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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

(Text with EEA relevance)

(OJ L 281, 13.10.2012, p. 1)

Amended by:

		Official Journal		
		No	page	date
►**M1**	Commission Regulation (EU) 2015/340 of 20 February 2015	L 63	1	6.3.2015
►**M2**	Commission Implementing Regulation (EU) 2016/1185 of 20 July 2016	L 196	3	21.7.2016
►**M3**	Commission Implementing Regulation (EU) 2017/835 of 12 May 2017	L 124	35	17.5.2017
►**M4**	Commission Implementing Regulation (EU) 2020/469 of 14 February 2020	L 104	1	3.4.2020
►**M5**	amended by Commission Implementing Regulation (EU) 2020/1177 of 7 August 2020	L 259	12	10.8.2020
►**M6**	Commission Implementing Regulation (EU) 2020/886 of 26 June 2020	L 205	14	29.6.2020

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COMMISSION IMPLEMENTING REGULATION (EU) No 923/2012

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(Text with EEA relevance)

Article 1

Subject matter and scope

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.

▼M2

3. This Regulation shall also apply to the competent authorities of the Member States, air navigation service providers, 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.

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Article 2

Definitions

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;

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3. ‘advisory airspace’ means an airspace of defined dimensions, or designated route, within which air traffic advisory service is available;

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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;

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;

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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;

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 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;

▼M2

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);

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26. ‘air traffic’ means all aircraft in flight or operating on the manoeuvring area of an aerodrome;

▼M2

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;

▼M2

28. ‘air traffic control (ATC) clearance’ means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;

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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);

▼M2

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;

▼B

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;

▼M2

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;

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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;

▼B

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;

▼M2

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);

▼B

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 regardless whether or not a control zone exists;

▼B

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;

70. ‘estimated off-block time’ means the estimated time at which the aircraft will commence movement associated with departure;

▼M2

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;

▼B

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;

▼B

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, 1 013,2 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. ‘helicopter’ means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more powerdriven rotors on substantially vertical axes;

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);

87. ‘IFR’ means the symbol used to designate the instrument flight rules;

▼B

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;

▼M2

89a. ‘instrument approach operation’ 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;

▼B

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:

▼M2

(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;

▼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;

▼M2

94a. ‘minimum fuel’ means a term used to describe a situation in which an aircraft's fuel supply has reached a state where the flight is committed to land at a specific aerodrome and no additional delay can be accepted;

▼B

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;

▼M2

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);

▼B

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);

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;

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;

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;

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;

▼M1

104. ‘psychoactive substance’ means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas caffeine and tobacco are excluded;

▼B

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;

▼M2

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;

▼B

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;

▼M2

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;

▼B

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 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 aircraft operations;

120. ‘signal area’ means an area on an aerodrome used for the display of ground signals;

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.

▼B

(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;

▼M2

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;

▼B

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;

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;

▼B

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.

Article 3

Compliance

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 14 of the Regulation (EC) No 216/2008 and the safeguards contained in Article 13 of Regulation (EC) No 549/2004.

Article 4

Exemptions for special operations

▼M2

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:

▼B

(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;

▼B

(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.

▼M2

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 ([1]).

▼B

Article 5

Differences

1. Further to the entry into force of this Regulation and at the latest by the date of its applicability, the Member States shall:

(a) formally notify ICAO that all previously notified differences with respect to ICAO Standards and recommended practices that are covered by this Regulation are withdrawn, with the exception of those relating to essential security and defence policy interests of the Member States in accordance with Article 13 of Regulation (EC) No 549/2004;

(b) notify ICAO of the commonly agreed differences contained in the supplement to the Annex to this Regulation.

2. In accordance with Annex 15 to the Chicago Convention, each Member State shall publish through its Aeronautical Information Publication the commonly agreed differences notified to ICAO in accordance with point (b) of paragraph 1 of this Article, as well as any other provisions necessitated by local air defence and security considerations in accordance with point (a) of paragraph 1 of this Article.

Article 6

Monitoring of amendments

1. 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.

([1]) 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).

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2. The provisions of Article 5 of this Regulation relating to the withdrawal and notification of differences and publication in the Aeronautical Information Publication and Article 7 regarding amendments to the Annex shall apply as appropriate.

Article 7

Amendments to the Annex

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

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.

Article 9

Safety requirements

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.

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

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;

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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 (*).

(*) OJ L 281, 13.10.2012, p. 1.’.

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.’.

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’;

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(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

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.

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

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ANNEX

RULES OF THE AIR

SECTION 1

Flight over the high seas

SERA.1001 General

(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

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SERA.2001 Subject

Without prejudice to SERA.1001 above, this annex addresses, in accordance with Article 1, in particular 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.

This annex addresses also the actions of the Competent Authorities of the Member States, Air Navigation Service Providers (ANSP), aerodrome operators and the relevant ground personnel engaged in aircraft operations.

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SERA.2005 Compliance with the rules of the air

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.

SERA.2010 Responsibilities

(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.

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(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 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

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

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

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

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).

SERA.3110 Cruising levels

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

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.

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SERA.3120 Towing

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

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

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

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

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.

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SERA.3145 Prohibited areas and restricted areas

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

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.

SERA.3205 Proximity

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

SERA.3210 Right-of-way

(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 ILS/MLS sensitive area(s) when Category II or Category III precision instrument operations are in progress;

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(B) subject to the provisions in (iii) the minimum separation between 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, taxiing or being towed;

(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.

SERA.3215 Lights to be displayed by aircraft

(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

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(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.

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(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

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(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.

SERA.3220 Simulated instrument flights

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.

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

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.

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SERA.3230 Water operations

(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.

CHAPTER 3

Signals

SERA.3301 General

(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.

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CHAPTER 4

Time

SERA.3401 General

(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.

SECTION 4

Flight plans

SERA.4001 Submission of a flight plan

(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 submitted, before departure, to an air traffic services reporting office or, during flight, transmitted to the appropriate air traffic services unit or air-ground control radio station, unless arrangements have been made for submission of repetitive flight plans.

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(d) ►M2 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 at least 60 minutes before departure, or, if submitted during flight, at a time which will ensure its receipt by the appropriate ATS unit at least 10 minutes before the aircraft is estimated to reach: ◄

(1) the intended point of entry into a control area or advisory area; or

(2) the point of crossing an airway or advisory route.

SERA.4005 Contents of a flight plan

(a) A flight plan shall comprise information regarding such of the following items as are considered relevant by the competent authority:

(1) Aircraft identification

(2) Flight rules and type of flight

(3) Number and type(s) of aircraft and wake turbulence category

(4) Equipment

(5) Departure aerodrome or operating site

(6) Estimated off-block 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 endurance

(13) Total number of persons on board

(14) Emergency and survival equipment

(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.

SERA.4010 Completion of a flight plan

(a) A flight plan shall contain information, as applicable, on relevant items up to and including ‘Alternate aerodrome(s) or operating site(s)’ regarding the whole route or the portion thereof for which the flight plan is submitted.

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(b) It 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.4015 Changes to a flight plan

(a) Subject to the provisions of SERA.8020 (b) all changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported as soon as practicable 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) Information submitted prior to departure regarding fuel 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.

SERA.4020 Closing a flight plan

(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.

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SECTION 5

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

SERA.5001 VMC visibility and distance from cloud minima

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 300 m (1 000 ft) vertically
Below 3 050 m (10 000 ft) AMSL and above 900 m (3 000 ft) AMSL, or above 300 m (1 000 ft) above terrain, whichever is the higher	A (**) B C D E F G	5 km	1 500 m horizontally 300 m (1 000 ft) vertically
At and below 900 m (3 000 ft) AMSL, or 300 m (1 000 ft) above terrain, whichever is the higher	A (**) B C D E	5 km	1 500 m horizontally 300 m (1 000 ft) vertically
	F G	5 km (***)	Clear of cloud and with 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;

►M2 (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. ◄

SERA.5005 Visual flight rules

(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 special VFR 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.

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(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);

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(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

———————

(v) for mountainous area, higher VMC visibility and distance from cloud minima may be prescribed by the competent authority;

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(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.

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(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.

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(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 (3 000 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.

SERA.5010 Special VFR in control zones

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

(a) such special VFR flights may be conducted during day only, unless otherwise permitted by the competent authority;

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(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 zone or aerodrome traffic circuit 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).

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

(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.

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(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.

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

(a) IFR flights shall comply with the provisions of Section 8 when operated in controlled airspace.

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(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

(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.

SECTION 6

Airspace classification

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SERA.6001 Classification of airspaces

(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

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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.

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SERA.6005 Requirements for communications and SSR transponder

(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

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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)

(1) 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) Airspaces designated as radio mandatory zone and/or transponder mandatory zone shall be duly promulgated in the aeronautical information publications.

SECTION 7

Air traffic services

SERA.7001 General — Objectives of the air traffic services

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.

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

(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.

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

(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.

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(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.

SECTION 8

Air traffic control service

SERA.8001 Application

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

(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 clearances and 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 when a reduction in separation minima in the vicinity of aerodromes can be applied, separation by an air traffic control unit shall be obtained by at least one of the following:

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(1) vertical separation, obtained by assigning different levels selected from the table of cruising levels in Appendix 3 to the Annex to this Regulation, except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or air traffic control 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 this level;

(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.

SERA.8010 Separation minima

(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.

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SERA.8012 Application of wake turbulence separation

(a) Wake turbulence separation minima shall be applied to aircraft in the approach and departure phases of flight under 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; or

(2) both aircraft are using the same runway or parallel runways separated by less than 760 m (2 500 ft); or

(3) an aircraft is crossing behind another aircraft at the same altitude or less than 300 m (1 000 ft) below it.

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SERA.8015 Air traffic control clearances

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(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.

▼M2

(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.

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(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) The pilot-in-command of an aircraft shall inform ATC if an air traffic control clearance is not satisfactory. In such cases, ATC will issue an amended clearance, if practicable.

(3) 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.

(4) *Potential reclearance in flight.* If, prior to departure, it is anticipated that, depending on fuel 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.

(5) 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.

(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;

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(3) route of flight, …

(i) the route of flight shall be detailed in each clearance when deemed necessary; and

(ii) the phrase ‘cleared via flight planned route’ shall not be used when granting a re-clearance;

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(4) level(s) 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 approach or departure manoeuvres, communications and the time of expiry of the clearance.

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(e) Read-back of clearances 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.

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(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) A QNH altimeter setting shall be included in the descent clearance when first cleared at an altitude below the transition level, in approach clearances or clearances to enter the traffic circuit, and in taxi clearances for departing aircraft except when it is known that the aircraft has already received the information in a directed transmission.

(4) A QFE altimeter setting shall be provided to aircraft on request or on a regular basis in accordance with local arrangements.

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(5) When an aircraft which has been given clearance to land is completing its approach using atmospheric pressure at aerodrome elevation (QFE), the vertical position of the 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.

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(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.

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(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.

SERA.8020 Adherence to flight plan

(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.

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(3) Deviation from the requirements in point (1) shall be notified to the appropriate ATS unit.

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(b) *Inadvertent changes.* 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) Variation in true airspeed: if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.

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(3) Change in time estimate: if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 2 minutes from that notified to ATS or such other period of time as prescribed by the competent authority, a revised estimated time shall be notified as soon as possible to the appropriate ATS unit.

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(4) 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.

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(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.

(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 to leave the airspace within which an ATC clearance is required; or

(2) if no clearance in accordance with a) 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

(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.

SERA.8025 Position reports

(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.

▼M2

(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.

(3) The format of position reports shall be in accordance with Appendix 5, Point A.

▼B

SERA.8030 Termination of control

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

(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.

▼M2

(b) The Member States shall comply with the appropriate provisions on communication failures as have been adopted under the Chicago Convention. The Commission shall take the necessary measures for the transposition of those provisions into Union law so as to establish common European procedures on communication failures by 31 December 2017 at the latest.

▼B

SECTION 9

Flight information service

SERA.9001 Application

(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

(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;

and of any other information likely to affect safety.

▼B

(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.

(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.

SERA.9010 Automatic terminal information service (ATIS)

(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.

(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, any element of information that needs updating shall be transmitted to the aircraft without delay.

(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;

▼B

(8) significant runway surface conditions and, if appropriate, braking action;

(9) holding delay, if appropriate;

(10) transition level, if applicable;

(11) other essential operational information;

▼M2

(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 ([1]) 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;

▼B

(14) present weather ([1]);

(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 ([1]);

(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;

([1]) 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.

▼B

(8) significant runway surface conditions and, if appropriate, braking action;

(9) holding delay, if appropriate;

(10) transition level, if applicable;

(11) other essential operational information;

▼M2

(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 ([1]) 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;

▼B

(14) present weather ([1]);

(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 ([1]);

(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) significant surface conditions of runway(s) to be used for take-off and, if appropriate, braking action;

([1]) 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.

▼B

(8) departure delay, if appropriate;

(9) transition level, if applicable;

(10) other essential operational information;

▼M2

(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 ([1]) 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;

▼B

(13) present weather ([1]);

(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 ([1]);

(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.

SECTION 10

Alerting service

SERA.10001 Application

(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.

▼M2

(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.

([1]) 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.

▼B

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

(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

▼M2

SERA.11001 General

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(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.

SERA.11005 Unlawful interference

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(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 at a dedicated aerodrome 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.

▼M2

SERA.11010 Strayed or unidentified aircraft

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Strayed or unidentified aircraft

(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:

▼M2

(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

▼B

(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;

▼B

(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.

▼M2

SERA.11012 Minimum Fuel and Fuel Emergency

(a) When a pilot reports a state of minimum fuel, 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 renders declaring a situation of distress necessary, the pilot, in accordance with 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).

SERA.11013 Degraded aircraft performance

(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.

▼**M2**

(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.

▼M2

SERA.11014 ACAS resolution advisory (RA)

(a) ACAS II shall be used during flight, except as provided in the minimum equipment list specified in Commission Regulation (EU) No 965/2012 ([1]) 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

(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.

▼B

SERA.11015 Interception

(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]) 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).

▼B

(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. *Note 1* *Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.* *Note 2* *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.*	You have been intercepted. Follow me.	DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.
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.

▼B

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
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, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to 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 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 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 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. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
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:

▼B

Table S11-3

Phrases for use by INTERCEPTING aircraft			Phrases for use by INTERCEPTED aircraft		
Phrase	Pronunciation (1)	Meaning	Phrase	Pronunciation (1)	Meaning
CALL SIGN	KOL SA-IN	What is your call sign?	CALL SIGN (call sign) (2)	KOL SA-IN (call sign)	My call sign is (call sign)
FOLLOW	FOL-LO	Follow me	WILCO	VILL-KO	►**M2** Understood, will comply ◄
DESCEND	DEE-SEND	Descend for landing	►**M2** — ◄		
			CAN NOT	KANN NOTT	Unable to comply
YOU LAND	YOU LAAND	Land at this aerodrome	REPEAT	REE-PEET	Repeat your instruction
			AM LOST	AM LOSST	Position unknown
PROCEED	PRO-SEED	You may proceed			
			MAYDAY	MAYDAY	I am in distress
			HIJACK (3)	HI-JACK	I have been hijacked
			LAND (place name)	LAAND (place name)	I request to land at (place name)
			DESCEND	DEE-SEND	I require descent

(1) In the second column, syllables to be emphasised are underlined.
(2) 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.
(3) Circumstances may not always permit, nor make desirable, the use of the phrase 'HIJACK'.

(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.

▼B

(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.

SECTION 12

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

SERA.12001 Types of aircraft observations

(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

(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

▼M4

(9) the runway braking action encountered is not as good as reported.

▼B

(b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.

▼M2

(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.

▼B

SERA.12010 Other non-routine aircraft observations

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

(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

(a) ATS units shall transmit, as soon as practicable, special and non-routine air-reports to:

(1) other aircraft concerned;

▼M2

(2) the associated meteorological watch office (MWO) in accordance with point 3 of Appendix 5; and

▼B

(3) other ATS units concerned.

(b) Transmissions to aircraft shall be repeated at a frequency and continued for a period of time which shall be determined by the ATS unit concerned.

▼M2

SECTION 13

SSR Transponder

SERA.13001 Operation of an SSR transponder

(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.

SERA.13005 SSR transponder Mode A code setting

(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;

▼M2

(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.

SERA.13010 Pressure-altitude-derived information

(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 to the controller shall be effected at least once by each suitably equipped ATC unit on initial contact with the aircraft concerned or, if this is not feasible, as soon as possible thereafter.

SERA.13015 SSR transponder Mode S aircraft identification setting

(a) Aircraft equipped with Mode S having an aircraft identification feature shall transmit the aircraft identification as specified in Item 7 of the ICAO flight plan or, when no flight plan has been filed, the aircraft registration.

(b) Whenever it is observed on the situation display that the aircraft identification transmitted by a Mode S-equipped aircraft 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 identification feature, the discrepancy continues to exist, the controller 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

▼M2

(3) notify the next control position and any other unit concerned using Mode S for identification purposes that the aircraft identification transmitted by the aircraft is erroneous.

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

(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.

SECTION 14

Voice communication procedures

SERA.14001 General

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.

SERA.14005 Categories of messages

(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.

▼M2

(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

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

(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 50 000 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.

SERA.14020 Word spelling in radiotelephony

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	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE *or* SHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH

▼M2

Letter	Word	Approximate pronunciation (Latin alphabet representation)
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HO TELL
I	India	IN DEE AH
J	Juliett	JEW LEE ETT
K	Kilo	KEY LOH
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAH
P	Papa	PAH PAH
Q	Quebec	KEH BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR RAH
T	Tango	TANG GO
U	Uniform	YOU NEE FORM *or* OO NEE FORM
V	Victor	VIK TAH
W	Whiskey	WISS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANG KEY
Z	Zulu	ZOO 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

(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.

▼M2

SERA.14026 Significant points

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

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

SERA.14035 Transmission of numbers in radiotelephony

(a) Transmission of numbers

(1) All numbers used in the transmission of aircraft call sign, headings, runway, wind direction and speed 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.

▼M2

SERA.14040 Pronunciation of numbers

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

(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.’

▼**M2**

Phrase	Meaning
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 SERA.14070(c))
I SAY AGAIN	‘I repeat for clarity or emphasis.’
MAINTAIN	‘Continue in accordance with the condition(s) specified’ or in its literal sense.
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.’

▼M2

Phrase	Meaning
WILCO	*(Abbreviation for 'will comply')* '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.' (b) *As information:* 'Since communication is difficult, every word, or group of words, in this message will be sent twice.'

SERA.14050 Radiotelephony call signs for aircraft

(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.

SERA.14055 Radiotelephony procedures

(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.

▼M2

(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.

SERA.14060 Transfer of VHF communications

(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

(a) Unless otherwise prescribed by the ANSP responsible for the provision of services and approved by the competent authority, the initial call to an ATS unit after a change of air-ground voice communication channel shall contain the following elements:

(1) the designation of the ATS unit being called;

(2) call sign and, for aircraft in the heavy wake turbulence category, the word ‘Heavy’ or ‘Super’ if that aircraft has been so identified by the competent authority;

(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 and, for aircraft in the heavy wake turbulence category, the word ‘Heavy’ or ‘Super’ if that aircraft has been so identified by the competent authority;

▼M2

(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

(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

(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.

▼M2

(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.

SERA.14080 Communications watch/Hours of service

(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.

SERA.14085 Use of blind transmission

(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;

▼M2

(3) when provided with ATS, transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight.

SERA.14087 Use of relay communication technique

(a) When an ATS unit has been unable to establish contact with an aircraft after calls on the frequencies on which the aircraft is believed to be listening, it shall:

(1) request other ATS units to render assistance by calling the aircraft and relaying traffic, if necessary; and

(2) request aircraft on the route to attempt to establish communication with the aircraft and relay traffic, if necessary.

(b) The provisions of point (a) shall also be applied:

(1) at request of the ATS unit concerned;

(2) 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.

SERA.14090 Specific communication procedures

(a) Movement of vehicles

Phraseologies for the movement of vehicles, other than tow-tractors, 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 wake turbulence category

(1) For aircraft in the heavy wake turbulence category, the word ‘Heavy’ shall be included immediately after the aircraft call sign in the initial radiotelephony contact between such aircraft and ATS units.

(2) For specific aircraft in the heavy wake turbulence category, as identified by the competent authority, the word ‘Super’ shall be included immediately after the aircraft call sign in the initial radiotelephony contact between such aircraft and ATS units.

(d) Procedures related to weather deviation

When the pilot initiates communications with ATC, a rapid response may be obtained by stating ‘WEATHER DEVIATION REQUIRED’ to indicate that priority is desired on the frequency and for ATC response. When necessary, the pilot shall initiate communications using the urgency call ‘PAN PAN’ (preferably spoken three times).

▼M2

SERA.14095 Distress and urgency radiotelephony communication procedures

(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.

▼M2

(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.

▼M2

(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.

▼**M2**

(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.

▼B

Appendix 1

Signals

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.

▼M2

1.1.2. The telecommunication transmission procedures for the distress and urgency signals shall be in accordance with Section 14.

▼B

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

▼B

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*

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 (*)	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 (*)	Return to starting point on the aerodrome
Red pyrotechnic		Notwithstanding any previous instructions, do not land for the time being	

(*) Clearances to land and to taxi will be given in due course.

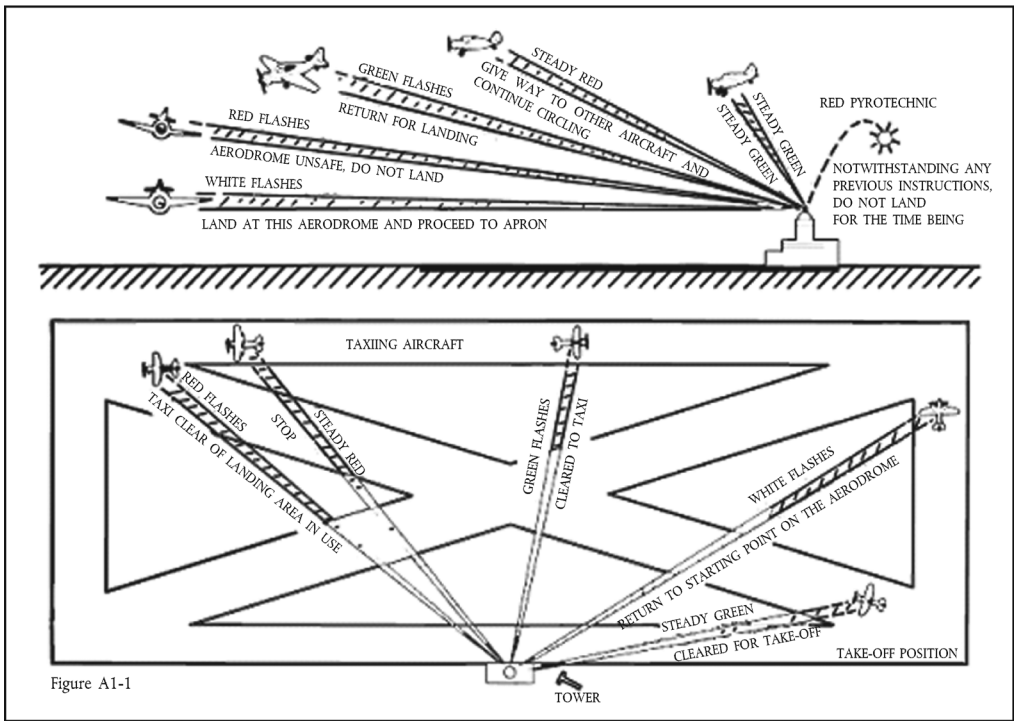


Figure A1-1

▼B

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.

3.2. **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.

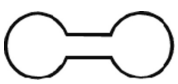


Figure A1-4

▼B

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.

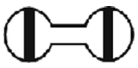


Figure A1-5

3.2.4. *Closed runways or taxiways*

▼M2

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.

▼B



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.

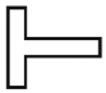


Figure A1-7

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.

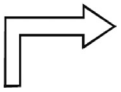


Figure A1-9

▼B

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.

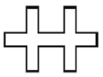


Figure A1-11

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:

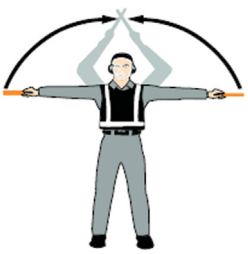
(a) for fixed-wing aircraft, on left side of aircraft, where best seen by the pilot; and

(b) for helicopters, where the signalman/marshaller can best be seen by the pilot.

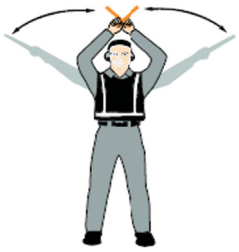
4.1.2. Prior to using the following signals, the signalman/marshaller shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with SERA.3301(a), might otherwise strike.

	1. **Wingwalker/guide** (*) Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body. (*) 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.
	2. **Identify gate** Raise fully extended arms straight above head with wands pointing up.

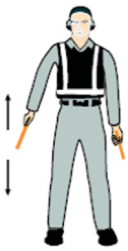
▼B

	3. **Proceed to next signalman/marshaller or as directed by tower/ground control** 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.
	4. **Straight ahead** Bend extended arms at elbows and move wands up and down from chest height to head.
	5(a) **Turn left (from pilot's point of view)** 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.
	5(b) **Turn right (from pilot's point of view)** 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.
	6(a) **Normal stop** Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.

▼B

	6(b) **Emergency stop** Abruptly extend arms and wands to top of head, crossing wands.
	7(a) **Set brakes** Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. **Do not** move until receipt of 'thumbs up' acknowledgement from flight crew.
	7(b) **Release brakes** Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. **Do not** move until receipt of 'thumbs up' acknowledgement from flight crew.
	8(a) **Chocks inserted** With arms and wands fully extended above head, move wands inward in a 'jabbing' motion until wands touch. **Ensure** acknowledgement is received from flight crew.
	8(b) **Chocks removed** With arms and wands fully extended above head, move wands outward in a 'jabbing' motion. **Do not** remove chocks until authorised by flight crew.

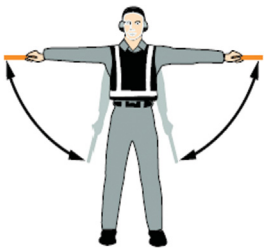
▼B

	9. **Start engine(s)** 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.
	10. **Cut engines** 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.
	11. **Slow down** Move extended arms downwards in a 'patting' gesture, moving wands up and down from waist to knees.
	12. **Slow down engine(s) on indicated side** With arms down and wands toward ground, wave either *right* or *left* wand up and down indicating engine(s) on *left* or *right* side respectively should be slowed down.
	13. **Move back** 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).

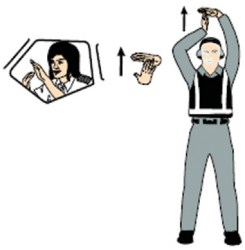
▼B

	14(a) **Turns while backing (for tail to starboard)** Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.
	14(b) **Turns while backing (for tail to port)** Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.
	15. **Affirmative/all clear** (*) Raise right arm to head level with wand pointing up or display hand with 'thumbs up'; left arm remains at side by knee. (*) This signal is also used as a technical/servicing communication signal.
	16. **Hover** (*) Fully extend arms and wands at a 90-degree angle to sides. (*) For use to hovering helicopters.
	17. **Move upwards** (*) 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. (*) For use to hovering helicopters.

▼B

	18. **Move downwards** (*) 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. (*) For use to hovering helicopters.
	19(a) **Move horizontally left (from pilot's point of view)** (*) Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion. (*) For use to hovering helicopters.
	19(b) **Move horizontally right (from pilot's point of view)** (*) Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion. (*) For use to hovering helicopters.
	20. **Land** (*) Cross arms with wands downwards and in front of body. (*) For use to hovering helicopters.
	21. **Hold position/stand by** Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.

▼B

	22. **Dispatch aircraft** 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.
	23. **Do not touch controls (technical/servicing communication signal)** Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.
	24. **Connect ground power (technical/servicing communication signal)** 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.
	25. **Disconnect power (technical/servicing communication signal)** 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. **Do not** disconnect power until authorised by flight crew. At night, illuminated wands can also be used to form the ‘T’ above head.
	26. **Negative (technical/servicing communication signal)** 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.

▼B

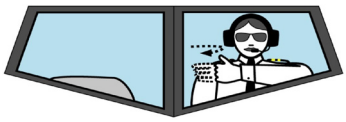
	27. **Establish communication via interphone (technical/servicing communication signal)** Extend both arms at 90 degrees from body and move hands to cup both ears.
	28. **Open/close stairs (technical/servicing communication signal)** (*) With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.

(*) This signal is intended mainly for aircraft with the set of integral stairs at the front.

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.

▼M2

	(a) Brakes engaged: raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.
	(b) Brakes released: raise arm, with fist clenched, horizontally in front of face, then extend fingers.
	(c) Insert chocks: arms extended, palms outwards, move hands inwards to cross in front of face.
	(d) Remove chocks: hands crossed in front of face, palms outwards, move arms outwards.

▼M2

	(e) Ready to start engine(s): Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

▼B

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/marshallers 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.

	1. **Recommend evacuation** Evacuation recommended based on aircraft rescue and fire-fighting and Incident Commander's assessment of external situation. 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. Night — same with wands.
	2. **Recommend stop** Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress. Arms in front of head — Crossed at wrists Night — same with wands.
	3. **Emergency contained** No outside evidence of dangerous conditions or 'all-clear.' 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. Night — same with wands.

▼B

	4. **Fire** Move right-hand in a ‘fanning’ motion from shoulder to knee, while at the same time pointing with left hand to area of fire. Night — same with wands.

▼B

Appendix 2

Unmanned free balloons

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.

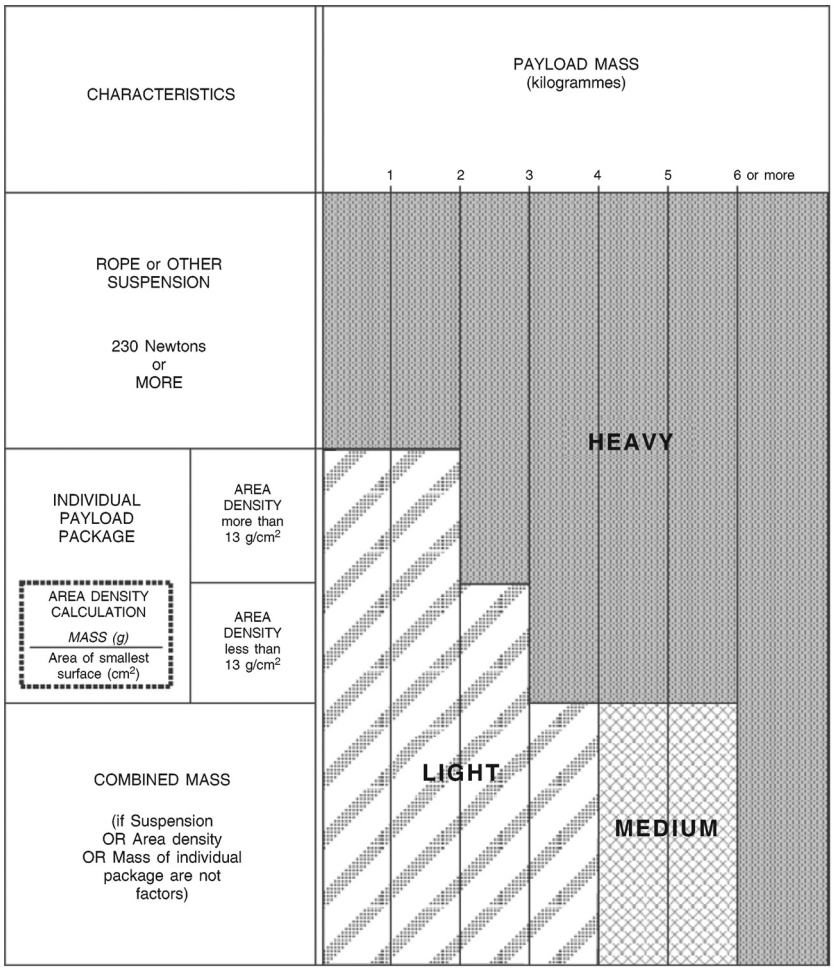
2.4. An unmanned free balloon shall be operated in accordance with conditions specified by the State of Registry and the State(s) expected to be overflown.

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).

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Figure AP2-1



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;

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(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;

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(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).

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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.

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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 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.

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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.

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Appendix 3

Table of cruising levels

1.1. The cruising levels to be observed are as follows:

TRACK (*)											
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	1 000	300	—	—	—	020	2 000	600	—	—	—
030	3 000	900	035	3 500	1 050	040	4 000	1 200	045	4 500	1 350
050	5 000	1 500	055	5 500	1 700	060	6 000	1 850	065	6 500	2 000
070	7 000	2 150	075	7 500	2 300	080	8 000	2 450	085	8 500	2 600
090	9 000	2 750	095	9 500	2 900	100	10 000	3 050	105	10 500	3 200
110	11 000	3 350	115	11 500	3 500	120	12 000	3 650	125	12 500	3 800
130	13 000	3 950	135	13 500	4 100	140	14 000	4 250	145	14 500	4 400
150	15 000	4 550	155	15 500	4 700	160	16 000	4 900	165	16 500	5 050
170	17 000	5 200	175	17 500	5 350	180	18 000	5 500	185	18 500	5 650
190	19 000	5 800	195	19 500	5 950	200	20 000	6 100	205	20 500	6 250
210	21 000	6 400	215	21 500	6 550	220	22 000	6 700	225	22 500	6 850
230	23 000	7 000	235	23 500	7 150	240	24 000	7 300	245	24 500	7 450
250	25 000	7 600	255	25 500	7 750	260	26 000	7 900	265	26 500	8 100
270	27 000	8 250	275	27 500	8 400	280	28 000	8 550	285	28 500	8 700
290	29 000	8 850				300	30 000	9 150			
310	31 000	9 450				320	32 000	9 750			
330	33 000	10 050				340	34 000	10 350			
350	35 000	10 650				360	36 000	10 950			
370	37 000	11 300				380	38 000	11 600			
390	39 000	11 900				400	40 000	12 200			
410	41 000	12 500				430	43 000	13 100			
450	45 000	13 700				470	47 000	14 350			
490	49 000	14 950				510	51 000	15 550			
etc.	etc.	etc. etc.				etc.	etc.	etc.			

(*) 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.

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Appendix 4

ATS airspace classes — services provided and flight requirements

(SERA.6001 and SERA.5025(b) refers)

Class	Type of flight	Separation provided	Service provided	Speed limitation (*)	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 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; ►**M2** (2) Air traffic control service, VFR/VFR traffic information (and traffic avoidance advice on request) ◄	250 kts IAS below 3 050 m (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 3 050 m (10 000 ft) AMSL	Yes	Yes	Yes

▼B

Class	Type of flight	Separation provided	Service provided	Speed limitation (*)	Radio communication capability requirement	Continuous two-way air-ground voice communication required	Subject to an ATC clearance
	VFR	Nil	►M2 Air traffic control service, IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request) ◄	250 kts IAS below 3 050 m (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 3 050 m (10 000 ft) AMSL	Yes	Yes	Yes
	VFR	Nil	Traffic information as far as practical	250 kts IAS below 3 050 m (10 000 ft) AMSL	No (**)	No (**)	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 (***)	No (***)	No
	VFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	No (**)	No (**)	No
G	IFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	Yes (**)	No (**)	No
	VFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	No (**)	No (**)	No

(*) 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.

(**) Pilots shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel in RMZ.

(***) 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.

▼M2

Appendix 5

Technical specifications related to aircraft observations and reports by voice communications

A. **REPORTING INSTRUCTIONS**

MODEL AIREP SPECIAL

	ITEM	PARAMETER	TRANSMIT IN TELEPHONY as appropriate
	—	Message- type designator — 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)* METRES or FEET CLIMBING TO FLIGHT LEVEL *(number)* or *(number)* METRES or FEET DESCENDING TO FLIGHT LEVEL *(number)* or *(number)* METRES 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 — Severe turbulence — Moderate icing — Severe icing — Severe mountain wave — Thunderstorms without hail — Thunderstorms with hail — Heavy dust/sandstorm — Volcanic ash cloud — Pre-eruption volcanic activity or volcanic eruption	 TURBULENCE MODERATE TURBULENCE SEVERE ICING MODERATE ICING SEVERE MOUTAINWAVE SEVERE THUNDERSTORMS THUNDERSTORMS WITH HAIL DUSTSTORM or SANDSTORM HEAVY VOLCANIC ASH CLOUD PRE-ERUPTION VOLCANIC ACTIVITY or VOLCANIC ERUPTION

▼M2

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 radio-telephony 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.

▼M2

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 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', and

— 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.

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— 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 ‘PRE-ERUPTION 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.

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.

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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 2

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 duststorm or sandstorm as 'HVY SS',

— 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.

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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 ATS unit as soon as practicable unless the pilot-in-command is aware that the appropriate ATS 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.

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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 (position or bearing, estimated level of ash cloud and distance from aircraft)					
6) AIR TEMPERATURE			7) SPOT WIND		
8) SUPPLEMENTARY INFORMATION SO_2 DETECTED yes ☐ no ☐ Ash encountered yes ☐ no ☐			Other _____ (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	☐ (a) Wispy		☐ (b) Moderate dense		☐ (c) Very dense
10) COLOUR OF ASH CLOUD	☐ (a) White		☐ (b) Light grey		☐ (c) Dark grey
	☐ (d) black		☐ (e) other _____		
11) ERUPTION	☐ (a) continuous		☐ (b) intermittent		☐ (c) not visible
12) POSITION OF ACTIVITY	☐ (a) Summit		☐ (b) side		☐ (c) Single
	☐ (d) Multiple		☐ (e) Not observed		
13) OTHER OBSERVED FEATURES OF ERUPTION	☐ (a) Lightning		☐ (b) Glow		☐ (c) Large rocks
	☐ (d) Ash fallout		☐ (e) Mushroom cloud		☐ (f) All
14) EFFECT ON AIRCRAFT	☐ (a) Communication		☐ (b) Navigation systems		☐ (c) Engines
	☐ (d) Pitot static		☐ (e) Windscreen		☐ (f) Windows
15) OTHER EFFECTS	☐ (a) Turbulence		☐ (b) St. Elmo's Fire		☐ (c) Other fumes
16) OTHER INFORMATION (Any information considered useful.)					

▼B

Supplement to the ANNEX

List of commonly agreed differences to be notified to ICAO in accordance with Article 5 of this Regulation:

▼M2

ICAO Annex 2

Differences between this Regulation and the International Standards contained in Annex 2 to the Convention on International Civil Aviation, as amended

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Difference A2-01	
ICAO Annex 2 Chapter 3 3.2.2.	New Provision. Implementing Regulation (EU) No 923/2012, SERA.3210(b), specifies: '(b) *An aircraft that is aware that the manoeuvrability of another aircraft is impaired shall give way to that aircraft.*'
Difference A2-02	
ICAO Annex 2 Chapter 3 3.2.3.2(b)	Implementing Regulation (EU) No 923/2012, paragraph SERA.3215(b)(2), specifies (with the addition to ICAO Standard in Annex 2, 3.2.3.2(b) of the underlined text): '(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*;'
Difference A2-03	
ICAO Annex 2 Chapter 3 3.2.5(c) and (d)	Implementing Regulation (EU) No 923/2012, paragraph SERA.3225 differs from ICAO Standard in Annex 2, 3.2.5(c) and 3.2.5(d) in that it specifies that subparagraphs (c) and (d) do not apply to balloons: '(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.'
▼M2 **Difference A2-04**	
ICAO Annex 2 Chapter 3 3.3.1.2.	ICAO Annex 2, 3.3.1.2 is replaced with point SERA.4001(b) of Implementing Regulation (EU) No 923/2012. The differences between that ICAO Standard and that Union regulation are as follows: — With regards to VFR flights planned to operate across international borders, the Union regulation (point SERA.4001(b)(5)) differs from the ICAO Standard in Annex 2, 3.3.1.2(e) with the addition of the underlined text, as follows: *'any flight across international borders, unless otherwise prescribed by the States concerned.'*

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	— With regard to VFR and IFR flights planned to operate at night, the following requirement is added to point SERA.4001(b)(6) of that Union regulation: '(6) *any flight planned to operate at night, if leaving the vicinity of an aerodrome'*

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Difference A2-05	
ICAO Annex 2 Chapter 3 3.2.2.4.	New Provision. Implementing Regulation (EU) No 923/2012, paragraph SERA.3210(c)(3)(i) differs from ICAO Standard in Annex 2, 3.2.2.4 by specifying that: '(i) *Sailplanes overtaking. A sailplane overtaking another sailplane may alter its course to the right or to the left.*'

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Difference A2-07	
ICAO Annex 2 Chapter 4 4.6.	ICAO Annex 2, 4.6, is replaced with Implementing Regulation (EU) No 923/2012 SERA.5005, introducing the obstacle clearance criteria in (f), as follows: '(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.*'
Difference A2-08	
ICAO Annex 2 Chapter 3 3.8 and Appendix 2	The words 'in distress' of Chapter 3 Part 3.8, are not included in Union law, thus enlarging the scope of escort missions to any type of flight requesting such service. Furthermore the provisions contained in Appendix 2 Parts 1.1 to 1.3 inclusive as well as those found in Attachment A, are not contained in Union law.

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ICAO Annex 3

Differences between this Regulation and the International Standards contained in Annex 3 to the Convention on International Civil Aviation, as amended.

Difference A3-01	
ICAO Annex 3 Chapter 5	New provision. Point SERA.12005 of Implementing Regulation (EU) No 923/2012 specifies: (b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.

ICAO Annex 10

Differences between this Regulation and the International Standards contained in Annex 10 to the Convention on International Civil Aviation, as amended.

Difference A10-01	
ICAO Annex 10 Volume II Chapter 5 5.2.1.4.1	ICAO Annex 10, Volume II, Chapter 5.2.1.4.1 is transposed in point SERA.14035 of Implementing Regulation (EU) No 923/2012 with some differences. The differences between that ICAO Standard and that Union Regulation are as follows: SERA.14035 Transmission of numbers in radiotelephony (a) Transmission of numbers (1) All numbers used in the transmission of aircraft call sign, headings, runway, wind direction and speed 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'.

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	(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 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.
Difference A10-02	
ICAO Annex 10 Volume II Chapter 5 5.2.1.7.3.2.3	ICAO Annex 10, Volume II, Chapter 5.2.1.7.3.2.3 is transposed in point SERA.14055 of Implementing Regulation (EU) No 923/2012 with a difference. The difference between that ICAO Standard and that EU Regulation is as follows: SERA.14055 Radiotelephony procedures (b) (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. <u>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.</u>

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ICAO Annex 11

Differences between this Regulation and the International Standards contained in Annex 11 to the Convention on International Civil Aviation, as amended.

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Difference A11-01	
ICAO Annex 11 Chapter 2 Paragraph 2.25.5	Implementing Regulation (EU) No 923/2012 SERA.3401(d)(1) differs from ICAO Annex 11, standard 2.25.5 by stating that *'Time checks shall be given* <u>*at least*</u> *to the nearest* ~~*half*~~ *minute'*
Difference A11-02	
ICAO Annex 11 Chapter 2 Paragraph 2.6.1	Exemption possibility. Implementing Regulation (EU) No 923/2012 paragraph SERA.6001 allows aircraft to exceed the 250 knot speed limit where approved by the competent authority for aircraft types, which for technical or safety reasons, cannot maintain this speed
Difference A11-03	
ICAO Annex 11 Chapter 3	New provision. Implementing Regulation (EU) No 923/2012, paragraph SERA.8005(b), specifies: (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 <u>and agreed by the pilot of the other aircraft</u> 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 <u>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.</u>
Difference A11-04	
ICAO Annex 11 Chapter 3	Implementing Regulation (EU) No 923/2012, paragraph SERA.8015, specifies (with the addition to ICAO Standard in Annex 11, 3.7.3.1 of the underlined text): (e) Read-back of clearances and safety-related information

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	(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.
Difference A11-05	
ICAO Annex 11 Chapter 3	Implementing Regulation (EU) No 923/2012, paragraph SERA.8015(e)(2), specifies (with the addition to ICAO Standard in Annex 11, 3.7.3.1.1 of the underlined text): (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.

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Difference A11-06	
ICAO Annex 11 Chapter 3	New provision. Point SERA.5010 of Implementing Regulation (EU) No 923/2012 specifies: **SERA.5010 Special VFR in control zones** Special VFR flights may be authorised to operate within a control zone, subject to an ATC clearance. Except when permitted by the competent authority for helicopters in special cases such as, but not limited to, medical flights, search and rescue operations and fire-fighting, the following additional conditions shall be applied: (a) such flights may be conducted during day only, unless otherwise permitted by the competent authority; ~~(a)~~ (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

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	(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 zone or aerodrome traffic circuit when the reported meteorological conditions at that aerodrome are below the following minima: ~~(b) by ATC:~~ ~~(1) during day only, unless otherwise permitted by the~~ competent ~~authority;~~ ~~(2)~~ (1) the ground visibility is not less than 1 500 m or, for helicopters, not less than 800 m; (2) the ceiling is less than 180 m (600 ft).

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Difference A03-07	
ICAO Annex 3 Chapter 5	New provision. Implementing Regulation (EU) No 923/2012, paragraph SERA.12005, specifies: (b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.