aircraft is believed to be listening.
- (c) When an aircraft is unable to comply with point [SERA.8035](#)(a) and the attempts described in point (a) of SERA.14083 to establish communications are not successful, the radio communication failure procedures described below shall be applied:
- (1) The aircraft, when forming part of the aerodrome traffic at a controlled aerodrome, shall keep a watch for instructions as may be issued by visual signals.
  - (2) The aircraft shall set the transponder on Mode A Code 7600 and/or set the ADS-B transmitter to indicate the loss of air-ground communications and comply with the procedures described in points (3), (4), (5) and (6), as appropriate.
  - (3) A VFR flight shall continue to fly in visual meteorological conditions, land at the nearest suitable aerodrome, and report its arrival by the most expeditious means to the appropriate air traffic services unit.

- 
- (4) Except as provided for in point (5), an IFR flight shall:
- (i) maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following:
    - (A) the aircraft's failure to make a required report; or
    - (B) the time the transponder is set to 7600 and/or the appropriate ADS-B emergency and/or urgency mode is transmitted if surveillance service is provided,and thereafter adjust level and speed in accordance with the filed flight plan as amended by delay and modification messages to the filed flight plan;
  - (ii) when being vectored or having been directed by ATC to proceed offset using area navigation (RNAV):
    - (A) with a specified limit, continue to that limit, then rejoin the last received and acknowledged route, taking into consideration the applicable minimum flight altitude; or
    - (B) without a specified limit, rejoin the last received and acknowledged route no later than the next significant point, taking into consideration the applicable minimum flight altitude;
  - (iii) proceed according to the last received and acknowledged route clearance to the appropriate designated navigation aid or fix serving the destination aerodrome and, when required to ensure compliance with point (iv) below, hold over this aid or fix until commencement of descent;
  - (iv) commence descent from the navigation aid or fix specified in point (iii) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival;
  - (v) complete an instrument approach procedure as specified for the designated navigation aid or fix; and
  - (vi) land, if possible, within 30 minutes after the estimated time of arrival specified in point (iv) or the last acknowledged expected approach time, whichever is later.
- (5) An IFR flight following a standard instrument departure route or a standard instrument arrival route shall comply with the procedures for radio communication failure specified on the Standard Departure Chart – Instrument (SID) or Standard Arrival Chart – Instrument (STAR), when provided.
- (6) If an IFR flight encounters visual meteorological conditions and the pilot-in-command decides to continue to fly in visual meteorological conditions, the pilot shall set Mode A Code 7601, land at the nearest suitable aerodrome, and report arrival by the most expeditious means to the appropriate air traffic services unit.
- (d) The provision of air traffic control service to flights operating in the airspace concerned shall be based on the premise that an aircraft experiencing communication failure complies with point (c).
- (e) As soon as it is known that an aircraft operating in its area of responsibility is experiencing an apparent radio communication failure, an air traffic control unit shall forward information concerning the radio communication failure to all air traffic services units concerned along the

route of flight. The area control centre in whose area the destination aerodrome is located shall take steps to obtain information on the alternate aerodrome(s) and other relevant information specified in the filed flight plan, if such information is not available.

- (f) When an air traffic control unit receives information that an aircraft, after experiencing a communication failure, has re-established communication or has landed, that unit shall inform the air traffic control unit in whose area the aircraft was operating at the time the failure occurred, and other air traffic services units concerned along the route of flight, giving necessary information for the continuation of control if the aircraft continues its flight.
- (g) The signals used in case of communication failure shall be in accordance with [Appendix 1](#).

### AMC1 SERA.14083(b)(1) Radio communication failure procedures

ED Decision 2024/007/R

#### ATC UNIT ATTEMPT TO ESTABLISH COMMUNICATION WITH AIRCRAFT

The air traffic controller should determine whether or not the aircraft's receiver is functioning by instructing the aircraft on the channel so far used, or on any other available channel on which it is believed that the aircraft might be listening, to acknowledge by making a specified manoeuvre and by observing the aircraft's track, or by instructing the aircraft to operate IDENT or to make SSR code and/or ADS-B transmission changes. Any manoeuvring instructions should be such that the aircraft would regain its current cleared track after having complied with the instructions received.

### GM1 SERA.14083(b)(1) Radio communication failure procedures

ED Decision 2024/007/R

#### ATC UNIT ATTEMPT TO ESTABLISH COMMUNICATION WITH AIRCRAFT

Some aircraft equipped with first-generation ADS-B avionics do not have the capability of squawking IDENT while the emergency and/or urgency mode is selected.

### AMC1 SERA.14083(b)(3) Radio communication failure procedures

ED Decision 2024/007/R

#### BLIND TRANSMISSION OF OTHER MESSAGES

Appropriate information describing the action taken by the air traffic control unit, or instructions justified by any emergency situation, should be transmitted by blind transmission for the attention of the aircraft concerned, on the frequencies available on which the aircraft is believed to be listening, including, as far as practicable, the voice frequencies of available radio navigation or approach aids. Information should also be given concerning:

- (a) meteorological conditions favourable to a cloud-breaking procedure in areas where congested traffic may be avoided; and
- (b) meteorological conditions at suitable aerodromes.

### GM1 SERA.14083(c) Radio communication failure procedures

ED Decision 2024/007/R

#### RADIO COMMUNICATION FAILURE PROCEDURE — MULTIPLE AIRCRAFT

The air-ground voice communication failure procedures specifically address failure of communications affecting a single aircraft. In situations where multiple aircraft may be involved,

especially when operating in an environment where high-frequency communications are used as primary means for voice communication, the safety of operations is best assured when aircraft adhere to the last ATC clearance received and acknowledged, similarly to the case of ground radio station failure.

## GM2 SERA.14083(c) Radio communication failure procedures

ED Decision 2024/007/R

### LANDING AT THE NEAREST SUITABLE AERODROME

When assessing the suitability of an aerodrome for landing, the pilot should consider runway characteristics, aerodrome facilities and the complexity of the operating environment at that aerodrome.

## GM1 SERA.14083(c)(4)(i)(B) Radio communication failure procedures

ED Decision 2024/007/R

### AIRCRAFT ADS-B CAPABILITIES

Some aircraft equipped with first-generation ADS-B avionics can transmit a general emergency alert only, regardless of the code selected by the pilot.

## AMC1 SERA.14083(d) Radio communication failure procedures

ED Decision 2024/007/R

### PROVISION OF AIR TRAFFIC CONTROL SERVICE IN CASE OF RADIO COMMUNICATION FAILURE

- (a) Except when the aircraft flying in accordance with instrument flight rules and experiencing communication failure transmits A7601, the air traffic controller should apply separation between that aircraft and other aircraft, based on the assumption that the aircraft will operate according to point [SERA.14083\(c\)\(3\)](#) and (4), until:
  - (1) it is determined that the aircraft is following a procedure differing from those in point [SERA.14083\(c\)\(3\)](#) and (4) (e.g. observing that the aircraft sets the transponder code 7601), and that (b) should be applied;
  - (2) through the use of electronic or other aids, the air traffic controller determines that actions differing from those required by point [SERA.14083\(c\)\(3\)](#) and (4) may be taken without impairing safety; or
  - (3) positive information is received that the aircraft has landed.
- (b) The air traffic controller should take all possible actions to safeguard all aircraft concerned based on the assumption that an aircraft operating in accordance with visual flight rules or an aircraft operating in accordance with instrument flight rules transmitting A7601 will continue to fly in visual meteorological conditions, land at the nearest suitable aerodrome and report its arrival to the appropriate air traffic services unit by the most expeditious means.
- (c) Pertinent information should be given to other aircraft in the vicinity of the position or presumed position of the aircraft experiencing the failure.
- (d) If circumstances indicate that the controlled flight experiencing a communication failure might proceed to (one of) the alternate aerodrome(s) specified in the filed flight plan, the air traffic control unit(s) serving the alternate aerodrome(s) and any other air traffic control units that

might be affected by a possible diversion should be informed of the circumstances of the failure and requested to attempt to establish communication with the aircraft at a time when the aircraft could possibly be within communication range. This should apply particularly when, by agreement with the operator or a designated representative, a clearance has been transmitted blind to the aircraft concerned to proceed to an alternate aerodrome, or when meteorological conditions at the aerodrome of intended landing are such that a diversion to an alternate is considered likely.

- (e) When an air traffic control unit at the arrival aerodrome has suspended normal operations in anticipation of the arrival of an aircraft experiencing communication failure, and that aircraft has not reported or landed within 30 minutes after:

- (1) the estimated time of arrival indicated by the pilot;
- (2) the estimated time of arrival calculated by the area control centre; or
- (3) the last acknowledged expected approach time, whichever is latest,

pertinent information concerning the aircraft should be forwarded by ATC to aircraft operators, or their designated representatives, and pilots-in-command of any aircraft concerned, and normal control should be resumed if they so desire. It is the responsibility of the aircraft operators, or their designated representatives, and pilots-in-command of aircraft to determine whether they will resume normal operations or take other action.

## GM1 SERA.14083(d) Radio communication failure procedures

ED Decision 2024/007/R

### SEPARATION FOR ATS SURVEILLANCE SERVICES

When a controlled aircraft experiencing complete communication failure is operating or expected to operate in an area and at flight levels where an ATS surveillance service is applied, separation specified in [AMC1 ATS.TR.210\(c\)\(2\)](#) may continue to be used.

## GM2 SERA.14083(d) Radio communication failure procedures

ED Decision 2024/007/R

### ALERTING SERVICE

The pertinent information to be provided as described in point (e) of [AMC1 SERA.14083\(d\)](#) does not preclude compliance with the requirements on alerting service as described in point ATS.TR.405(a)(1) of [Commission Implementing Regulation \(EU\) 2017/373](#).

## SERA.14085 Use of blind transmission

Regulation (EU) 2016/1185

- (a) When an aircraft fails to establish contact on the designated channel, on the previous channel used or on another channel appropriate to the route, and fails to establish communication with the appropriate ATS unit, other ATS unit or other aircraft using all available means, the aircraft shall transmit its message twice on the designated channel(s), preceded by the phrase 'TRANSMITTING BLIND' and, if necessary, include the addressee(s) for which the message is intended.
- (b) When an aircraft is unable to establish communication due to receiver failure, it shall transmit reports at the scheduled times, or positions, on the channel in use preceded by the phrase 'TRANSMITTING BLIND DUE TO RECEIVER FAILURE'. The aircraft shall:

- (1) transmit the intended message, following this by a complete repetition;
- (2) advise the time of its next intended transmission;
- (3) when provided with ATS, transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight.

## GM1 SERA.14085 Use of blind transmission

*ED Decision 2024/007/R*

### PROVISION OF ATC SERVICE TO OTHER FLIGHTS

The provision of air traffic control service to other flights operating in the airspace concerned will be based on the premise that an aircraft experiencing communication failure will comply with point [SERA.14083](#).

## SERA.14087 Use of relay communication technique

*Regulation (EU) 2024/404*

[Deleted.]

## SERA.14090 Specific communication procedures

*Regulation (EU) 2024/404*

### (a) Movement of vehicles

Phraseologies for the movement of vehicles on the manoeuvring area shall be the same as those used for the movement of aircraft, with the exception of taxi instructions, in which case the word “PROCEED” shall be substituted for the word “TAXI” when communicating with vehicles.

### (b) Air traffic advisory service

Air traffic advisory service does not deliver “clearances” but only “advisory information” and it shall use the word “advise” or “suggest” when a course of action is proposed to an aircraft.

### (c) Indication of heavy and super wake turbulence categories

In the initial radiotelephony contact between such aircraft and ATS units the word “heavy” or “super” corresponding, as appropriate, to the wake turbulence category of the aircraft, shall be included immediately after the aircraft call sign.

### (d) Procedures related to weather deviation

- (1) When weather deviation is required, the pilot shall initiate communications with ATC via voice or CPDLC. A rapid response may be obtained by either:
  - (i) stating “WEATHER DEVIATION REQUIRED” to indicate that priority is desired on the frequency and for ATC response; or
  - (ii) requesting a weather deviation using a CPDLC lateral downlink message.
- (2) When necessary, the pilot shall initiate communications using the urgency call “PAN PAN” (preferably spoken three times) or by using a CPDLC urgency downlink message.
- (3) The pilot shall notify the air traffic controller and request clearance to deviate from track or ATS route, advising, when possible, the extent of the deviation requested. The flight crew will use whatever means are appropriate (i.e. voice and/or CPDLC) to communicate during a weather deviation.

- (4) The pilot shall inform the air traffic controller when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to its cleared route.
- (e) Clearances on standard instrument departure and standard instrument arrival  
Clearances on SID and/or STAR shall unambiguously indicate the constraints, where applicable.

## GM1 SERA.14090(a) Specific communication procedures

*ED Decision 2024/007/R*

### VEHICLE TRAFFIC ON THE MANOEUVRING AREA

Specific communication procedures and signals are detailed in point 3.1.3 of [Appendix 1](#) 'Signals' to the Annex to Commission Implementing Regulation (EU) No 923/2012.

## GM1 SERA.14090(d)(4) Specific communication procedures

*ED Decision 2024/007/R*

### ACTIONS TO BE TAKEN WHEN AIR TRAFFIC CONTROLLER–PILOT COMMUNICATIONS ARE ESTABLISHED

Pilots should contact ATC as soon as possible with requests for clearance in order to provide adequate time for the request to be assessed and acted upon.

## AMC1 SERA.14090(e) Specific communication procedures

*ED Decision 2024/007/R*

### CLEARANCES ON STANDARD INSTRUMENT DEPARTURE (SID)

- (a) Clearances to aircraft on a SID with remaining published level and/or speed restrictions should indicate if such restrictions are to be followed or are cancelled. The following phraseologies should be used with the following meanings:
  - (1) CLIMB VIA SID TO (level):
    - (i) climb to the cleared level and comply with published level restrictions;
    - (ii) follow the lateral profile of the SID; and
    - (iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.
  - (2) CLIMB VIA SID TO (level), CANCEL LEVEL RESTRICTION(S):
    - (i) climb to the cleared level; published level restrictions are cancelled;
    - (ii) follow the lateral profile of the SID; and
    - (iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.
  - (3) CLIMB VIA SID TO (level), CANCEL LEVEL RESTRICTION(S) AT (point(s)):
    - (i) climb to the cleared level; published level restriction(s) at the specified point(s) is (are) cancelled;
    - (ii) follow the lateral profile of the SID; and

- (iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.
- (4) CLIMB VIA SID TO (level), CANCEL SPEED RESTRICTION(S):
  - (i) climb to the cleared level and comply with published level restrictions;
  - (ii) follow the lateral profile of the SID; and
  - (iii) published speed restrictions and ATC-issued speed control instructions are cancelled.
- (5) CLIMB VIA SID TO (level), CANCEL SPEED RESTRICTION(S) AT (point(s)):
  - (i) climb to the cleared level and comply with published level restrictions;
  - (ii) follow the lateral profile of the SID; and
  - (iii) published speed restrictions are cancelled at the specified point(s).
- (6) CLIMB UNRESTRICTED TO (level) or CLIMB TO (level), CANCEL LEVEL AND SPEED RESTRICTION(S):
  - (i) climb to the cleared level; published level restrictions are cancelled;
  - (ii) follow the lateral profile of the SID; and
  - (iii) published speed restrictions and ATC-issued speed control instructions are cancelled.
- (b) If there are no remaining published level or speed restrictions on the SID, the phrase CLIMB TO (level) should be used.
- (c) When subsequent speed restriction instructions are issued, and if the cleared level is unchanged, the phrase CLIMB VIA SID TO (level) should be omitted.
- (d) When a departing aircraft is cleared to proceed direct to a published waypoint on the SID, the speed and level restrictions associated with the bypassed waypoints are cancelled. All remaining published speed and level restrictions should remain applicable.
- (e) When a departing aircraft is vectored or cleared to proceed to a point that is not on the SID, all published speed and level restrictions of the SID are cancelled and the air traffic controller should:
  - (1) reiterate the cleared level;
  - (2) provide speed and level restrictions as necessary; and
  - (3) notify the pilot if it is expected that the aircraft will be instructed to subsequently rejoin the SID.
- (f) ATC instructions to an aircraft to rejoin a SID should include:
  - (1) the designator of the SID to be rejoined, unless advance notification of rejoining has been provided in accordance with point (e);
  - (2) the cleared level in accordance with point (a); and
  - (3) the position at which it is expected to rejoin the SID.

**AMC2 SERA.14090(e) Specific communication procedures**

ED Decision 2024/007/R

**CLEARANCES ON STANDARD INSTRUMENT ARRIVAL (STAR)**

- (a) Clearances to aircraft on a STAR with remaining published level and/or speed restrictions should indicate if such restrictions are to be followed or are cancelled. The following phraseologies should be used with the following meanings:
- (1) DESCEND VIA STAR TO (level):
    - (i) descend to the cleared level and comply with published level restrictions;
    - (ii) follow the lateral profile of the STAR; and
    - (iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.
  - (2) DESCEND VIA STAR TO (level), CANCEL LEVEL RESTRICTION(S):
    - (i) descend to the cleared level; published level restrictions are cancelled;
    - (ii) follow the lateral profile of the STAR; and
    - (iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.
  - (3) DESCEND VIA STAR TO (level), CANCEL LEVEL RESTRICTION(S) AT (point(s)):
    - (i) descend to the cleared level; published level restriction(s) at the specified point(s) are cancelled;
    - (ii) follow the lateral profile of the STAR; and
    - (iii) comply with published speed restrictions or ATC-issued speed control instructions as applicable.
  - (4) DESCEND VIA STAR TO (level), CANCEL SPEED RESTRICTION(S):
    - (i) descend to the cleared level and comply with published level restrictions;
    - (ii) follow the lateral profile of the STAR; and
    - (iii) published speed restrictions and ATC-issued speed control instructions are cancelled.
  - (5) DESCEND VIA STAR TO (level), CANCEL SPEED RESTRICTION(S) AT (point(s)):
    - (i) descend to the cleared level and comply with published level restrictions;
    - (ii) follow the lateral profile of the STAR; and
    - (iii) published speed restrictions are cancelled at the specified point(s).
  - (6) DESCEND UNRESTRICTED TO (level) or DESCEND TO (level), CANCEL LEVEL AND SPEED RESTRICTION(S):
    - (i) descend to the cleared level; published level restrictions are cancelled;
    - (ii) follow the lateral profile of the STAR; and
    - (iii) published speed restrictions and ATC-issued speed control instructions are cancelled.

- (b) If there are no remaining published level or speed restrictions on the STAR, the phrase DESCEND TO (level) should be used.
- (c) When subsequent speed restriction instructions are issued and if the cleared level is unchanged, the phrase DESCEND VIA STAR TO (level) should be omitted.
- (d) When an arriving aircraft is cleared to proceed direct to a published waypoint on the STAR, the speed and level restrictions associated with the bypassed waypoints are cancelled. All remaining published speed and level restrictions should remain applicable.
- (e) When an arriving aircraft is vectored or cleared to proceed to a point that is not on the STAR, all the published speed and level restrictions of the STAR are cancelled and the air traffic controller should:
  - (1) reiterate the cleared level;
  - (2) provide speed and level restrictions as necessary; and
  - (3) notify the pilot if it is expected that the aircraft will be instructed to subsequently rejoin the STAR.
- (f) ATC instructions to an aircraft to rejoin a STAR should include:
  - (1) the designator of the STAR to be rejoined, unless advance notification of rejoining has been provided in accordance with point (e);
  - (2) the cleared level on rejoining the STAR in accordance with point (a); and
  - (3) the position at which it is expected to rejoin the STAR.

## SERA.14095 Distress and urgency radiotelephony communication procedures

Regulation (EU) 2020/469

- (a) General
  - (1) Distress and urgency traffic shall comprise all radiotelephony messages relative to the distress and urgency conditions respectively. Distress and urgency conditions are defined as:
    - (i) *Distress* a condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.
    - (ii) *Urgency* a condition concerning the safety of an aircraft or other vehicle, or of some person on board or within sight, but which does not require immediate assistance.
  - (2) The radiotelephony distress signal 'MAYDAY' and the radiotelephony urgency signal 'PAN PAN' shall be used at the commencement of the first distress and urgency communication respectively. At the commencement of any subsequent communication in distress and urgency traffic, it shall be permissible to use the radiotelephony distress and urgency signals.
  - (3) The originator of messages addressed to an aircraft in distress or urgency condition shall restrict to the minimum the number and volume and content of such messages as required by the condition.

- (4) If no acknowledgement of the distress or urgency message is made by the ATS unit addressed by the aircraft, other ATS units shall render assistance as prescribed in points (b)(2) and (b)(3) respectively.
  - (5) Distress and urgency traffic shall normally be maintained on the frequency on which such traffic was initiated until it is considered that better assistance can be provided by transferring that traffic to another frequency.
  - (6) In cases of distress and urgency communications, in general, the transmissions by radiotelephony shall be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.
- (b) Radiotelephony distress communications
- (1) Action by the aircraft in distress

In addition to being preceded by the radiotelephony distress signal 'MAYDAY' in accordance with point (a)(2), preferably spoken three times, the distress message to be sent by an aircraft in distress shall:

    - (i) be on the air-ground frequency in use at the time;
    - (ii) consist of as many as possible of the following elements spoken distinctly and, if possible, in the following order:
      - (A) the name of the ATS unit addressed (time and circumstances permitting);
      - (B) the identification of the aircraft;
      - (C) the nature of the distress condition;
      - (D) the intention of the pilot-in-command;
      - (E) present position, level and heading.
  - (2) Action by the ATS unit addressed or by the first ATS unit acknowledging the distress message

The ATS unit addressed by an aircraft in distress, or the first ATS unit acknowledging the distress message, shall:

    - (i) immediately acknowledge the distress message;
    - (ii) take control of the communications or specifically and clearly transfer that responsibility, advising the aircraft if a transfer is made; and
    - (iii) take immediate action to ensure that all necessary information is made available, as soon as possible, to:
      - (A) the ATS unit concerned;
      - (B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements;
    - (iv) warn other ATS units, as appropriate, in order to prevent the transfer of traffic to the frequency of the distress communication.
  - (3) Imposition of silence
    - (i) The aircraft in distress, or the ATS unit in control of distress traffic, shall be permitted to impose silence, either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It shall address these

- instructions ‘to all stations’ or to one station only, according to the circumstances. In either case, it shall use:
- (A) ‘STOP TRANSMITTING’;
  - (B) the radiotelephony distress signal ‘MAYDAY’.
- (ii) The use of the signals specified in point (b)(3)(i) shall be reserved for the aircraft in distress and for the ATS unit controlling the distress traffic.
- (4) Action by all other ATS units/aircraft
- (i) The distress communications have absolute priority over all other communications and ATS units/aircraft aware of them shall not transmit on the frequency concerned unless:
    - (A) the distress is cancelled or the distress traffic is terminated;
    - (B) all distress traffic has been transferred to other frequencies;
    - (C) the ATS unit controlling communications gives permission;
    - (D) it has itself to render assistance.
  - (ii) Any ATS unit/aircraft which has knowledge of distress traffic, and which cannot itself assist the aircraft in distress, shall nevertheless continue listening to such traffic until it is evident that assistance is being provided.
- (5) Termination of distress communications and of silence
- (i) When an aircraft is no longer in distress, it shall transmit a message cancelling the distress condition.
  - (ii) When the ATS unit which has controlled the distress communication traffic becomes aware that the distress condition is ended, it shall take immediate action to ensure that this information is made available, as soon as possible, to:
    - (A) the ATS units concerned;
    - (B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements.
  - (iii) The distress communication and silence conditions shall be terminated by transmitting a message, including the words ‘DISTRESS TRAFFIC ENDED’, on the frequency or frequencies being used for the distress traffic. This message shall be originated only by the ATS unit controlling the communications when, after the reception of the message prescribed in point (b)(5)(i), it is authorised to do so by the competent authority.
- (c) Radiotelephony urgency communications
- (1) Action by the aircraft reporting an urgency condition except as indicated in point (c)(4)
- In addition to being preceded by the radiotelephony urgency signal ‘PAN PAN’ in accordance with point (a)(2), preferably spoken three times and each word of the group pronounced as the French word ‘panne’, the urgency message to be sent by an aircraft reporting an urgency condition shall:
- (i) be on the air-ground frequency in use at the time;
  - (ii) consist of as many as required of the following elements spoken distinctly and, if possible, in the following order:

- (A) the name of the ATS unit addressed;
  - (B) the identification of the aircraft;
  - (C) the nature of the urgency condition;
  - (D) the intention of the pilot-in-command;
  - (E) present position, level and heading;
  - (F) any other useful information.
- (2) Action by the ATS unit addressed or first ATS unit acknowledging the urgency message
- The ATS unit addressed by an aircraft reporting an urgency condition or the first ATS unit acknowledging the urgency message shall:
- (i) acknowledge the urgency message;
  - (ii) take immediate action to ensure that all necessary information is made available, as soon as possible, to:
    - (A) the ATS unit concerned;
    - (B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements;
  - (iii) if necessary, exercise control of communications.
- (3) Action by all other ATS units/aircraft
- The urgency communications have priority over all other communications except distress communications and all ATS units/aircraft shall take care not to interfere with the transmission of urgency traffic.
- (4) Action by an aircraft used for medical transports
- (i) The use of the signal described in point (c)(4)(ii) shall indicate that the message which follows concerns a protected medical transport pursuant to the 1949 Geneva Conventions and Additional Protocols.
  - (ii) For the purpose of announcing and identifying aircraft used for medical transports, a transmission of the radiotelephony urgency signal 'PAN PAN', preferably spoken three times, and each word of the group pronounced as the French word 'panne', shall be followed by the radiotelephony signal for medical transports 'MAY-DEE-CAL', pronounced as in the French 'medical'. The use of the signals described above indicates that the message which follows concerns a protected medical transport.
- The message shall convey the following data:
- (A) the call sign or other recognised means of identification of the medical transports;
  - (B) position of the medical transports;
  - (C) number and type of the medical transports;
  - (D) intended route;
  - (E) estimated time en-route and of departure and arrival, as appropriate; and
  - (F) any other information such as flight altitude, radio frequencies guarded, languages used and secondary surveillance radar modes and codes.

- (5) Action by the ATS units addressed, or by other stations receiving a medical transports message  
  
The provisions of points (c)(2) and (c)(3) shall apply as appropriate to ATS units receiving a medical transports message.
- (d) As laid down in Article 4a the VHF emergency frequency (121,500 MHz) shall be used for genuine emergency purposes including any of the following:
  - (1) to provide a clear channel between aircraft in distress or emergency and a ground station when the normal channels are being utilised for other aircraft;
  - (2) to provide a VHF communication channel between aircraft and aerodromes, not normally used by international air services, in case of an emergency condition arising;
  - (3) to provide a common VHF communication channel between aircraft, either civil or military, and between such aircraft and surface services, involved in common search and rescue operations, prior to changing when necessary to the appropriate frequency;
  - (4) to provide air-ground communication with aircraft when airborne equipment failure prevents the use of the regular channels;
  - (5) to provide a channel for the operation of emergency locator transmitters, and for communication between survival craft and aircraft engaged in search and rescue operations;
  - (6) to provide a common VHF channel for communication between civil aircraft and intercepting aircraft or intercept control units and between civil or intercepting aircraft and air traffic services units in the event of interception of the civil aircraft.

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

*ED Decision 2016/023/R*

### **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

*ED Decision 2016/023/R*

### 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

*ED Decision 2016/023/R*

### 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

*ED Decision 2016/023/R*

Any other useful information may consist of information such as but not limited to remaining aircraft endurance/fuel/energy, 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

*ED Decision 2016/023/R*

### 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.

## GM1 SERA.14095(d)(3) Distress and urgency radiotelephony communication procedures

*ED Decision 2020/007/R*

### USE OF VHF EMERGENCY FREQUENCY IN CASE OF HANDLING OF DISTRESS TRAFFIC

The use of the frequency 121.500 MHz for the purpose outlined in point (d)(3) is to be avoided if it interferes in any way with the efficient handling of distress traffic.

## SERA.14100 Notification of suspected communicable diseases or other public health risk on board an aircraft

*Regulation (EU) 2024/404*

- (a) The flight crew of an en-route aircraft shall, upon identifying a suspected case(s) of a communicable disease, or other public health risk, on board the aircraft, promptly notify the air traffic services unit with which the pilot is communicating, the information listed below:
- (1) aircraft identification;
  - (2) departure aerodrome;
  - (3) destination aerodrome;
  - (4) estimated time of arrival;
  - (5) number of persons on board;
  - (6) number of suspected cases on board; and
  - (7) nature of the public health risk, if known.
- (b) The air traffic services unit, upon receipt of information from a pilot regarding a suspected case(s) of a communicable disease, or other public health risk, on board the aircraft, shall forward a message as soon as possible to the air traffic services unit serving the destination/departure, unless procedures exist to notify the appropriate authority designated by the State and the aircraft operator or its designated representative.
- (c) When a report of a suspected case(s) of a communicable disease, or other public health risk, on board an aircraft is received by an air traffic services unit serving the destination/departure, from another air traffic services unit or from an aircraft or an aircraft operator, the unit concerned shall forward a message as soon as possible to the public health authority or the appropriate authority designated by the State as well as the aircraft operator or its designated representative, and the aerodrome operator.

## GM1 SERA.14100 Notification of suspected communicable diseases or other public health risk on board an aircraft

*ED Decision 2024/007/R*

### SYMPTOMS OF SUSPECTED COMMUNICABLE DISEASES

A communicable disease may be suspected and require further evaluation if a person has certain combined signs or symptoms: for example, fever (temperature of 38 °C/100 °F or greater), appearing obviously unwell, persistent coughing, impaired breathing, persistent diarrhoea, persistent vomiting, skin rash, bruising or bleeding without previous injury, or confusion of recent onset. [Reference to Note 1 of point 8.15 of Chapter 8 of ICAO Annex 9 – Facilitation]

## GM2 SERA.14100 Notification of suspected communicable diseases or other public health risk on board an aircraft

*ED Decision 2024/007/R*

### ACTIONS OF THE PUBLIC HEALTH AUTHORITY

The public health authority (PHA) may contact the representative or operating agency of the aircraft operator as well as the aerodrome operator, if applicable, for subsequent coordination with the

aircraft concerning clinical details and aerodrome preparation. Depending on the communication facilities available to the aircraft operator or its designated representative, it may not be possible to communicate with the aircraft until it is closer to its destination. Apart from the initial notification to the air traffic services unit while en route, ATC communication channels should be avoided.

### **GM3 SERA.14100 Notification of suspected communicable diseases or other public health risk on board an aircraft**

*ED Decision 2024/007/R*

#### **INFORMATION TO THE DEPARTURE AERODROME**

The purpose of providing information to the departure aerodrome is to prevent the potential spread of a communicable disease, or other public health risk, through other aircraft departing from the that aerodrome.

### **GM4 SERA.14100 Notification of suspected communicable diseases or other public health risk on board an aircraft**

*ED Decision 2024/007/R*

#### **MEANS OF TRANSMISSION OF INFORMATION**

The Aeronautical Fixed Telecommunications Network (AFTN) (urgency message), telephone, fax or other means of transmission may be used by the air traffic services unit.

## SECTION 15 CONTROLLER-PILOT DATA LINK COMMUNICATION (CPDLC) PROCEDURES

### SERA.15001 Data link initiation and data link initiation failure

*Regulation (EU) 2023/1772*

- (a) The logon address associated with an air traffic services unit shall be published in the national aeronautical information publications (AIPs).
- (b) Upon receipt of a valid data link initiation request from an aircraft approaching or within the data link service area, the air traffic services unit shall accept the request and, if able to correlate it with a flight plan, shall establish a connection with the aircraft.
- (c) The air traffic services provider shall establish procedures to resolve, as soon as practicable, data link initiation failures.
- (d) The aircraft operator shall establish procedures to resolve, as soon as practicable, data link initiation failures.

### SERA.15005 Establishment of CPDLC

*Regulation (EU) 2023/1772*

- (a) CPDLC shall be established in sufficient time in advance to ensure that the aircraft communicates with the appropriate air traffic control unit.
- (b) Information concerning when and, if applicable, where the air or ground systems should establish CPDLC shall be published in aeronautical information circulars or publications.
- (c) The pilot shall be able to identify the air traffic control unit that provides the air traffic control service at any time while the service is being provided.

### SERA.15010 Transfer of CPDLC

*Regulation (EU) 2023/1772*

- (a) When CPDLC is transferred, the transfer of voice communication and CPDLC shall commence concurrently.
- (b) When an aircraft is transferred from an air traffic control unit where CPDLC is available to an air traffic control unit where CPDLC is not available, the termination of CPDLC shall commence concurrently with the transfer of voice communication.
- (c) The air traffic controller shall be informed when attempting a transfer of CPDLC resulting in a change in data authority if there are data link messages for which a closure response has not been received. When the air traffic controller decides to transfer the aircraft without receiving pilot responses to the uplink message(s) outstanding, the air traffic controller shall normally revert to voice communication to clarify any ambiguity associated with the uplink message(s) outstanding.

## SERA.15015 Construction of CPDLC messages

*Regulation (EU) 2023/1772*

- (a) The text of CPDLC messages shall be composed in standard message format, in plain language, or in abbreviations and codes. Plain language shall be avoided when the length of the text can be reduced by using appropriate abbreviations and codes. Non-essential words and phrases, such as expressions of politeness, shall not be used.
- (b) The air traffic controller and the pilot shall construct CPDLC messages using standard message elements, free text message elements, or a combination of both. The use of free text message elements by air traffic controllers or pilots shall, be avoided.
- (c) When the implemented CPDLC message set does not provide for specific circumstances, the competent authority may determine, in consultation with operators and other air traffic services providers, that it is acceptable to use free text message elements. In such cases, the competent authority concerned shall define the display format, intended use and attributes for each free text message element.
- (d) The composition of a CPDLC message shall not exceed five message elements, only two of which may contain the route clearance variable.
- (e) Construction of multi-element CPDLC messages:
  - (1) When a multi-element CPDLC message requires a response, the response shall apply to all message elements.
  - (2) When a single message element clearance or any part of a multi-element clearance message cannot be complied with, the pilot shall send an “UNABLE” response for the whole message.
  - (3) The controller shall respond with an “UNABLE” message that applies to all elements of the request when no element(s) of a single or multi-element clearance request can be approved. The current clearance(s) shall not be restated.
  - (4) When a multi-element clearance request can only be partially accommodated, the controller shall respond with an “UNABLE” message applying to all the message elements of the request and, if appropriate, include a reason and/or information on when clearance may be expected.
  - (5) When all elements of a single or multi-element clearance request can be accommodated, the controller shall respond with clearances corresponding to each element of the request. This response shall be a single uplink message.
  - (6) When a CPDLC message contains more than one message element and the response attribute for the message is “Y”, when utilised, the single response message shall contain the corresponding number of replies in the same order.

## SERA.15020 Responding to CPDLC messages

*Regulation (EU) 2023/1772*

- (a) Unless otherwise specified by the competent authority, voice read-back of CPDLC messages shall not be required.
- (b) Except when correction of the CPDLC message transmitted is needed, when a controller or a pilot communicates via CPDLC, the response shall normally be via CPDLC. When a controller or a pilot communicates via voice, the response shall normally be via voice.

## SERA.15025 Correction of CPDLC messages

*Regulation (EU) 2023/1772*

- (a) When a correction to a CPDLC message is deemed necessary or when the contents of such a message need to be clarified, the air traffic controller and the pilot shall use the most appropriate means available for issuing the correct details or for providing the necessary clarification.
- (b) When voice communication is used to correct a CPDLC message for which no operational response has yet been received, the controller's or the pilot's voice transmission shall be prefaced by the phrase: "DISREGARD CPDLC (message type) MESSAGE, BREAK" – followed by the correct clearance, instruction, information or request.
- (c) When referring to and identifying the CPDLC message to be disregarded, caution shall be exercised in its phrasing so as to avoid any ambiguity with the issue of the correction to the clearance, instruction, information or request.
- (d) If a CPDLC message that requires an operational response is subsequently negotiated via voice, an appropriate CPDLC message closure response shall be sent to ensure proper synchronisation of the CPDLC dialogue. This may be achieved either by explicitly instructing the recipient of the message via voice to close the dialogue or by allowing the system to automatically close the dialogue.

## SERA.15030 Controller data link communication procedures for emergencies, hazards, and CPDLC equipment failure

*Regulation (EU) 2023/1772*

- (a) When an air traffic controller or a pilot is alerted that a single controller-pilot data link communication message has failed, the air traffic controller or the pilot shall take one of the following actions, as appropriate:
  - (1) via voice, confirm the actions that will be taken with respect to the related dialogue, prefacing the information with the phrase: "CPDLC MESSAGE FAILURE";
  - (2) via controller-pilot data link communication, reissue the controller-pilot data link communication message that failed.
- (b) Air traffic controllers that are required to transmit information concerning a complete controller-pilot data link communication ground system failure to all stations likely to intercept should preface such a transmission by the general call: "ALL STATIONS CPDLC FAILURE" - followed by the identification of the calling station.
- (c) When controller-pilot data link communication fail and the communication reverts to voice, all CPDLC messages outstanding shall be considered not delivered and the entire dialogue involving the messages outstanding shall be recommenced by voice.
- (d) When controller-pilot data link communication fails but is restored prior to a need to revert to voice communication, all messages outstanding shall be considered not delivered and the entire dialogue involving the messages outstanding shall be recommenced via CPDLC.

## SERA.15035 Intentional shutdown of CPDLC system

Regulation (EU) 2023/1772

- (a) When a system shutdown of the communications network or the CPDLC ground system is planned, a NOTAM shall be published to inform all affected parties of the shutdown period and, if necessary, the details of the voice communication frequencies to be used.
- (b) Aircraft in communication with the ATC units shall be informed by voice or CPDLC of any imminent loss of the CPDLC service.

## SERA.15040 Discontinuation of the use of CPDLC requests

Regulation (EU) 2023/1772

- (a) When a controller requires all stations or a specific flight to avoid sending CPDLC requests for a limited period of time, the following phrase shall be used: ((call sign) or ALL STATIONS) STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [(reason)].
- (b) The resumption of the normal use of CPDLC shall be advised by using the following phrase: ((call sign) or ALL STATIONS) RESUME NORMAL CPDLC OPERATIONS.

## SERA.15045 Use of CPDLC in the event of air-ground voice communication failure

Regulation (EU) 2023/1772

The existence of a CPDLC connection between an air traffic services unit and an aircraft should not prevent the pilot and the air traffic controller concerned from initiating and performing all the required actions in the event of air-ground voice communication failure.

## SERA.15050 Testing of CPDLC

Regulation (EU) 2023/1772

Where the testing of CPDLC with an aircraft could affect the air traffic services being provided to the aircraft, coordination shall be effected prior to such testing.

## APPENDIX 1 SIGNALS

Regulation (EU) 2024/1111

### 1. DISTRESS AND URGENCY SIGNALS

#### 1.1. General

1.1.1. Notwithstanding the provisions in 1.2 and 1.3, an aircraft in distress shall use any means at its disposal to attract attention, make known its position and obtain help.

1.1.2. The telecommunication transmission procedures for the distress and urgency signals shall be in accordance with [Section 14](#).

#### 1.2. Distress signals

1.2.1. The following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

- (a) a signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (... — — — ... in the Morse Code);
- (b) a radiotelephony distress signal consisting of the spoken word MAYDAY;
- (c) a distress message sent via data link which transmits the intent of the word MAYDAY;
- (d) rockets or shells throwing red lights, fired one at a time at short intervals;
- (e) a parachute flare showing a red light;
- (f) setting of the transponder to Mode A Code 7700.

#### 1.3. Urgency signals

1.3.1. The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:

- (a) the repeated switching on and off of the landing lights; or
- (b) the repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.

1.3.2. The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:

- (a) a signal made by radiotelegraphy or by any other signalling method consisting of the group XXX (—..— —..— —..— in the Morse Code);
- (b) a radiotelephony urgency signal consisting of the spoken words PAN, PAN;
- (c) an urgency message sent via data link which transmits the intent of the words PAN, PAN.

### 2. VISUAL SIGNALS USED TO WARN AN UNAUTHORISED AIRCRAFT FLYING IN OR ABOUT TO ENTER A RESTRICTED, PROHIBITED OR DANGER AREA

- 2.1. When visual signals are used to warn unauthorised aircraft flying in or about to enter a restricted, prohibited or danger area by day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red

and green lights or stars shall indicate to an unauthorised aircraft that it is flying in or about to enter a restricted, prohibited or danger area, and that the aircraft is to take such remedial action as may be necessary.

### 3. SIGNALS FOR AERODROME TRAFFIC

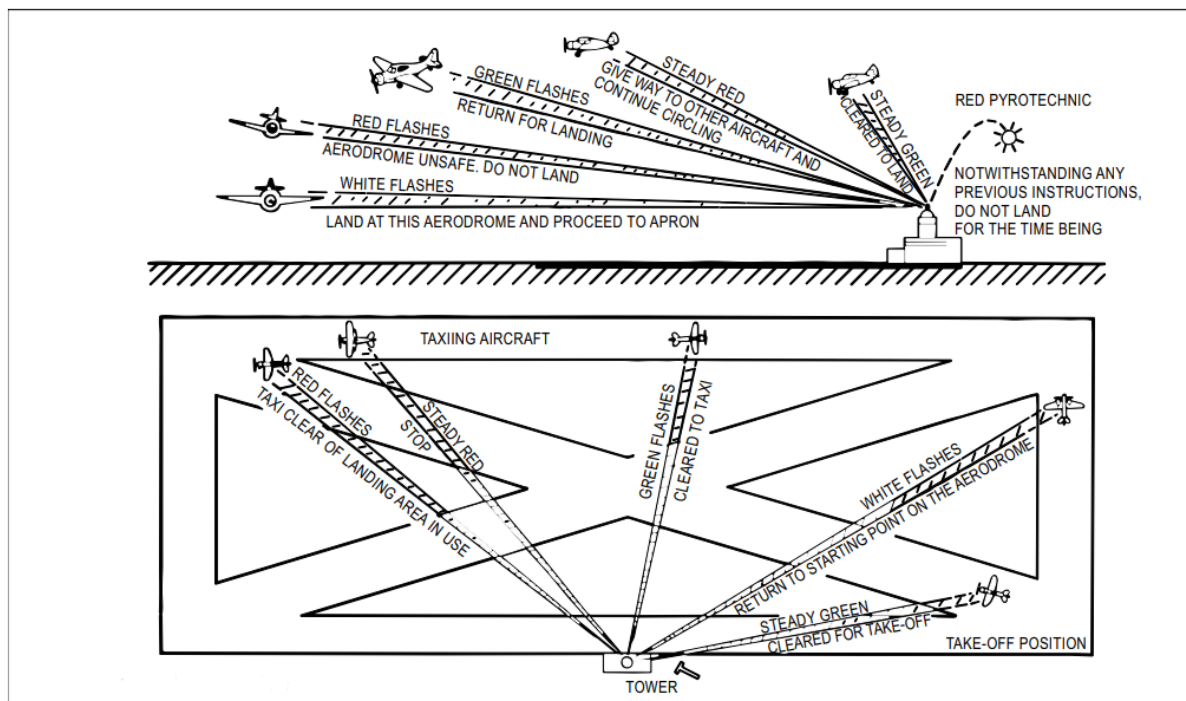
#### 3.1. Light and pyrotechnic signals

##### 3.1.1. Instructions for aircraft

Table AP 1-1

| Light                                                  |                         | From Aerodrome Control to:                                                |                                           |
|--------------------------------------------------------|-------------------------|---------------------------------------------------------------------------|-------------------------------------------|
|                                                        |                         | Aircraft in flight                                                        | Aircraft on the ground                    |
| Directed towards aircraft concerned (see Figure A1-1). | Steady green            | Cleared to land                                                           | Cleared for take-off                      |
|                                                        | Steady red              | Give way to other aircraft and continue circling                          | Stop                                      |
|                                                        | Series of green flashes | Return for landing <sup>1</sup>                                           | Cleared to taxi                           |
|                                                        | Series of red flashes   | Aerodrome unsafe, do not land                                             | Taxi clear of landing area in use         |
|                                                        | Series of white flashes | Land at this aerodrome and proceed to apron <sup>2</sup>                  | Return to starting point on the aerodrome |
| Red pyrotechnic                                        |                         | Notwithstanding any previous instructions, do not land for the time being |                                           |

Figure A1-1



<sup>1</sup> Clearances to land and to taxi will be given in due course.

<sup>2</sup> Clearances to land and to taxi will be given in due course.

**3.1.2. Acknowledgement by an aircraft**

- (a) When in flight:
  - (1) during the hours of daylight:
    - by rocking the aircraft's wings, except for the base and final legs of the approach;
  - (2) during the hours of darkness:
    - by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.
- (b) When on the ground:
  - (1) during the hours of daylight:
    - by moving the aircraft's ailerons or rudder;
  - (2) during the hours of darkness:
    - by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

**3.1.3. Instructions for ground vehicles or pedestrians**

- (a) When communications by a system of visual signals is deemed to be adequate, or in the case of radio communication failure, the signals given hereunder shall have the meaning indicated in the table below.

| Light signal from aerodrome control | Meaning                                                         |
|-------------------------------------|-----------------------------------------------------------------|
| Green flashes                       | Permission to cross landing area or to move onto taxiway        |
| Steady red                          | Stop                                                            |
| Red flashes                         | Move off the landing area or taxiway and watch out for aircraft |
| White flashes                       | Vacate manoeuvring area in accordance with local instructions   |

- (b) In emergency conditions or if the signals in point (a) are not observed, the signal given hereunder shall be used for runways or taxiways equipped with a lighting system and shall have the meaning indicated in the table below.

| Light signal from aerodrome control | Meaning                                                  |
|-------------------------------------|----------------------------------------------------------|
| Flashing runway or taxiway lights   | Vacate the runway and observe the tower for light signal |

### 3.2. Visual ground signals

#### 3.2.1. Prohibition of landing

- 3.2.1.1. A horizontal red square panel with yellow diagonals (Figure A1-2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.



Figure A1-2

#### 3.2.2. Need for special precautions while approaching or landing

- 3.2.2.1. A horizontal red square panel with one yellow diagonal (Figure A1-3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions must be observed in approaching to land or in landing.



Figure A1-3

#### 3.2.3. Use of runways and taxiways

- 3.2.3.1. A horizontal white dumb-bell (Figure A1-4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

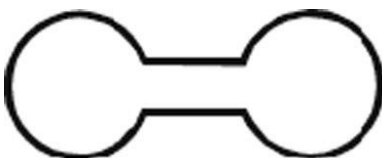
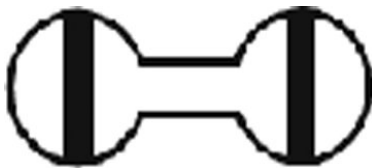


Figure A1-4

- 3.2.3.2. The same horizontal white dumb-bell as in 3.2.3.1 but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure A1-5) when displayed in a signal area indicates that aircraft are

required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways.



*Figure A1-5*

#### 3.2.4. Closed runways or taxiways

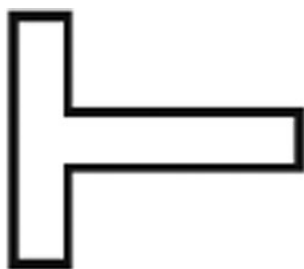
3.2.4.1. Crosses of a single contrasting colour, white on runways and yellow on taxiways (Figure A1-6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.



*Figure A1-6*

#### 3.2.5. Directions for landing or take-off

3.2.5.1. A horizontal white or orange landing T (Figure A1-7) indicates the direction to be used by aircraft for landing and take-off, which shall be in a direction parallel to the shaft of the T towards the cross arm. When used at night, the landing T shall be either illuminated or outlined in white lights.



*Figure A1-7*

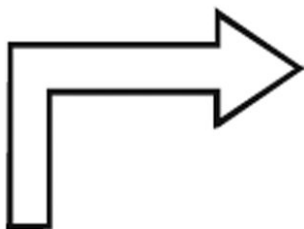
3.2.5.2. A set of two digits (Figure A1-8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.



*Figure A1-8*

3.2.6. Right-hand traffic

3.2.6.1. When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure A1-9) indicates that turns are to be made to the right before landing and after take-off.



*Figure A1-9*

3.2.7. Air traffic services reporting office

3.2.7.1. The letter C displayed vertically in black against a yellow background (Figure A1-10) indicates the location of the air traffic services reporting office.



*Figure A1-10*

### 3.2.8. Sailplane flights in operation

3.2.8.1. A double white cross displayed horizontally (Figure A1-11) in the signal area indicates that the aerodrome is being used by sailplanes and that sailplane flights are being performed.

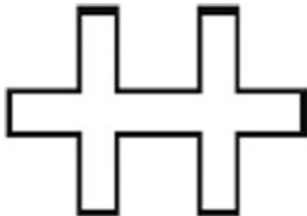


Figure A1-11

## 4. MARSHALLING SIGNALS

### 4.1. From a signalman/marshaller to an aircraft

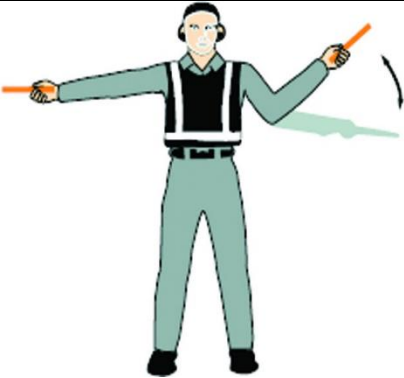
4.1.1. The signals for use by the signalman/marshaller, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position shall be:

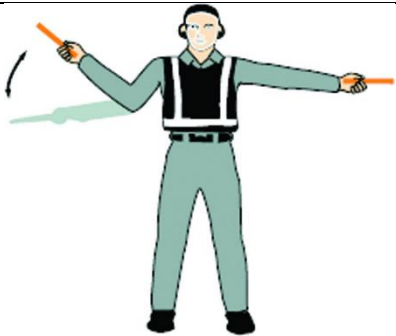
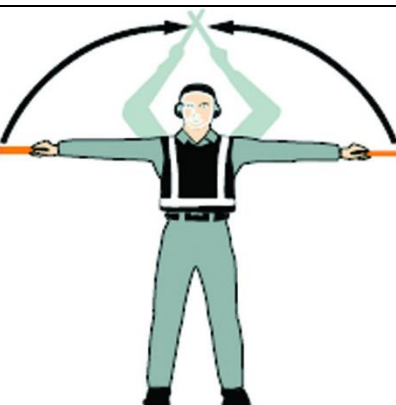
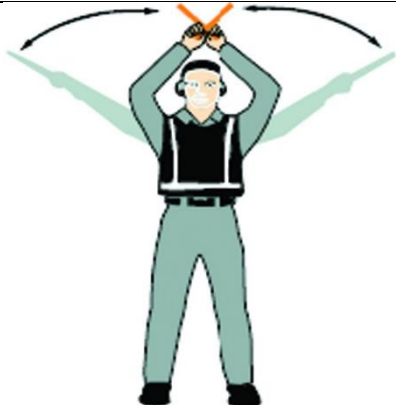
- (a) for fixed-wing aircraft, on left side of aircraft, where best seen by the pilot; and
- (b) for helicopters /VTOL-capable aircraft, where the signalman/marshaller can best be seen by the pilot.

4.1.2. Prior to using the following signals, the signalman/marshaller shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with [SERA.3301\(a\)](#), might otherwise strike.

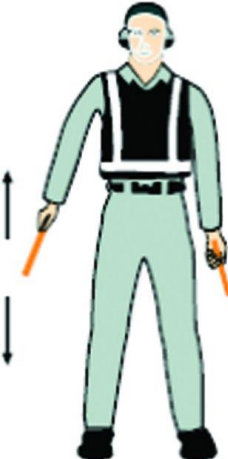
|                                                                                     |                                                                                                                                                              |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>1. Wingwalker/guide<sup>1</sup></b></p> <p>Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.</p> |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|

<sup>1</sup> This signal provides an indication by a person positioned at the aircraft wing tip, to the pilot/marshaller/push-back operator, that the aircraft movement on/off a parking position would be unobstructed.

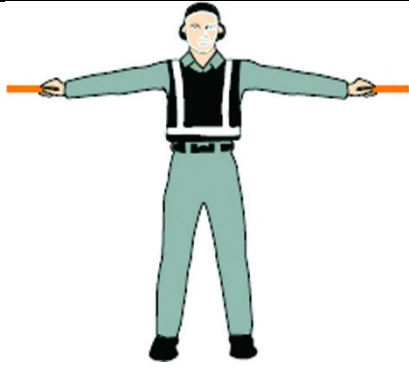
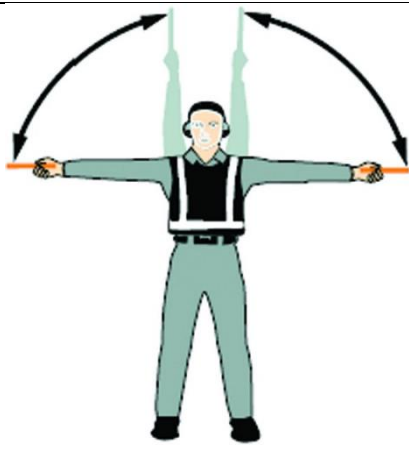
|                                                                                     |                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>2. Identify gate</b></p> <p>Raise fully extended arms straight above head with wands pointing up.</p>                                                                                                                                            |
|   | <p><b>3. Proceed to next signalman/marshaller or as directed by tower/ground control</b></p> <p>Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman/marshaller or taxi area.</p> |
|  | <p><b>4. Straight ahead</b></p> <p>Bend extended arms at elbows and move wands up and down from chest height to head.</p>                                                                                                                              |
|  | <p><b>5(a) Turn left (from pilot's point of view)</b></p> <p>With right arm and wand extended at a 90-degree angle to body, make 'come ahead' signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.</p>       |

|                                                                                     |                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>5(b) Turn right (from pilot's point of view)</b></p> <p>With left arm and wand extended at a 90-degree angle to body, make 'come ahead' signal with right hand. The rate of signal motion indicates to pilot the rate of aircraft turn.</p> |
|    | <p><b>6(a) Normal stop</b></p> <p>Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.</p>                                                                                                  |
|  | <p><b>6(b) Emergency stop</b></p> <p>Abruptly extend arms and wands to top of head, crossing wands.</p>                                                                                                                                           |
|  | <p><b>7(a) Set brakes</b></p> <p>Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. <i>Do not</i> move until receipt of 'thumbs up' acknowledgement from flight crew.</p>       |

|                                                                                     |                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>7(b) Release brakes</b></p> <p>Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. <i>Do not</i> move until receipt of 'thumbs up' acknowledgement from flight crew.</p> |
|   | <p><b>8(a) Chocks inserted</b></p> <p>With arms and wands fully extended above head, move wands inward in a 'jabbing' motion until wands touch. <i>Ensure</i> acknowledgement is received from flight crew.</p>                                |
|  | <p><b>8(b) Chocks removed</b></p> <p>With arms and wands fully extended above head, move wands outward in a 'jabbing' motion. <i>Do not</i> remove chocks until authorised by flight crew.</p>                                                 |
|  | <p><b>9. Start engine(s)</b></p> <p>Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.</p>                     |

|                                                                                     |                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>10. Cut engines</b></p> <p>Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.</p>                                            |
|   | <p><b>11. Slow down</b></p> <p>Move extended arms downwards in a 'patting' gesture, moving wands up and down from waist to knees.</p>                                                                                                                        |
|  | <p><b>12. Slow down engine(s) on indicated side</b></p> <p>With arms down and wands toward ground, wave either <i>right</i> or <i>left</i> wand up and down indicating engine(s) on <i>left</i> or <i>right</i> side respectively should be slowed down.</p> |

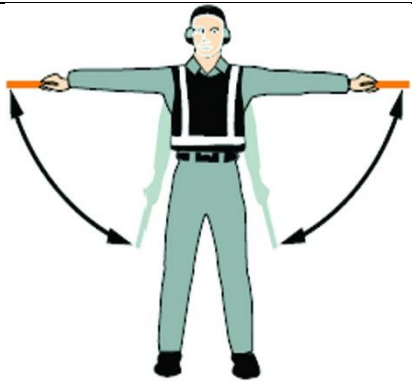
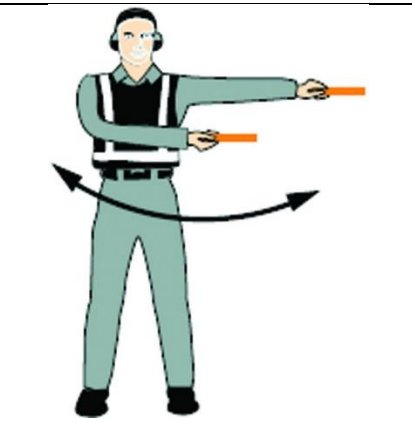
|                                                                                     |                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>13. Move back</b></p> <p>With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6(a) or 6(b).</p>                                                    |
|   | <p><b>14(a) Turns while backing (for tail to starboard)</b></p> <p>Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.</p> |
|  | <p><b>14(b) Turns while backing (for tail to port)</b></p> <p>Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.</p>       |

|                                                                                     |                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>15. Affirmative/all clear<sup>1</sup></b></p> <p>Raise right arm to head level with wand pointing up or display hand with 'thumbs up'; left arm remains at side by knee.</p>                     |
|   | <p><b>16. Hover<sup>2</sup></b></p> <p>Fully extend arms and wands at a 90-degree angle to sides.</p>                                                                                                  |
|  | <p><b>17. Move upwards<sup>3</sup></b></p> <p>Fully extend arms and wands at a 90-degree angle to sides and, with palms turned up, move hands upwards. Speed of movement indicates rate of ascent.</p> |

<sup>1</sup> This signal is also used as a technical/servicing communication signal.

<sup>2</sup> For use to hovering helicopters / VTOL-capable aircraft.

<sup>3</sup> For use to hovering helicopters / VTOL-capable aircraft.

|                                                                                     |                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>18. Move downwards<sup>1</sup></b></p> <p>Fully extend arms and wands at a 90-degree angle to sides and, with palms turned down, move hands downwards. Speed of movement indicates rate of descent.</p>         |
|   | <p><b>19(a) Move horizontally left (from pilot's point of view)<sup>2</sup></b></p> <p>Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion.</p> |
|  | <p><b>19(b) Move horizontally right (from pilot's point of view)<sup>3</sup></b></p> <p>Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.</p> |

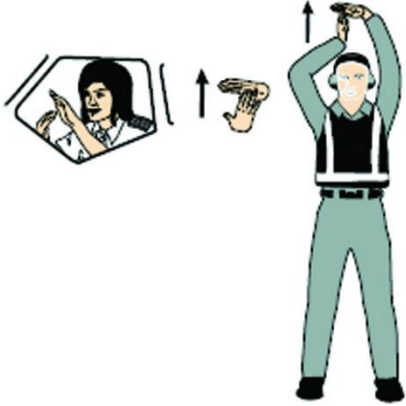
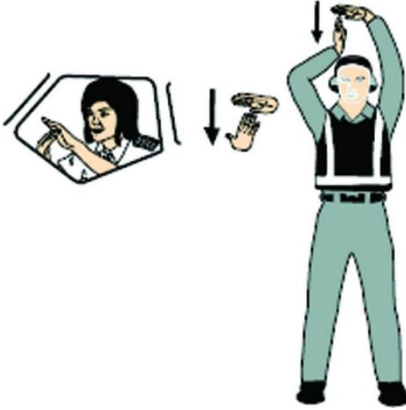
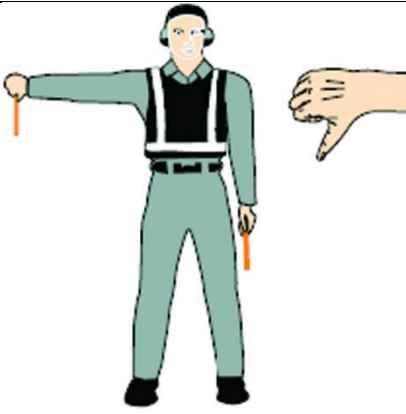
<sup>1</sup> For use to hovering helicopters / VTOL-capable aircraft.

<sup>2</sup> For use to hovering helicopters / VTOL-capable aircraft.

<sup>3</sup> For use to hovering helicopters / VTOL-capable aircraft.

|                                                                                     |                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>20. Land<sup>1</sup></b></p> <p>Cross arms with wands downwards and in front of body.</p>                                                                                                    |
|   | <p><b>21. Hold position/stand by</b></p> <p>Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.</p>                     |
|  | <p><b>22. Dispatch aircraft</b></p> <p>Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.</p> |

<sup>1</sup> For use to hovering helicopters / VTOL-capable aircraft.

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>23. Do not touch controls (technical/servicing communication signal)</b></p> <p>Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.</p>                                                                                                                                                                                     |
|   | <p><b>24. Connect ground power (technical/servicing communication signal)</b></p> <p>Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a 'T'). At night, illuminated wands can also be used to form the 'T' above head.</p>                                                                          |
|  | <p><b>25. Disconnect power (technical/servicing communication signal)</b></p> <p>Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a 'T'); then move right hand away from the left. <i>Do not</i> disconnect power until authorised by flight crew. At night, illuminated wands can also be used to form the 'T' above head.</p> |
|  | <p><b>26. Negative (technical/servicing communication signal)</b></p> <p>Hold right arm straight out at 90 degrees from shoulder and point wand down to ground or display hand with 'thumbs down'; left hand remains at side by knee.</p>                                                                                                                                                             |

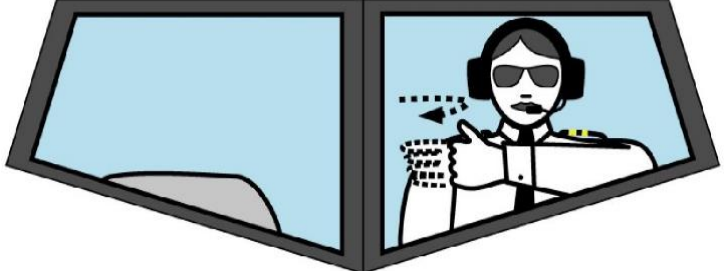
|                                                                                    |                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p><b>27. Establish communication via interphone (technical/servicing communication signal)</b></p> <p>Extend both arms at 90 degrees from body and move hands to cup both ears.</p>                                                            |
|  | <p><b>28. Open/close stairs (technical/servicing communication signal)<sup>1</sup></b></p> <p>With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.</p> |

#### 4.2. From the pilot of an aircraft to a signalman/marshaller

4.2.1. These signals shall be used by a pilot in the cockpit with hands plainly visible to the signalman/marshaller, and illuminated as necessary to facilitate observation by the signalman/marshaller.

|                                                                                     |                                                                                                                        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|  | <p>(a) Brakes engaged: raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.</p> |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|

<sup>1</sup> This signal is intended mainly for aircraft with the set of integral stairs at the front.

|                                                                                     |                                                                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p>(b) Brakes released: raise arm, with fist clenched, horizontally in front of face, then extend fingers.</p>                              |
|    | <p>(c) Insert chocks: arms extended, palms outwards, move hands inwards to cross in front of face.</p>                                      |
|   | <p>(d) Remove chocks: hands crossed in front of face, palms outwards, move arms outwards.</p>                                               |
|  | <p>(e) Ready to start engine(s): Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.</p> |

#### 4.3. Technical/servicing communication signals

4.3.1. Manual signals shall only be used when verbal communication is not possible with respect to technical/servicing communication signals.

4.3.2. Signalmen/marshalls shall ensure that an acknowledgement is received from the flight crew with respect to technical/servicing communication signals.

### 5. STANDARD EMERGENCY HAND SIGNALS

5.1. The following hand signals are established as the minimum required for emergency communication between the ARFF incident commander/ARFF firefighters and the cockpit and/or cabin crews of the incident aircraft. ARFF emergency hand signals should be given from the left front side of the aircraft for the cockpit crew.

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>1. Recommend evacuation</b></p> <p>Evacuation recommended based on aircraft rescue and fire-fighting and Incident Commander's assessment of external situation.</p> <p>Arm extended from body, and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body.</p> <p>Night — same with wands.</p> |
|   | <p><b>2. Recommend stop</b></p> <p>Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress.</p> <p>Arms in front of head — Crossed at wrists</p> <p>Night — same with wands.</p>                                                                                                                                                        |
|  | <p><b>3. Emergency contained</b></p> <p>No outside evidence of dangerous conditions or 'all-clear.'</p> <p>Arms extended outward and down at a 45 degree angle. Arms moved inward below waistline simultaneously until wrists crossed, then extended outward to starting position.</p> <p>Night — same with wands.</p>                                                           |

|                                                                                   |                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>4. Fire</b></p> <p>Move right-hand in a 'fanning' motion from shoulder to knee, while at the same time pointing with left hand to area of fire.</p> <p>Night — same with wands.</p> |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## GM1 to Appendix 1(4.1) MARSHALLING SIGNALS

ED Decision 2013/013/R

### FROM A SIGNALMAN/MARSHALLER TO AN AIRCRAFT — GENERAL

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

## GM1 to Appendix 1(4.2.1.1) MARSHALLING SIGNALS

ED Decision 2013/013/R

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

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

## GM1 to Appendix 1(5.1) STANDARD EMERGENCY HAND SIGNALS

ED Decision 2013/013/R

### GENERAL

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

## APPENDIX 2 UNMANNED FREE BALLOONS

Regulation (EU) 2024/404

### 1. CLASSIFICATION OF UNMANNED FREE BALLOONS

1.1. Unmanned free balloons shall be classified as (see Figure AP2-1):

- (a) *light*: an unmanned free balloon which carries a payload of one or more packages with a combined mass of less than 4 kg, unless qualifying as a heavy balloon in accordance with (c)(2),(3) or (4); or
- (b) *medium*: an unmanned free balloon which carries a payload of two or more packages with a combined mass of 4 kg or more, but less than 6 kg, unless qualifying as a heavy balloon in accordance with (c)(2), (3) or (4) below; or
- (c) *heavy*: an unmanned free balloon which carries a payload which:
  - (1) has a combined mass of 6 kg or more; or
  - (2) includes a package of 3 kg or more; or
  - (3) includes a package of 2 kg or more with an area density of more than 13 g per square centimetre, determined by dividing the total mass in grams of the payload package by the area in square centimetres of its smallest surface; or
  - (4) uses a rope or other device for suspension of the payload that requires an impact force of 230 N or more to separate the suspended payload from the balloon.

### 2. GENERAL OPERATING RULES

- 2.1. An unmanned free balloon shall not be operated without authorisation from the State from which the launch is made.
- 2.2. An unmanned free balloon, other than a light balloon used exclusively for meteorological purposes and operated in the manner prescribed by the competent authority, shall not be operated across the territory of another State without authorisation from the other State concerned.
- 2.3. The authorisation referred to in 2.2 shall be obtained prior to the launching of the balloon if there is reasonable expectation, when planning the operation, that the balloon may drift into airspace over the territory of another State. Such authorisation may be obtained for a series of balloon flights or for a particular type of recurring flight, e.g. atmospheric research balloon flights.
- 2.4. An unmanned free balloon shall be operated in accordance with conditions specified by the State of Registry and the State(s) expected to be overflown.
- 2.5. An unmanned free balloon shall not be operated in such a manner that impact of the balloon, or any part thereof, including its payload, with the surface of the earth, creates a hazard to persons or property.
- 2.6. A heavy unmanned free balloon shall not be operated over the high seas without prior coordination with the ANSP(s).

Figure AP2-1

| CHARACTERISTICS                                                                                                                |                                                      | PAYLOAD MASS<br>(kilogrammes) |   |        |   |   |           |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------|---|--------|---|---|-----------|
|                                                                                                                                |                                                      | 1                             | 2 | 3      | 4 | 5 | 6 or more |
| ROPE or OTHER<br>SUSPENSION<br><br>230 Newtons<br>or<br>MORE                                                                   |                                                      | HEAVY                         |   |        |   |   |           |
| INDIVIDUAL<br>PAYLOAD<br>PACKAGE                                                                                               | AREA<br>DENSITY<br>more than<br>13 g/cm <sup>2</sup> |                               |   |        |   |   |           |
| <div>AREA DENSITY<br/>CALCULATION</div> <div><div>MASS (g)</div><div>Area of smallest<br/>surface (cm<sup>2</sup>)</div></div> | AREA<br>DENSITY<br>less than<br>13 g/cm <sup>2</sup> | LIGHT                         |   | MEDIUM |   |   |           |
| COMBINED MASS<br><br>(if Suspension<br>OR Area density<br>OR Mass of individual<br>package are not<br>factors)                 |                                                      |                               |   |        |   |   |           |

### 3. OPERATING LIMITATIONS AND EQUIPMENT REQUIREMENTS

- 3.1. A heavy unmanned free balloon shall not be operated without authorisation from the ANSP(s) at or through any level below 18 000 m (60 000 ft) pressure-altitude at which:
- (a) there are clouds or obscuring phenomena of more than four oktas coverage; or
  - (b) the horizontal visibility is less than 8 km.

- 3.2. A heavy or medium unmanned free balloon shall not be released in a manner that will cause it to fly lower than 300 m (1 000 ft) over the congested areas of cities, towns or settlements or an open-air assembly of persons not associated with the operation.
- 3.3. A heavy unmanned free balloon shall not be operated unless:
- (a) it is equipped with at least two payload flight-termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other;
  - (b) for polyethylene zero-pressure balloons, at least two methods, systems, devices, or combinations thereof, that function independently of each other are employed for terminating the flight of the balloon envelope;
  - (c) the balloon envelope is equipped with either a radar reflective device(s) or radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range, and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar.
- 3.4. A heavy unmanned free balloon shall not be operated under the following conditions:
- (a) in an area where ground-based SSR equipment is in use, unless it is equipped with a secondary surveillance radar transponder, with pressure-altitude reporting capability, which is continuously operating on an assigned code, or which can be turned on when necessary by the tracking station; or
  - (b) in an area where ground-based ADS-B equipment is in use, unless it is equipped with an ADS-B transmitter, with pressure-altitude reporting capability, which is continuously operating or which can be turned on when necessary by the tracking station.
- 3.5. An unmanned free balloon that is equipped with a trailing antenna that requires a force of more than 230 N to break it at any point shall not be operated unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals.
- 3.6. A heavy unmanned free balloon shall not be operated below 18 000 m (60 000 ft) pressure-altitude at night or during any other period prescribed by the competent authority, unless the balloon and its attachments and payload, whether or not they become separated during the operation, are lighted.
- 3.7. A heavy unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m long shall not be operated during night below 18 000 m (60 000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of high conspicuity colours or has coloured pennants attached.

#### **4. TERMINATION**

- 4.1. The operator of a heavy unmanned free balloon shall activate the appropriate termination devices required by 3.3(a) and (b):
- (a) when it becomes known that weather conditions are less than those prescribed for the operation;
  - (b) if a malfunction or any other reason makes further operation hazardous to air traffic or to persons or property on the surface; or

- (c) prior to unauthorised entry into the airspace over another State's territory.

## **5. FLIGHT NOTIFICATION**

### **5.1. Pre-flight notification**

5.1.1. Early notification of the intended flight of an unmanned free balloon in the medium or heavy category shall be made to the appropriate air traffic services unit not less than seven days before the date of the intended flight.

5.1.2. Notification of the intended flight shall include such of the following information as may be required by the appropriate air traffic services unit:

- (a) balloon flight identification or project code name;
- (b) balloon classification and description;
- (c) SSR code, aircraft address or NDB frequency as applicable;
- (d) operator's name and telephone number;
- (e) launch site;
- (f) estimated time of launch (or time of commencement and completion of multiple launches);
- (g) number of balloons to be launched and the scheduled interval between launches (if multiple launches);
- (h) expected direction of ascent;
- (i) cruising level(s) (pressure-altitude);
- (j) the estimated elapsed time to pass 18 000 m (60 000 ft) pressure-altitude or to reach cruising level if at or below 18 000 m (60 000 ft), together with the estimated location. If the operation consists of continuous launchings, the time to be included shall be the estimated time at which the first and the last in the series will reach the appropriate level (e.g. 122136Z–130330Z);
- (k) the estimated date and time of termination of the flight and the planned location of the impact/recovery area. In the case of balloons carrying out flights of long duration, as a result of which the date and time of termination of the flight and the location of impact cannot be forecast with accuracy, the term 'long duration' shall be used. If there is to be more than one location of impact/recovery, each location shall be listed together with the appropriate estimated time of impact. If there is to be a series of continuous impacts, the time to be included shall be the estimated time of the first and the last in the series (e.g. 070330Z–072300Z).

5.1.3. Any changes in the pre-launch information notified in accordance with point 5.1.2 shall be forwarded to the ATS unit concerned not less than 6 hours before the estimated time of launch, or in the case of solar or cosmic disturbance investigations involving a critical time element, not less than 30 minutes before the estimated time of the commencement of the operation.

### **5.2. Notification of launch**

5.2.1. Immediately after a medium or heavy unmanned free balloon is launched the operator shall notify the appropriate air traffic services unit of the following:

- (a) balloon flight identification;
- (b) launch site;
- (c) actual time of launch;
- (d) estimated time at which 18 000 m (60 000 ft) pressure-altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 18 000 m (60 000 ft), and the estimated location; and
- (e) any changes to the information previously notified in accordance with 5.1.2(g) and (h).

**5.3. Notification of cancellation**

5.3.1. The operator shall notify the appropriate air traffic services unit immediately when it is known that the intended flight of a medium or heavy unmanned free balloon, previously notified in accordance with paragraph 5.1, has been cancelled.

**6. POSITION RECORDING AND REPORTS**

- 6.1. The operator of a heavy unmanned free balloon operating at or below 18 000 m (60 000 ft) pressure-altitude shall monitor the flight path of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 2 hours.
- 6.2. The operator of a heavy unmanned free balloon operating above 18 000 m (60 000 ft) pressure-altitude shall monitor the flight progress of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 24 hours.
- 6.3. If a position cannot be recorded in accordance with 6.1 and 6.2, the operator shall immediately notify the appropriate air traffic services unit. This notification shall include the last recorded position. The appropriate air traffic services unit shall be notified immediately when tracking of the balloon is re-established.
- 6.4. One hour before the beginning of planned descent of a heavy unmanned free balloon, the operator shall forward to the appropriate ATS unit the following information regarding the balloon:
  - (a) the current geographical position;
  - (b) the current level (pressure-altitude);
  - (c) the forecast time of penetration of 18 000 m (60 000 ft) pressure-altitude, if applicable;
  - (d) the forecast time and location of ground impact.
- 6.5. The operator of a heavy or medium unmanned free balloon shall notify the appropriate air traffic services unit when the operation is ended.

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

*ED Decision 2013/013/R*

### **SUPER-PRESSURE BALLOONS**

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

## APPENDIX 3 TABLE OF CRUISING LEVELS

Regulation (EU) No 923/2012

1.1. The cruising levels to be observed are as follows:

| TRACK <sup>1</sup>              |       |              |             |       |        |                                 |       |        |             |       |        |
|---------------------------------|-------|--------------|-------------|-------|--------|---------------------------------|-------|--------|-------------|-------|--------|
| From 000 degrees to 179 degrees |       |              |             |       |        | From 180 degrees to 359 degrees |       |        |             |       |        |
| IFR Flights                     |       |              | VFR Flights |       |        | IFR Flights                     |       |        | VFR Flights |       |        |
| Level                           |       |              | Level       |       |        | Level                           |       |        | Level       |       |        |
| FL                              | Feet  | Metres       | FL          | Feet  | Metres | FL                              | Feet  | Metres | FL          | Feet  | Metres |
| 010                             | 1000  | 300          | —           | —     | —      | 020                             | 2000  | 600    | —           | —     | —      |
| 030                             | 3000  | 900          | 035         | 3500  | 1050   | 040                             | 4000  | 1200   | 045         | 4500  | 1350   |
| 050                             | 5000  | 1500         | 055         | 5500  | 1700   | 060                             | 6000  | 1850   | 065         | 6500  | 2000   |
| 070                             | 7000  | 2150         | 075         | 7500  | 2300   | 080                             | 8000  | 2450   | 085         | 8500  | 2600   |
| 090                             | 9000  | 2750         | 095         | 9500  | 2900   | 100                             | 10000 | 3050   | 105         | 10500 | 3200   |
| 110                             | 11000 | 3350         | 115         | 11500 | 3500   | 120                             | 12000 | 3650   | 125         | 12500 | 3800   |
| 130                             | 13000 | 3950         | 135         | 13500 | 4100   | 140                             | 14000 | 4250   | 145         | 14500 | 4400   |
| 150                             | 15000 | 4550         | 155         | 15500 | 4700   | 160                             | 16000 | 4900   | 165         | 16500 | 5050   |
| 170                             | 17000 | 5200         | 175         | 17500 | 5350   | 180                             | 18000 | 5500   | 185         | 18500 | 5650   |
| 190                             | 19000 | 5800         | 195         | 19500 | 5950   | 200                             | 20000 | 6100   | 205         | 20500 | 6250   |
| 210                             | 21000 | 6400         | 215         | 21500 | 6550   | 220                             | 22000 | 6700   | 225         | 22500 | 6850   |
| 230                             | 23000 | 7000         | 235         | 23500 | 7150   | 240                             | 24000 | 7300   | 245         | 24500 | 7450   |
| 250                             | 25000 | 7600         | 255         | 25500 | 7750   | 260                             | 26000 | 7900   | 265         | 26500 | 8100   |
| 270                             | 27000 | 8250         | 275         | 27500 | 8400   | 280                             | 28000 | 8550   | 285         | 28500 | 8700   |
| 290                             | 29000 | 8850         |             |       |        | 300                             | 30000 | 9150   |             |       |        |
| 310                             | 31000 | 9450         |             |       |        | 320                             | 32000 | 9750   |             |       |        |
| 330                             | 33000 | 10050        |             |       |        | 340                             | 34000 | 10350  |             |       |        |
| 350                             | 35000 | 10650        |             |       |        | 360                             | 36000 | 10950  |             |       |        |
| 370                             | 37000 | 11300        |             |       |        | 380                             | 38000 | 11600  |             |       |        |
| 390                             | 39000 | 11900        |             |       |        | 400                             | 40000 | 12200  |             |       |        |
| 410                             | 41000 | 12500        |             |       |        | 430                             | 43000 | 13100  |             |       |        |
| 450                             | 45000 | 13700        |             |       |        | 470                             | 47000 | 14350  |             |       |        |
| 490                             | 49000 | 14950        |             |       |        | 510                             | 51000 | 15550  |             |       |        |
| etc.                            | etc.  | etc.<br>etc. |             |       |        | etc.                            | etc.  | etc.   |             |       |        |

<sup>1</sup> Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the competent authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

## APPENDIX 4 ATS AIRSPACE CLASSES — SERVICES PROVIDED AND FLIGHT REQUIREMENTS

Regulation (EU) 2016/1185

([SERA.6001](#) and [SERA.5025\(b\)](#) refers)

| Class | Type of flight | Separation provided          | Service provided                                                                                                                                                   | Speed limitation <sup>1</sup>                    | Radio communication capability requirement | Continuous two-way air-ground voice communication required | Subject to an ATC clearance |
|-------|----------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|------------------------------------------------------------|-----------------------------|
| A     | IFR only       | All aircraft                 | Air traffic control service                                                                                                                                        | Not applicable                                   | Yes                                        | Yes                                                        | Yes                         |
| B     | IFR            | All aircraft                 | Air traffic control service                                                                                                                                        | Not applicable                                   | Yes                                        | Yes                                                        | Yes                         |
|       | VFR            | All aircraft                 | Air traffic control service                                                                                                                                        | Not applicable                                   | Yes                                        | Yes                                                        | Yes                         |
| C     | IFR            | IFR from IFR<br>IFR from VFR | Air traffic control service                                                                                                                                        | Not applicable                                   | Yes                                        | Yes                                                        | Yes                         |
|       | VFR            | VFR from IFR                 | (1) Air traffic control service for separation from IFR;<br>(2) Air traffic control service, VFR/VFR traffic information (and traffic avoidance advice on request) | 250 kts IAS below<br>3 050 m<br>(10 000 ft) AMSL | Yes                                        | Yes                                                        | Yes                         |
| D     | IFR            | IFR from IFR                 | Air traffic control service, traffic information about VFR flights (and traffic avoidance advice on request)                                                       | 250 kts IAS below<br>3 050 m<br>(10 000 ft) AMSL | Yes                                        | Yes                                                        | Yes                         |
|       | VFR            | Nil                          | Air traffic control service, IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request)                                                     | 250 kts IAS below<br>3 050 m<br>(10 000 ft) AMSL | Yes                                        | Yes                                                        | Yes                         |
| E     | IFR            | IFR from IFR                 | Air traffic control service and, as far as practical, traffic information about VFR flights                                                                        | 250 kts IAS below<br>3 050 m<br>(10 000 ft) AMSL | Yes                                        | Yes                                                        | Yes                         |

<sup>1</sup> When the level of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 should be used in lieu of 10 000 ft. Competent authority may also exempt aircraft types, which for technical or safety reasons, cannot maintain this speed.

| Class | Type of flight | Separation provided              | Service provided                                                      | Speed limitation <sup>1</sup>              | Radio communication capability requirement | Continuous two-way air-ground voice communication required | Subject to an ATC clearance |
|-------|----------------|----------------------------------|-----------------------------------------------------------------------|--------------------------------------------|--------------------------------------------|------------------------------------------------------------|-----------------------------|
|       | VFR            | Nil                              | Traffic information as far as practical                               | 250 kts IAS below 3 050 m (10 000 ft) AMSL | No <sup>2</sup>                            | No <sup>2</sup>                                            | No                          |
| F     | IFR            | IFR from IFR as far as practical | Air traffic advisory service; flight information service if requested | 250 kts IAS below 3 050 m (10 000 ft) AMSL | Yes <sup>3</sup>                           | No <sup>3</sup>                                            | No                          |
|       | VFR            | Nil                              | Flight information service if requested                               | 250 kts IAS below 3 050 m (10 000 ft) AMSL | No <sup>2</sup>                            | No <sup>2</sup>                                            | No                          |
| G     | IFR            | Nil                              | Flight information service if requested                               | 250 kts IAS below 3 050 m (10 000 ft) AMSL | Yes <sup>2</sup>                           | No <sup>2</sup>                                            | No                          |
|       | VFR            | Nil                              | Flight information service if requested                               | 250 kts IAS below 3 050 m (10 000 ft) AMSL | No <sup>2</sup>                            | No <sup>2</sup>                                            | No                          |

<sup>2</sup> Pilots shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel in RMZ.

<sup>3</sup> Air-ground voice communications mandatory for flights participating in the advisory service. Pilots shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel in RMZ.

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

*ED Decision 2013/013/R*

### **GENERAL**

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

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

Regulation (EU) 2024/1111

### A. REPORTING INSTRUCTIONS

#### MODEL AIREP SPECIAL

| ITEM | PARAMETER                                       | TRANSMIT IN TELEPHONY as appropriate |
|------|-------------------------------------------------|--------------------------------------|
| –    | Message-type designator<br>– special air-report | [AIREP] SPECIAL                      |

|                                                                |                                       |                                                                    |                                                  |
|----------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------|--------------------------------------------------|
| Section 1                                                      | 1                                     | Aircraft identification                                            | (aircraft identification)                        |
|                                                                | 2                                     | Position                                                           | POSITION (latitude and longitude)                |
|                                                                |                                       |                                                                    | OVER (significant point)                         |
|                                                                |                                       |                                                                    | ABEAM (significant point)                        |
|                                                                |                                       |                                                                    | (significant point) (bearing) (distance)         |
|                                                                | 3                                     | Time                                                               | (time)                                           |
|                                                                | 4                                     | Level                                                              | FLIGHT LEVEL (number) or (number) METERS or FEET |
| CLIMBING TO FLIGHT LEVEL (number) or (number) METERS or FEET   |                                       |                                                                    |                                                  |
| DESCENDING TO FLIGHT LEVEL (number) or (number) METERS or FEET |                                       |                                                                    |                                                  |
| 5                                                              | Next position and estimated time over | (position) (time)                                                  |                                                  |
| 6                                                              | Ensuing significant point             | (position) NEXT                                                    |                                                  |
| Section 2                                                      | 7                                     | Estimated time of arrival                                          | (aerodrome) (time)                               |
|                                                                | 8                                     | Endurance                                                          | ENDURANCE (hours and minutes)                    |
| Section 3                                                      | 9                                     | Phenomenon encountered or observed prompting a special air-report: |                                                  |
|                                                                |                                       | – Moderate turbulence                                              | TURBULENCE MODERATE                              |
|                                                                |                                       | – Severe turbulence                                                | TURBULENCE SEVERE                                |
|                                                                |                                       | – Moderate icing                                                   | ICING MODERATE                                   |

|  |  |                                                        |                                                     |
|--|--|--------------------------------------------------------|-----------------------------------------------------|
|  |  | – Severe icing                                         | ICING SEVERE                                        |
|  |  | – Severe mountain wave                                 | MOUNTAIN WAVE SEVERE                                |
|  |  | – Thunderstorms without hail                           | THUNDERSTORMS                                       |
|  |  | – Thunderstorms with hail                              | THUNDERSTORMS WITH HAIL                             |
|  |  | – Heavy dust/sandstorm                                 | DUSTSTORM or SANDSTORM HEAVY                        |
|  |  | – Volcanic ash cloud                                   | VOLCANIC ASH CLOUD                                  |
|  |  | – Pre- eruption volcanic activity or volcanic eruption | PRE-ERUPTION VOLCANIC ACTIVITY or VOLCANIC ERUPTION |
|  |  |                                                        |                                                     |
|  |  | Runway braking action                                  |                                                     |
|  |  | • Good                                                 | GOOD                                                |
|  |  | • Good to medium                                       | GOOD TO MEDIUM                                      |
|  |  | • Medium                                               | MEDIUM                                              |
|  |  | • Medium to poor                                       | MEDIUM TO POOR                                      |
|  |  | • Poor                                                 | POOR                                                |
|  |  | • Less than poor                                       | LESS THAN POOR                                      |

## 1. CONTENTS OF AIR-REPORTS

### 1.1. Position reports and special air-reports

- 1.1.1. Section 1 of the model set out in point A is obligatory for position reports and special air-reports, although Items 5 and 6 thereof may be omitted. Section 2 shall be added, in whole or in part, only when so requested by the operator or its designated representative, or when deemed necessary by the pilot-in-command. Section 3 shall be included in special air-reports.
- 1.1.2. Condition prompting the issuance of a special air-report are to be selected from the list presented in point [SERA.12005\(a\)](#).
- 1.1.3. In the case of special air-reports containing information on volcanic activity, a post-flight report shall be made using the volcanic activity reporting form (Model VAR) set out in point B. All elements which are observed shall be recorded and indicated respectively in the appropriate places on the form Model VAR.
- 1.1.4. Special air-reports shall be issued as soon as practicable after a phenomenon calling for a special air-report has been observed.

## 2. DETAILED REPORTING INSTRUCTIONS

2.1. Items of an air-report shall be reported in the order in which they are listed in the model AIREP SPECIAL form.

— MESSAGE TYPE DESIGNATOR. Report “SPECIAL” for a special air-report.

### **Section 1**

**Item 1 – AIRCRAFT IDENTIFICATION.** Report the aircraft radiotelephony call sign as prescribed in point [SERA.14050](#).

**Item 2 – POSITION.** Report position in latitude (degrees as 2 numerics or degrees and minutes as 4 numerics, followed by “North” or “South”) and longitude (degrees as 3 numerics or degrees and minutes as 5 numerics followed by “East” or “West”), or as a significant point identified by a coded designator (2 to 5 characters), or as a significant point followed by magnetic bearing (3 numerics) and distance in nautical miles from the point. Precede significant point with “ABEAM”, if applicable.

**Item 3 – TIME.** Report time in hours and minutes UTC (4 numerics) unless reporting time in minutes past the hour (2 numerics) is prescribed on the basis of regional air navigation agreements. The time reported must be the actual time of the aircraft at the position and not the time of origination or transmission of the report. Time shall always be reported in hours and minutes UTC when issuing a special air-report.

**Item 4 – FLIGHT LEVEL OR ALTITUDE.** Report flight level by 3 numerics when on standard pressure altimeter setting. Report altitude in metres followed by “METRES” or in feet followed by “FEET” when on QNH. Report “CLIMBING” (followed by the level) when climbing or “DESCENDING” (followed by the level) when descending to a new level after passing the significant point.

**Item 5 – NEXT POSITION AND ESTIMATED TIME OVER.** Report the next reporting point and the estimated time over such reporting point, or report the estimated position that will be reached one hour later, according to the position reporting procedures in force. Use the data conventions specified in Item 2 for position. Report the estimated time over this position. Report time in hours and minutes UTC (4 numerics) unless reporting time in minutes past the hour (2 numerics) as prescribed by regional air navigation agreements.

**Item 6 – ENSUING SIGNIFICANT POINT.** Report the ensuing significant point following the “next position and estimated time over”.

### **Section 2**

**Item 7 – ESTIMATED TIME OF ARRIVAL.** Report the name of the aerodrome of the first intended landing, followed by the estimated time of arrival at this aerodrome in hours and minutes UTC (4 numerics).

**Item 8 – ENDURANCE.** Report “ENDURANCE” followed by fuel/energy endurance in hours and minutes (4 numerics).

### **Section 3**

**Item 9 – PHENOMENON PROMPTING A SPECIAL AIR-REPORT.** Report one of the following phenomena encountered or observed:

- Moderate turbulence as “TURBULENCE MODERATE”
- Severe turbulence as “TURBULENCE SEVERE”

The following specifications apply:

- Moderate – Conditions in which moderate changes in aircraft attitude and/or altitude may occur but the aircraft remains in positive control at all times. Usually, small variations in airspeed. Changes in accelerometer readings of 0,5 g to 1,0 g at the aircraft's centre of gravity. Difficulty in walking. Occupants feel strain against seat belts. Loose objects move about.
- Severe – Conditions in which abrupt changes in aircraft attitude and/or altitude occur; aircraft may be out of control for short periods. Usually, large variations in airspeed. Changes in accelerometer readings greater than 1,0 g at the aircraft's centre of gravity. Occupants are forced violently against seat belts. Loose objects are tossed about.

- Moderate icing as "ICING MODERATE"

Severe icing as "ICING SEVERE"

The following specifications apply:

- Moderate – Conditions in which change of heading and/or altitude may be considered desirable.
  - Severe – Conditions in which immediate change of heading and/or altitude is considered essential.
- Severe mountain wave as "MOUNTAIN WAVE SEVERE"

The following specification applies:

- Severe – Conditions in which the accompanying downdraft is 3,0 m/s (600 ft/min) or more and/or severe turbulence is encountered.
- Thunderstorm without hail as "THUNDERSTORM"

Thunderstorm with hail as "THUNDERSTORM WITH HAIL"

The following specification applies:

Only report those thunderstorms which are:

- obscured in haze, or
  - embedded in cloud, or
  - widespread, or
  - forming a squall line.
- Heavy duststorm or sandstorm as "DUSTSTORM HEAVY" or "SANDSTORM HEAVY"
  - Volcanic ash cloud as "VOLCANIC ASH CLOUD"
  - Pre-eruption volcanic activity or a volcanic eruption as "PREERUPTION VOLCANIC ACTIVITY" or "VOLCANIC ERUPTION"

The following specification applies:

"Pre-eruption volcanic activity" in this context means unusual and/or increasing volcanic activity which could presage a volcanic eruption.

- Good braking action as "BRAKING ACTION GOOD"

- Good to medium braking action as “BRAKING ACTION GOOD TO MEDIUM”
- Medium braking action as “BRAKING ACTION MEDIUM”
- Medium to poor braking action as “BRAKING ACTION MEDIUM TO POOR”
- Poor braking action as “BRAKING ACTION POOR”
- Less than poor braking action as “BRAKING ACTION LESS THAN POOR”

The following specifications apply:

Good – Braking deceleration is normal for the wheel braking effort applied, and directional control is normal.

Good to medium – Braking deceleration or directional control is between good and medium.

Medium – Braking deceleration is noticeably reduced for the wheel braking effort applied, or directional control is noticeably reduced.

Medium to poor – Braking deceleration or directional control is between medium and poor.

Poor – Braking deceleration is significantly reduced for the wheel braking effort applied, or directional control is significantly reduced.

Less than poor – Braking deceleration is minimal to non-existent for the wheel braking effort applied, or directional control is uncertain.

- 2.2 Information recorded on the volcanic activity reporting form (Model VAR) is not for transmission by RTF but, on arrival at an aerodrome, is to be delivered without delay by the operator or a flight crew member to the aerodrome meteorological office. If such an office is not easily accessible, the completed form shall be delivered in accordance with local arrangements agreed upon between MET and ATS providers and the aircraft operator.

### **3. FORWARDING OF METEOROLOGICAL INFORMATION RECEIVED BY VOICE COMMUNICATIONS**

When receiving special air-reports, ATS units shall forward these air-reports without delay to the associated meteorological watch office (MWO). In order to ensure assimilation of air-reports in ground-based automated systems, the elements of such reports shall be transmitted using the data conventions specified below and in the order prescribed.

- ADDRESSEE. Record the station called and, when necessary, relay required.
- MESSAGE TYPE DESIGNATOR. Record “ARS” for a special air-report.
- AIRCRAFT IDENTIFICATION. Record the aircraft identification using the data convention specified for Item 7 of the flight plan, without a space between the operator’s designator and the aircraft registration or flight identification, if used.

#### **Section 1**

**Item 0 – POSITION.** Record position in latitude (degrees as 2 numerics or degrees and minutes as 4 numerics, followed, without a space, by N or S) and longitude (degrees as 3 numerics or degrees and minutes as 5 numerics, followed without a space by E or W), or as a significant point identified by a coded designator (2 to 5 characters), or as a significant point followed by

magnetic bearing (3 numerics) and distance in nautical miles (3 numerics) from the point. Precede significant point with “ABEAM”, if applicable.

**Item 1 – TIME.** Record time in hours and minutes UTC (4 numerics).

**Item 2 – FLIGHT LEVEL OR ALTITUDE.** Record “F” followed by 3 numerics (e.g. “F310”) when a flight level is reported. Record altitude in metres followed by “M” or in feet followed by “FT” when an altitude is reported. Record “ASC” (level) when climbing or “DES” (level) when descending.

### **Section 3**

**Item 9 – PHENOMENON PROMPTING A SPECIAL AIR-REPORT.** Record the phenomenon reported as follows:

- moderate turbulence as “TURB MOD”,
- severe turbulence as “TURB SEV”,
- moderate icing as “ICE MOD”,
- severe icing as “ICE SEV”,
- severe mountain wave as “MTW SEV”,
- thunderstorm without hail as “TS”,
- thunderstorm with hail as “TSGR”,
- heavy sandstorm as “HVY SS”,
- heavy duststorm as “HVY DS”,
- volcanic ash cloud as “VA CLD”,
- pre-eruption volcanic activity or a volcanic eruption as “VA”,
- hail as “GR”,
- cumulonimbus clouds as “CB”.

TIME TRANSMITTED. Record only when Section 3 is transmitted.

## **4. SPECIFIC PROVISIONS RELATED TO REPORTING WIND SHEAR AND VOLCANIC ASH**

### **4.1. Reporting of wind shear**

- 4.1.1. When reporting aircraft observations of wind shear encountered during the climb-out and approach phases of flight, the aircraft type shall be included.
- 4.1.2. Where wind shear conditions in the climb-out or approach phases of flight were reported or forecast but not encountered, the pilot-in-command shall advise the appropriate air traffic services unit as soon as practicable unless the pilot-in-command is aware that the appropriate air traffic services unit has already been so advised by a preceding aircraft.

### **4.2. Post-flight reporting of volcanic activity**

- 4.2.1. On arrival of a flight at an aerodrome, the completed report of volcanic activity shall be delivered by the aircraft operator or a flight crew member, without delay, to the aerodrome meteorological office, or if such office is not easily accessible to arriving flight crew members, the completed form shall be dealt with in accordance

with local arrangements agreed upon between MET and ATS providers and the aircraft operator.

- 4.2.2. The completed report of volcanic activity received by an aerodrome meteorological office shall be transmitted without delay to the meteorological watch office responsible for the provision of meteorological watch for the flight information region in which the volcanic activity was observed.

## B. SPECIAL AIR-REPORT OF VOLCANIC ACTIVITY FORM (MODEL VAR)

MODEL VAR: to be used for post-flight reporting

### VOLCANIC ACTIVITY REPORT

Air- reports are critically important in assessing the hazards which volcanic ash cloud presents to aircraft operations.

|                                                                                                                                                                                                              |       |                                            |                                                                                                                                                                                                             |                                          |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------|
| OPERATOR:                                                                                                                                                                                                    |       |                                            | A/C IDENTIFICATION: (as indicated on flight plan)                                                                                                                                                           |                                          |            |
| PILOT- IN- COMMAND:                                                                                                                                                                                          |       |                                            |                                                                                                                                                                                                             |                                          |            |
| DEP FROM:                                                                                                                                                                                                    | DATE: | TIME; UTC:                                 | ARR AT:                                                                                                                                                                                                     | DATE:                                    | TIME; UTC: |
| ADDRESSEE                                                                                                                                                                                                    |       |                                            | AIREP SPECIAL                                                                                                                                                                                               |                                          |            |
| Items 1-8 are to be reported immediately to the ATS unit that you are in contact with.                                                                                                                       |       |                                            |                                                                                                                                                                                                             |                                          |            |
| 1) AIRCRAFT IDENTIFICATION                                                                                                                                                                                   |       |                                            | 2) POSITION                                                                                                                                                                                                 |                                          |            |
| 3) TIME                                                                                                                                                                                                      |       |                                            | 4) FLIGHT LEVEL OR ALTITUDE                                                                                                                                                                                 |                                          |            |
| 5) VOLCANIC ACTIVITY OBSERVED AT<br>(position or bearing, estimated level of ash cloud and distance from aircraft)                                                                                           |       |                                            |                                                                                                                                                                                                             |                                          |            |
| 6) AIR TEMPERATURE                                                                                                                                                                                           |       |                                            | 7) SPOT WIND                                                                                                                                                                                                |                                          |            |
| 8) SUPPLEMENTARY INFORMATION                                                                                                                                                                                 |       |                                            | Other _____                                                                                                                                                                                                 |                                          |            |
| SO <sub>2</sub> DETECTED                                                                                                                                                                                     |       |                                            | yes <input type="checkbox"/> no <input type="checkbox"/>                                                                                                                                                    |                                          |            |
| Ash encountered                                                                                                                                                                                              |       |                                            | yes <input type="checkbox"/> no <input type="checkbox"/> (brief description of activity especially vertical and lateral extent of ash cloud and, where possible, horizontal movement, rate of growth, etc.) |                                          |            |
| After landing complete items 9-16 then fax form to: (Fax number to be provided by the meteorological authority based on local arrangements between the meteorological authority and the operator concerned.) |       |                                            |                                                                                                                                                                                                             |                                          |            |
| 9) DENSITY OF ASH CLOUD                                                                                                                                                                                      |       | <input type="checkbox"/> (a) Wispy         | <input type="checkbox"/> (b) Moderate dense                                                                                                                                                                 | <input type="checkbox"/> (c) Very dense  |            |
| 10) COLOUR OF ASH CLOUD                                                                                                                                                                                      |       | <input type="checkbox"/> (a) White         | <input type="checkbox"/> (b) Light grey                                                                                                                                                                     | <input type="checkbox"/> (c) Dark grey   |            |
|                                                                                                                                                                                                              |       | <input type="checkbox"/> (d) black         | <input type="checkbox"/> (e) other _____                                                                                                                                                                    |                                          |            |
| 11) ERUPTION                                                                                                                                                                                                 |       | <input type="checkbox"/> (a) continuous    | <input type="checkbox"/> (b) intermittent                                                                                                                                                                   | <input type="checkbox"/> (c) not visible |            |
| 12) POSITION OF ACTIVITY                                                                                                                                                                                     |       | <input type="checkbox"/> (a) Summit        | <input type="checkbox"/> (b) side                                                                                                                                                                           | <input type="checkbox"/> (c) Single      |            |
|                                                                                                                                                                                                              |       | <input type="checkbox"/> (d) Multiple      | <input type="checkbox"/> (e) Not observed                                                                                                                                                                   |                                          |            |
| 13) OTHER OBSERVED FEATURES OF ERUPTION                                                                                                                                                                      |       | <input type="checkbox"/> (a) Lightning     | <input type="checkbox"/> (b) Glow                                                                                                                                                                           | <input type="checkbox"/> (c) Large rocks |            |
|                                                                                                                                                                                                              |       | <input type="checkbox"/> (d) Ash fallout   | <input type="checkbox"/> (e) Mushroom cloud                                                                                                                                                                 | <input type="checkbox"/> (f) All         |            |
| 14) EFFECT ON AIRCRAFT                                                                                                                                                                                       |       | <input type="checkbox"/> (a) Communication | <input type="checkbox"/> (b) Navigation systems                                                                                                                                                             | <input type="checkbox"/> (c) Engines     |            |
|                                                                                                                                                                                                              |       | <input type="checkbox"/> (d) Pitot static  | <input type="checkbox"/> (e) Windscreen                                                                                                                                                                     | <input type="checkbox"/> (f) Windows     |            |
| 15) OTHER EFFECTS                                                                                                                                                                                            |       | <input type="checkbox"/> (a) Turbulence    | <input type="checkbox"/> (b) St. Elmo's Fire                                                                                                                                                                | <input type="checkbox"/> (c) Other fumes |            |
| 16) OTHER INFORMATION<br>(Any information considered useful.)                                                                                                                                                |       |                                            |                                                                                                                                                                                                             |                                          |            |

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

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### FLIGHT LEVEL OR ALTITUDE

Example:

'FLIGHT LEVEL 310'

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

ED Decision 2016/023/R

### 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

ED Decision 2016/023/R

### AIRCRAFT IDENTIFICATION

Example:

'New Zealand 103' as 'ANZ103'

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

ED Decision 2016/023/R

### POSITION

Example:

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

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

ED Decision 2016/023/R

Examples of special air reports by voice communication

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

<sup>1</sup> A special air-report which is required because of the occurrence of widespread thunderstorms with hail.<sup>2</sup> A special air-report which is required because of severe turbulence. The aircraft is on QNH altimeter setting

## APPENDIX 6 COMPLETION OF A FLIGHT PLAN

### APPENDIX 6 COMPLETION OF A FLIGHT PLAN

Regulation (EU) 2024/404

#### 1. ICAO MODEL FLIGHT PLAN FORM

| FLIGHT PLAN<br>PLAN DE VOL                                                                                                                                         |                                                          |                                                        |                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| PRIORITY<br>Priorité<br>FF                                                                                                                                         |                                                          | ADDRESSEE(S)<br>Destinataire(s)                        |                                                             |
| FILING TIME<br>Heure de dépôt                                                                                                                                      |                                                          | ORIGINATOR<br>Expéditeur                               |                                                             |
| SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR<br>Identification précise du(des) destinataire(s) et/ou de l'expéditeur                                  |                                                          |                                                        |                                                             |
| 3 MESSAGE TYPE<br>Type de message<br>(FPL)                                                                                                                         | 7 AIRCRAFT IDENTIFICATION<br>Identification de l'aéronef | 8 FLIGHT RULES<br>Règles de vol                        | TYPE OF FLIGHT<br>Type de vol                               |
| 9 NUMBER<br>Nombre                                                                                                                                                 | TYPE OF AIRCRAFT<br>Type d'aéronef                       | WAKE TURBULENCE CAT.<br>Cat. de turbulence de sillage  | 10 EQUIPMENT<br>Équipement                                  |
| 13 DEPARTURE AERODROME<br>Aérodrome de départ                                                                                                                      | TIME<br>Heure                                            |                                                        |                                                             |
| 15 CRUISING SPEED<br>Vitesse croisière                                                                                                                             | LEVEL<br>Niveau                                          | ROUTE<br>Route                                         |                                                             |
|                                                                                                                                                                    |                                                          |                                                        |                                                             |
|                                                                                                                                                                    |                                                          |                                                        |                                                             |
|                                                                                                                                                                    |                                                          |                                                        |                                                             |
| 16 DESTINATION AERODROME<br>Aérodrome de destination                                                                                                               | TOTAL EET<br>Durée totale estimée<br>HR MIN              | ALTN AERODROME<br>Aérodrome de déviation               | 2ND ALTN AERODROME<br>2 <sup>e</sup> aérodrome de déviation |
| 18 OTHER INFORMATION<br>Renseignements divers                                                                                                                      |                                                          |                                                        |                                                             |
|                                                                                                                                                                    |                                                          |                                                        |                                                             |
|                                                                                                                                                                    |                                                          |                                                        |                                                             |
|                                                                                                                                                                    |                                                          |                                                        |                                                             |
| SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)<br>Renseignements complémentaires (À NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL DÉPOSÉ) |                                                          |                                                        |                                                             |
| 19 ENDURANCE<br>Autonomie<br>E / HR MIN                                                                                                                            | PERSONS ON BOARD<br>Personnes à bord<br>P /              | EMERGENCY RADIO<br>Radio de secours<br>R / UHF VHF ELT |                                                             |
| SURVIVAL EQUIPMENT/Équipement de survie                                                                                                                            |                                                          |                                                        |                                                             |
| JACKETS/Gilets de sauvetage                                                                                                                                        |                                                          |                                                        |                                                             |
| FLUORES<br>Fluores                                                                                                                                                 |                                                          |                                                        |                                                             |
| UHF VHF                                                                                                                                                            |                                                          |                                                        |                                                             |
| DINGHIES/Canots                                                                                                                                                    |                                                          |                                                        |                                                             |
| POLAR Désert Maritime Jungle                                                                                                                                       |                                                          |                                                        |                                                             |
| LIGHT Lampes                                                                                                                                                       |                                                          |                                                        |                                                             |
| NUMBER Nombre CAPACITY Capacité COVER Couverture COLOUR Couleur                                                                                                    |                                                          |                                                        |                                                             |
| AIRCRAFT COLOUR AND MARKINGS<br>Couleur et marques de l'aéronef                                                                                                    |                                                          |                                                        |                                                             |
| REMARKS<br>Remarques                                                                                                                                               |                                                          |                                                        |                                                             |
| PILOT-IN-COMMAND<br>Pilote commandant de bord                                                                                                                      |                                                          |                                                        |                                                             |
| C /                                                                                                                                                                |                                                          |                                                        |                                                             |
| FILED BY / Déposé par                                                                                                                                              |                                                          |                                                        |                                                             |
| SPACE RESERVED FOR ADDITIONAL REQUIREMENTS<br>Espace réservé à des fins supplémentaires                                                                            |                                                          |                                                        |                                                             |

## 2. INSTRUCTIONS FOR THE COMPLETION OF THE FLIGHT PLAN FORM

### 2.1 General

*Adhere closely* to the prescribed formats and manner of specifying data.

*Commence inserting* data in the first space provided. Where excess space is available, leave unused spaces blank.

*Insert* all clock times in 4 figures UTC.

*Insert* all estimated elapsed times in 4 figures (hours and minutes).

*The shaded area preceding item 3* – shall be completed by ATS and COM services, unless the responsibility for originating flight plan messages has been delegated.

### 2.2 Instructions for insertion of ATS data

*Complete items 7 to 18 and, when so required by the competent authority or otherwise deemed necessary, item 19* as indicated hereunder.

|                                                                        |
|------------------------------------------------------------------------|
| <b>ITEM 7:      AIRCRAFT IDENTIFICATION<br/>(MAXIMUM 7 CHARACTERS)</b> |
|------------------------------------------------------------------------|

*INSERT* one of the following aircraft identifications, not exceeding 7 alphanumeric characters and without hyphens or symbols:

- (a) the ICAO designator for the aircraft operator followed by the flight identification (e.g. KLM511, NGA213, JTR25) when in radiotelephony the call sign to be used by the aircraft consists of the ICAO telephony designator for the operator followed by the flight identification (e.g. KLM511, NIGERIA 213, JESTER 25); or
- (b) the nationality or common mark and registration mark of the aircraft (e.g. EIAKO, 4XBCD, N2567GA), when:
  - (1) in radiotelephony the call sign to be used by the aircraft consists of this identification alone (e.g. CGAJS), or preceded by the ICAO telephony designator for the aircraft operator (e.g. BLIZZARD CGAJS);
  - (2) the aircraft is not equipped with radio.

|                                                                                 |
|---------------------------------------------------------------------------------|
| <b>ITEM 8:      FLIGHT RULES AND TYPE OF<br/>FLIGHT (ONE OR TWO CHARACTERS)</b> |
|---------------------------------------------------------------------------------|

|              |
|--------------|
| Flight rules |
|--------------|

*INSERT* one of the following letters to denote the category of flight rules with which the pilot intends to comply:

- I** – if it is intended that the entire flight is operated under IFR; or
- V** – if it is intended that the entire flight is operated under VFR; or

- Y** – if the flight is initially operated under IFR, followed by one or more subsequent changes of flight rules; or
- Z** – if the flight is initially operated under VFR, followed by one or more subsequent changes of flight rules.

Specify in Item 15 the point or points at which a change of flight rules is planned.

Type of flight

*INSERT* one of the following letters to denote the type of flight when so required by the competent authority:

- S** – if scheduled air service;
- N** – if non-scheduled air transport operation;
- G** – if general aviation;
- M** – if military;
- X** – if other than any of the defined categories above.

*Specify* status of a flight following the indicator STS in Item 18, or when necessary to denote other reasons for specific handling by ATS, indicate the reason following the indicator RMK in Item 18.

**ITEM 9: NUMBER AND TYPE OF AIRCRAFT  
AND WAKE TURBULENCE CATEGORY**

Number of aircraft (1 or 2 characters)

*INSERT* the number of aircraft, if more than one.

Type of aircraft (2 to 4 characters)

*INSERT* the appropriate designator as specified in Doc 8643, Aircraft Type Designators,

*OR*, if no such designator has been assigned, or in case of formation flights comprising more than one type,

*INSERT* ZZZZ, and *SPECIFY* in item 18 the (numbers and) type(s) of aircraft preceded by 'TYP/

Wake turbulence category (1 character)

*INSERT* an oblique stroke followed by one of the following letters to indicate the wake turbulence category of the aircraft:

- J** – SUPER, to indicate an aircraft type specified as such in ICAO Doc 8643, Aircraft Type Designators, latest edition;

- H** – HEAVY, to indicate an aircraft type with a maximum certified take-off mass of 136 000 kg or more, with the exception of aircraft types listed in ICAO Doc 8643 in the SUPER (J) category;
- M** – MEDIUM, to indicate an aircraft type with a maximum certified take-off mass of less than 136 000 kg but more than 7 000 kg;
- L** – LIGHT, to indicate an aircraft type with a maximum certified take-off mass of 7 000 kg or less.

|                                            |
|--------------------------------------------|
| <b>ITEM 10: EQUIPMENT AND CAPABILITIES</b> |
|--------------------------------------------|

Capabilities comprise the following elements:

- (a) presence of relevant serviceable equipment on board the aircraft;
- (b) equipment and capabilities commensurate with flight crew qualifications;  
and
- (c) where applicable, authorisation from the appropriate authority.

|                                                                               |
|-------------------------------------------------------------------------------|
| Radiocommunication, navigation and<br>approach aid equipment and capabilities |
|-------------------------------------------------------------------------------|

*INSERT* one letter as follows:

- N** – if no COM/NAV/approach aid equipment for the route to be flown is carried,  
or the equipment is unserviceable;

*OR*

- S** – if standard COM/NAV/approach aid equipment for the route to be flown is  
carried and serviceable;

*AND/OR*

*INSERT* one or more of the following letters to indicate the serviceable  
COM/NAV/approach aid equipment and capabilities available:

- A** GBAS landing system
- B** LPV (APV with SBAS)
- C** LORAN C
- D** DME
- E1** FMC WPR ACARS
- E2** D-FIS ACARS
- E3** PDC ACARS
- F** ADF

- G** GNSS. If any portion of the flight is planned to be conducted under IFR, it refers to GNSS receivers that comply with the requirements of Annex 10, Volume I
- H** HF RTF
- I** Inertial Navigation
- J1** CPDLC ATN VDL Mode 2
- J2** CPDLC FANS 1/A HFDL
- J3** CPDLC FANS 1/A VDL Mode A
- J4** CPDLC FANS 1/A VDL Mode 2
- J5** CPDLC FANS 1/A SATCOM (INMARSAT)
- J6** CPDLC FANS 1/A SATCOM (MTSAT)
- J7** CPDLC FANS 1/A SATCOM (Iridium)
- K** MLS
- L** ILS
- M1** ATC SATVOICE (INMARSAT)
- M2** ATC SATVOICE (MTSAT)
- M3** ATC SATVOICE (Iridium)
- O** VOR
- P1** CPDLC RCP 400
- P2** CPDLC RCP 240
- P3** SATVOICE RCP 400
- P4-P9** Reserved for RCP
- R** PBN approved
- T** TACAN
- U** UHF RTF
- V** VHF RTF
- W** RVSM approved
- X** MNPS approved
- Y** VHF with 8.33 kHz channel spacing capability
- Z** Other equipment carried or other capabilities

Any alphanumeric characters not indicated above are reserved.

## Surveillance equipment and capabilities

*INSERT*      **N** if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable;

*OR*

*INSERT*      one or more of the following descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment and/or capabilities on board:

*SSR Modes A and C*

- A** – Transponder – Mode A (4 digits – 4 096 codes)
- C** – Transponder – Mode A (4 digits – 4 096 codes) and Mode C

*SSR Mode S*

- E** – Transponder – Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability
- H** – Transponder – Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability
- I** – Transponder – Mode S, including aircraft identification, but no pressure-altitude capability
- L** – Transponder – Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability
- P** – Transponder – Mode S, including pressure-altitude, but no aircraft identification capability
- S** – Transponder – Mode S, including both pressure-altitude and aircraft identification capability
- X** – Transponder – Mode S with neither aircraft identification nor pressure-altitude capability

*ADS-B*

- B1** – ADS-B with dedicated 1 090 MHz ADS-B “out” capability
- B2** – ADS-B with dedicated 1 090 MHz ADS-B “out” and “in” capability
- U1** – ADS-B “out” capability using UAT
- U2** – ADS-B “out” and “in” capability using UAT
- V1** – ADS-B “out” capability using VDL Mode 4
- V2** – ADS-B “out” and “in” capability using VDL Mode 4

*ADS-C*

- D1** – ADS-C with FANS 1/A capabilities
- G1** – ADS-C with ATN capabilities

Alphanumeric characters not indicated above are reserved.

**ITEM 13: DEPARTURE AERODROME  
AND TIME (8 CHARACTERS)**

*INSERT* the ICAO 4-letter location indicator of the departure aerodrome as specified in Doc 7910, Location Indicators;

*OR*, if no location indicator has been assigned,

*INSERT* ZZZZ and *SPECIFY*, in Item 18:

- the name and location of the aerodrome preceded by DEP/; or
- the first point of the route or the marker radio beacon preceded by DEP/..., if the aircraft has not taken off from an aerodrome;

*OR*, – if the flight plan is received from an aircraft in flight,

*INSERT* AFIL, and *SPECIFY*, in Item 18, the ICAO 4-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, preceded by DEP/.

*THEN, WITHOUT A SPACE*,

*INSERT* for a flight plan submitted before departure, the estimated off-block time (EOBT),

*OR*, for a flight plan received from an aircraft in flight, the actual or estimated time over the first point of the route to which the flight plan applies.

**ITEM 15: ROUTE**

*INSERT* the first cruising speed as in (a) and the first cruising level as in (b), without a space between them.

*THEN*, following the arrow, *INSERT* the route description as in (c).

(a) Cruising speed (maximum 5 characters)

*INSERT* the *True airspeed* for the first or the whole cruising portion of the flight, in terms of:

*Kilometres per hour*, expressed as K followed by 4 figures (e.g. K0830), or

*Knots*, expressed as N followed by 4 figures (e.g. N0485), or

*True Mach number*, when so prescribed by the appropriate ATS authority, to the nearest hundredth of unit Mach, expressed as M followed by 3 figures (e.g. M082).

(b) Cruising level (maximum 5 characters)

*INSERT* the planned cruising level for the first or the whole portion of the route to be flown, in terms of:

*Flight level, expressed as F followed by 3 figures (e.g. F085; F330), or*

*Standard metric level in tens of metres, when so prescribed by the competent authority expressed as S followed by 4 figures (e.g. S1130), or*

*Altitude in hundreds of feet, expressed as A followed by 3 figures (e.g. A045; A100), or*

*Altitude in tens of metres, expressed as M followed by 4 figures (e.g. M0840), or*

*for uncontrolled VFR flights, the letters VFR.*

(c) Route (including changes of speed level and/or flight rules)

*Flights along designated ATS routes*

*INSERT,* if the departure aerodrome is located on or connected to the ATS route, the designator of the first ATS route,

*OR,* if the departure aerodrome is not on or connected to the ATS route, the letters DCT followed by the point of joining the first ATS route, followed by the designator of the ATS route.

*THEN*

*INSERT* each point at which either a change of speed and/or level is planned to commence, or a change of ATS route, and/or a change of flight rules is planned,

*FOLLOWED IN EACH CASE*

by the designator of the next ATS route segment, even if it is the same as the previous one,

*OR* by DCT, if the flight to the next point is outside a designated route, unless both points are defined by geographical coordinates.

*Flights outside designated ATS routes*

*INSERT* points normally not more than 30 minutes flying time or 370 km (200 NM) apart, including each point at which a change of speed or level, a change of track, or a change of flight rules is planned,

*OR,* when required by competent authority(ies),

*DEFINE* the track of flights operating predominantly in an east-west direction between 70°N and 70°S by reference to significant points formed by the intersections of half or whole degrees of latitude with meridians spaced at intervals of 10 degrees of longitude. For flights operating in areas outside those latitudes, the tracks shall be defined by significant points formed by the intersection of

parallels of latitude with meridians normally spaced at 20 degrees of longitude. The distance between significant points shall, as far as possible, not exceed 1 hour's flight time. Additional significant points shall be established as deemed necessary.

For flights operating predominantly in a north-south direction, define tracks by reference to significant points formed by the intersection of whole degrees of longitude with specified parallels of latitude which are spaced at 5 degrees.

*INSERT* DCT between successive points unless both points are defined by geographical coordinates or by bearing and distance.

*USE ONLY* the conventions in (1) to (5) below and *SEPARATE* each sub-item by a space.

- (1) ATS route (2 to 7 characters)

*The coded designator* assigned to the route or route segment including, where appropriate, the coded designator assigned to the standard departure or arrival route (e.g. BCN1, BI, R14, UB10, KODAP2A).

- (2) Significant point (2 to 11 characters)

*The coded designator* (2 to 5 characters) assigned to the point (e.g. LN, MAY, HADDY),

or, if no coded designator has been assigned, one of the following ways:

- *Degrees only* (7 characters):

2 figures describing latitude in degrees, followed by "N" (North) or "S" (South), followed by 3 figures describing longitude in degrees, followed by "E" (East) or "W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 46N078W.

- *Degrees and minutes* (11 characters):

4 figures describing latitude in degrees and tens and units of minutes followed by "N" (North) or "S" (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by "E" (East) or "W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W.

- *Bearing and distance from a reference point:*

The identification of the reference point, followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros – e.g. a point 180° magnetic at a distance of 40 NM from VOR "DUB" should be expressed as DUB180040.

(3) Change of speed or level (maximum 21 characters)

*The point at which a change of speed (5 % TAS or 0,01 Mach or more) or a change of level is planned to commence, expressed exactly as in (2) above, followed by an oblique stroke and both the cruising speed and the cruising level, expressed exactly as in (a) and (b) above, without a space between them, even when only one of these quantities will be changed.*

Examples: LN/N0284A045  
MAY/N0305F180  
HADDY/N0420F330  
4602N07805W/N0500F350  
46N078W/M082F330  
DUB180040/N0350M0840

(4) Change of flight rules (maximum 3 characters)

*The point at which the change of flight rules is planned, expressed exactly as in (2) or (3) above as appropriate, followed by a space and one of the following:*

VFR if from IFR to VFR

IFR if from VFR to IFR

Examples: LN VFR  
LN/N0284A050 IFR

(5) Cruise climb (maximum 28 characters)

*The letter C followed by an oblique stroke; THEN the point at which cruise climb is planned to start, expressed exactly as in (2) above, followed by an oblique stroke; THEN the speed to be maintained during cruise climb, expressed exactly as in (a) above, followed by the two levels defining the layer to be occupied during cruise climb, each level expressed exactly as in (b) above, or the level above which cruise climb is planned followed by the letters PLUS, without a space between them.*

Examples: C/48N050W/M082F290F350  
C/48N050W/M082F290PLUS  
C/52N050W/M220F580F620

**ITEM 16: DESTINATION AERODROME AND  
TOTAL ESTIMATED ELAPSED TIME,  
DESTINATION ALTERNATE AERODROME(S)**

Destination aerodrome and total estimated elapsed time (8 characters)

*INSERT* the ICAO 4-letter location indicator of the destination aerodrome as specified in Doc 7910, Location Indicators,

*OR*, if no location indicator has been assigned,

*INSERT* ZZZZ and *SPECIFY* in Item 18 the name and location of the aerodrome, preceded by DEST/.

*THEN WITHOUT A SPACE*

*INSERT* the total estimated elapsed time.

Destination alternate aerodrome

*INSERT* the ICAO 4-letter location indicator(s) of not more than two destination alternate aerodromes, as specified in Doc 7910, Location Indicators, separated by a space,

*OR*, if no location indicator has been assigned to the destination alternate aerodrome(s),

*INSERT* ZZZZ and *SPECIFY* in Item 18 the name and location of the destination alternate aerodrome(s), preceded by ALTN/.

**ITEM 18: OTHER INFORMATION**

Hyphens or oblique strokes should only be used as prescribed below.

*INSERT* 0 (zero) if no other information,

*OR*, any other necessary information in the sequence shown hereunder, in the form of the appropriate indicator selected from those defined hereunder followed by an oblique stroke and the information to be recorded:

**STS/** Reason for special handling by ATS, e.g. a search and rescue mission, as follows:

**ALTRV:** for a flight operated in accordance with an altitude reservation;

**ATFMX:** for a flight approved for exemption from ATFM measures by the competent authority;

**FFR:** firefighting;

**FLTCK:** flight check for calibration of nav aids;

**HAZMAT:** for a flight carrying hazardous material;

**HEAD:** a flight with Head of State status;

**HOSP:** for a medical flight declared by medical authorities;

**HUM:** for a flight operating on a humanitarian mission

**MARSA:** for a flight for which a military entity assumes responsibility for separation of military aircraft;

**MEDEVAC:** for a life-critical medical emergency evacuation;

**NONRVSM:** for a non-RVSM-capable flight intending to operate in RVSM airspace;

**SAR:** for a flight engaged in a search and rescue mission; and

**STATE:** for a flight engaged in military, customs, or police services.

Other reasons for special handling by ATS shall be denoted under the designator "RMK/".

**PBN/** Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight, up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

#### **RNAV SPECIFICATIONS**

**A1** RNAV 10 (RNP 10)

**B1** RNAV 5 all permitted sensors

**B2** RNAV 5 GNSS

**B3** RNAV 5 DME/DME

**B4** RNAV 5 VOR/DME

**B5** RNAV 5 INS or IRS

**B6** RNAV 5 LORANC

**C1** RNAV 2 all permitted sensors

**C2** RNAV 2 GNSS

**C3** RNAV 2 DME/DME

**C4** RNAV 2 DME/DME/IRU

**D1** RNAV 1 all permitted sensors

**D2** RNAV 1 GNSS

**D3** RNAV 1 DME/DME

**D4** RNAV 1 DME/DME/IRU

#### **RNP SPECIFICATIONS**

**L1** RNP 4

**O1** Basic RNP 1 all permitted sensors

**O2** Basic RNP 1 GNSS

**O3** Basic RNP 1 DME/DME

**O4** Basic RNP 1 DME/DME/IRU

**S1** RNP APCH

- S2** RNP APCH with BARO-VNAV
- T1** RNP AR APCH with RF (special authorization required)
- T2** RNP AR APCH without RF (special authorization required)

Combinations of alphanumeric characters not indicated above are reserved.

**NAV/** Significant data related to navigation equipment, other than specified in PBN/, as required by the competent authority.

Indicate GNSS augmentation under this indicator, with a space between two or more methods of augmentation, e.g. NAV/GBAS SBAS.

Indicate EURPRNAV if the aircraft approved P-RNAV relies solely on VOR/DME for the determination of position.

**COM/** Indicate communication equipment and capabilities not specified in Item 10 a).

**DAT/** Indicate data communication equipment and capabilities not specified in Item 10 a) or "CPDLCX" to indicate exemption granted from the requirement to be equipped with CPDLC-ATN-B1.

**SUR/** Indicate surveillance equipment and capabilities not specified in Item 10 b). Indicate as many RSP specification(s) as apply to the flight, using designator(s) with no space. Multiple RSP specifications are separated by a space. Example: RSP180 RSP400.

Insert EUADSBX, EUEHSX, EUELSX, or a combination of them, to indicate exemptions granted for the requirement to be equipped with SSR Mode S transponders or ADS-B transmitters.

**DEP/** Name and location of departure aerodrome, if ZZZZ is inserted in Item 13, or the ATS unit from which supplementary flight plan data can be obtained, if AFIL is inserted in Item 13. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location as follows:

With 4 figures describing latitude in degrees and tens and units of minutes followed by "N" (North) or "S" (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by "E" (East) or "W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W (11 characters).

OR, Bearing and distance from the nearest significant point, as follows:

The identification of the significant point followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing NM. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros, e.g. a point of 180° magnetic at a distance of 40 NM from VOR "DUB" should be expressed as DUB180040.

OR, The first point of the route (name or LAT/LONG) or the marker radio beacon, if the aircraft has not taken off from an aerodrome.

- DEST/** Name and location of destination aerodrome, if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described under DEP/above.
- DOF/** The date of flight departure in a 6-figure format (YYMMDD, where YY equals the year, MM equals the month, and DD equals the day).
- REG/** The nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7.
- EET/** Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the competent authority.  
Examples: EET/CAP0745 XYZ0830  
EET/EINN0204
- SEL/** SELCAL Code, for aircraft so equipped.
- TYP/** Type(s) of aircraft, preceded if necessary without a space by number(s) of aircraft and separated by one space, if ZZZZ is inserted in Item 9.  
Example: TYP/2F15 5F5 3B2
- CODE/** Aircraft address (expressed in the form of an alphanumerical code of 6 hexadecimal characters) when required by the competent authority. Example: "F00001" is the lowest aircraft address contained in the specific block administered by ICAO.
- DLE/** En-route delay or holding, insert the significant point(s) on the route where a delay is planned to occur, followed by the length of delay using 4-figure time in hours and minutes (hhmm).  
Example: DLE/MDG0030
- OPR/** ICAO designator or name of the aircraft operator, if different from the aircraft identification in Item 7.
- ORGN/** The originator's 8-letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the competent authority.
- PER/** Aircraft performance data, indicated by a single letter as specified in the Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS, Doc 8168), Volume I – Flight Procedures, if so prescribed by the competent authority.
- ALTN/** Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/above.
- RALT/** ICAO 4-letter indicator(s) for en-route alternate(s), as specified in Doc 7910, Location Indicators, or name(s) of en-route alternate aerodrome(s), if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/above.

**TALT/** ICAO 4-letter indicator(s) for take-off alternate, as specified in Doc 7910, Location Indicators, or name of take-off alternate aerodrome, if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/above.

**RIF/** The route details to the revised destination aerodrome, followed by the ICAO 4-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

Examples: RIF/DTA HEC KLAX

RIF/ESP G94 CLA YPPH

**RVR/** minimum runway visual range requirement for the flight expressed in 3 figures.

**RFP/** indication of the number of the replacement flight plans submitted in format "Q" followed by 1 figure indicating the iteration of replacement.

Examples: RFP/Q2.

**RMK/** Any other plain-language remarks when required by the competent authority or deemed necessary.

|                                           |
|-------------------------------------------|
| <b>ITEM 19: SUPPLEMENTARY INFORMATION</b> |
|-------------------------------------------|

|           |
|-----------|
| Endurance |
|-----------|

After **E/** *INSERT* a 4-figure group giving the fuel endurance in hours and minutes.

|                  |
|------------------|
| Persons on board |
|------------------|

After **P/** *INSERT* the total number of persons (passengers and crew) on board, when required by the competent authority. *INSERT* TBN (to be notified) if the total number of persons is not known at the time of filing.

|                                  |
|----------------------------------|
| Emergency and survival equipment |
|----------------------------------|

**R/(RADIO)** *CROSS OUT* U if UHF on frequency 243,0 MHz is not available.

*CROSS OUT* V if VHF on frequency 121,5 MHz is not available.

*CROSS OUT* E if emergency locator transmitter (ELT) is not available.

**S/(SURVIVAL EQUIPMENT)** *CROSS OUT* all indicators if survival equipment is not carried.

*CROSS OUT* P if polar survival equipment is not carried.

*CROSS OUT* D if desert survival equipment is not carried.

*CROSS OUT* M if maritime survival equipment is not carried.

**CROSS OUT J** if jungle survival equipment is not carried.

**J/(JACKETS)** **CROSS OUT** all indicators if life jackets are not carried.

**CROSS OUT L** if life jackets are not equipped with lights.

**CROSS OUT F** if life jackets are not equipped with fluorescein.

**CROSS OUT U** or **V** or both as in R/above to indicate radio capability of jackets, if any.

**D/(DINGHIES)** **CROSS OUT** indicators D and C if no dinghies are carried; or

**(NUMBER)** **INSERT** number of dinghies carried; and

**(CAPACITY)** – **INSERT** total capacity, in persons, of all dinghies carried; and

**(COVER)** – **CROSS OUT** indicator C if dinghies are not covered; and

**(COLOUR)** – **INSERT** colour of dinghies if carried.

**A/(AIRCRAFT COLOUR AND MARKINGS)** **INSERT** colour of aircraft and significant markings.

**AND MARKINGS)**

**N/(REMARKS)** **CROSS OUT** indicator N if no remarks, or **INDICATE** any other survival equipment carried and any other remarks regarding survival equipment.

**C/(PILOT)** **INSERT** name of pilot-in-command.

## 2.3 Filed by

**INSERT** the name of the unit, the agency or the person filing the flight plan.

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## SUPPLEMENT TO THE ANNEX

*Regulation (EU) 2024/404*

[Deleted.]