



**EUROPEAN COMMISSION**  
DIRECTORATE-GENERAL FOR MOBILITY AND TRANSPORT  
DIRECTORATE E - Air Transport  
**E.2 - Single sky & modernisation of air traffic control**

SINGLE SKY COMMITTEE WORKSHOP

9 November 2010

**WORKING PAPER**

**Standardised European Rules of Air - SERA**

- Submitted by the European Commission -

During SSC37 Member States were requested to submit their comments to the draft text on Standardised European Rules of Air (SERA). These comments have been assessed by the Commission and led to a number of changes to the draft text. This working paper presents the proposed changes, whilst including also the changes proposed already for SSC37.

The working paper should be read together with the Comments-Response Document, which has also been submitted. The two documents will form the basis of discussion in the SSC SERA workshop on Tuesday 9 November. Please note that contrary to some earlier information, the workshop will take place in the Centre Albert Borschette.

Draft

**COMMISSION REGULATION (EU) No (XXX/2010) of (...)**

**laying down the common rules of the air and  
operational provisions regarding services and procedures in air navigation and  
amending Regulations (EC) No 2096/2005, (EC) No 1794/2006, (EC) No 730/2006, (EC)  
No 1033/2006 and (EU) No 255/2010**

**(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

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

Having regard to Regulation (EC) No 549/2004 of the European Parliament and the Council of 10 March 2004 laying down the framework for the creation of the single European sky, as amended by Regulation No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system (hereafter the framework Regulation)<sup>1</sup>, and in particular Articles 5 and 8 thereof,

Having regard to Regulation (EC) No 551/2004 of the European Parliament and the Council of 10 March 2004 on the organization and use of the airspace in the single European sky, as amended by Regulation No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system, (hereafter the airspace Regulation)<sup>2</sup>, and in particular Article 4 thereof,

Having regard to (EC) No 216/2008 of the European Parliament and the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, as amended by Regulation (EC) No 1108/2009 of the European Parliament and the Council of 21 October 2009 (hereafter the EASA Basic Regulation), and in particular Article 8b and annex Vb thereof.

Whereas:

- (1) Pursuant to the airspace Regulation and the EASA Basic Regulation, the Commission is required to adopt implementing rules in order to adopt appropriate provisions on rules of the air based upon ICAO Standards and recommended practices, and to

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<sup>1</sup> OJ reference to 549 and 1070

<sup>2</sup> OJ reference to 551 and 1070

harmonise the application of the ICAO airspace classification, with the aim to ensure the seamless provision of safe and efficient air traffic services within the single European sky.

- (2) Eurocontrol has been mandated in accordance with Article 8(1) of the framework Regulation to assist the Commission in the development of implementing rules which adopt appropriate provisions on rules of the air based upon ICAO Standards and recommended practices, and harmonise the application of the ICAO airspace classification;
- (3) In accordance with Article 1(3) of the framework Regulation, the single European sky shall ~~be without prejudice to the rights and duties of~~ assist the Member States in fulfilling their obligations under the 1944 Chicago Convention on International Civil Aviation (hereafter the Chicago Convention) by providing for common interpretation and implementation;
- ~~(4) Pursuant to the framework Regulation, the single European sky regulations should assist Member States in fulfilling their obligations under the Chicago Convention, by providing a basis for a common interpretation and uniform implementation of its provisions, and by ensuring that these provisions are duly taken into account in the rules drawn up for its implementation.~~
- (5) The objective of the airspace Regulation is to support the concept of a more integrated operating airspace within the context of the common transport policy, and to establish common procedures for design, planning and management while ensuring the efficient and safe performance of air traffic management. This objective is particularly relevant for the rapid implementation of functional airspace blocks in the single European sky.
- (6) The outcome of the work undertaken by the joint group created by the European Commission, Eurocontrol and ICAO, which charted the national differences filed by Member States relating to ICAO Standards dealing with rules of the air and related provisions for air navigation services, supports the need for standardisation of common rules and differences with respect to the single European sky.
- (7) In order to ensure safe, efficient and expeditious international air traffic and to support the establishment of functional airspace blocks, all participants in the single European sky should adhere to a common set of rules. Furthermore a key enabler of safe cross-border operations is the creation of a transparent regulatory system, where the actors can be provided a legal certainty and predictability. To this end, standardised rules of the air and related operational provisions regarding services and procedures in air navigation should be established, and be supplemented, where appropriate, with guidance material and/or acceptable means of compliance.
- (8) To achieve those objectives, only commonly agreed European differences should be notified to ICAO by the Member States on areas, which are covered by Union law. Those differences should be established and monitored through a permanent process.
- (9) Member States that have adopted additional provisions complementing an ICAO standard, should, if they are still considered necessary and provided such additional provisions do not constitute a difference under the Chicago Convention or against existing Union law, continue to apply such provisions until they are addressed by appropriate Union provisions.

- (10) The application of this Regulation should be without prejudice to the Member States' obligations over the High Seas, in accordance with Article 12 of the Chicago Convention, and in particular with Annex 2 to the Chicago Convention, as well as the obligations of Member States and the Union under the United Nations Convention on the Law of the Sea and the obligations of Member States under the Convention on the International Regulations for Preventing Collisions at Sea, 1972.
- (11) In accordance with Article 1(2) of the framework Regulation, the regulatory framework for the creation of the single European sky does not cover military operations and training.
- (12) The existing process for amending ICAO Standards and recommended practices within the framework of the Chicago Convention is not addressed by this Regulation.
- (13) The extension of the competence of EASA to include air traffic management safety requires consistency between the development of implementing rules under the airspace regulation and under the EASA Basic Regulation.
- (14) In order to ensure consistency between the transposition of ICAO annex 2 provisions contained in this proposal and the future provisions stemming from other annexes, which will be included in the next stages of work, the initial provisions should be revisited where necessary. ~~safe, efficient and expeditious international air traffic and to support the establishment of functional airspace blocks, all participants in the single European sky should adhere to a common set of rules. To this end, standardised rules of the air and related operational provisions regarding services and procedures in air navigation should be established, and be supplemented, where appropriate, with guidance material and/or acceptable means of compliance.~~
- (15) Where necessary, other Union legislation should be updated to refer to this Regulation.

HAS ADOPTED THIS REGULATION:

*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 the airspace Regulation.
2. This Regulation shall apply in particular to 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.

*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.
2. '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).
3. 'advisory airspace' means an airspace of defined dimensions, or designated route, within which air traffic advisory service is available.
4. 'advisory route' means a designated route along which air traffic advisory service is available.
5. 'aerobatic flight' means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed, not necessary for normal flight or for instruction for licenses or ratings other than aerobatic rating.
6. 'aerodrome' means a defined area (including any buildings, installations and equipment) on land or water or on a fixed, fixed off-shore or floating structure intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft
7. 'aerodrome control service' means air traffic control service for aerodrome traffic.
8. 'aerodrome control tower' means a unit established to provide air traffic control service to aerodrome traffic.
9. 'aerodrome traffic' means all traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome. An aircraft operating in the vicinity of an aerodrome includes but is not limited to aircraft entering or leaving an aerodrome traffic circuit.
10. 'aerodrome traffic circuit' means the specified path to be flown by aircraft operating in the vicinity of an aerodrome.
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 specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.
13. 'Aeronautical Information Publication (AIP)' means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

14. 'aeronautical mobile service' means a mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.
15. 'aeronautical station' means a land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.
16. 'aeroplane' means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.
17. 'airborne collision avoidance system (ACAS)' means an aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.
18. 'aircraft' means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.
19. 'aircraft address' means a unique combination of 24 bits available for assignment to an aircraft for the purpose of air-ground communications, navigation and surveillance.
20. 'air-ground communication' means two-way communication between aircraft and stations or locations on the surface of the earth.
21. '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.
22. 'air-taxiing' means movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).
23. 'air traffic' means all aircraft in flight or operating on the manoeuvring area of an aerodrome.
24. '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 IFR flight plans.
25. 'air traffic control clearance' means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit.
26. '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.
27. 'air traffic control unit' means a generic term meaning variously, area control centre, approach control unit or aerodrome control tower.

28. '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).
29. 'air traffic services 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.
30. 'air traffic services reporting office' means a unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.
31. 'air traffic services 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.
32. 'airway' means a control area or portion thereof established in the form of a corridor.
33. 'alerting service' means a service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.
34. '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. Alternate aerodromes include the following:
  - a. 'take-off alternate' means an alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.
  - b. 'en-route alternate' means an aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en route.
  - c. 'ETOPS en-route alternate' means a suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shutdown or other abnormal or emergency condition while en route in an ETOPS operation.
  - d. 'destination alternate' means an alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.
35. 'altitude' means the vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).
36. 'approach control service' means air traffic control service for arriving or departing controlled flights as well as other flights operating within an approach control unit's area of responsibility.
37. '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 and other flights operating within its area of responsibility.
38. 'apron' means a defined area, ~~on a land aerodrome,~~ intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

39. 'area control centre (ACC)' means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.
40. 'area control service' means air traffic control service for controlled flights in control areas.
41. 'area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.
42. 'ATS route' means a specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services.
43. '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.
44. '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.
45. '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.
46. '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.
47. 'code (SSR)' means the number assigned to a particular multiple pulse reply signal transmitted by a transponder in Mode A or Mode C.
48. 'competent authority' means the authority of a Member State competent to ensure compliance with the requirements of this Regulation or any entity to which that competence has been delegated.
49. 'control area' means a controlled airspace extending upwards from a specified limit above the earth.
50. 'controlled aerodrome' means an aerodrome at which air traffic control service is provided to aerodrome traffic regardless whether or not a control zone exists.
51. 'controlled airspace' means an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.
52. 'controlled flight' means any flight which is subject to an air traffic control clearance.
53. 'controller-pilot data link communications (CPDLC)' mean a means of communication between controller and pilot, using data link for ATC communications.
54. 'control zone' means a controlled airspace extending upwards from the surface of the earth to a specified upper limit.



55. 'cruise climb' means an aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.
56. 'cruising level' means a level maintained during a significant portion of a flight.
57. 'current flight plan (CPL)' means the flight plan, including changes, if any, brought about by subsequent clearances.
58. 'danger area' means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.
59. 'data link communications' mean a form of communication intended for the exchange of messages via a data link.
60. 'datum' means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities.
61. 'estimated elapsed time' means the estimated time required to proceed from one significant point to another.
62. 'estimated off-block time' means the estimated time at which the aircraft will commence movement associated with departure.
63. 'estimated time of arrival' 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 VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.
64. '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.
65. '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.
66. 'flight crew member' means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.
67. 'flight information centre' means a unit established to provide flight information service and alerting service.
68. 'flight information region' means an airspace of defined dimensions within which flight information service and alerting service are provided.
69. 'flight information service' means a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.
70. '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.
71. 'flight plan' means specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.
72. 'flight visibility' means the visibility forward from the cockpit of an aircraft in flight.

- ~~73.~~ ~~‘glider’ means a non-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.~~
734. ‘ground visibility’ means the visibility at an aerodrome, as reported by an accredited observer or by automatic systems.
745. ‘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).
756. ‘height’ means the vertical distance of a level, a point or an object considered as a point, measured from a specified datum.
767. ‘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.
778. ‘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).
789. ‘IFR’ means the symbol used to designate the instrument flight rules.
- ~~798~~  
~~9.~~ ‘IFR flight’ means a flight conducted in accordance with the instrument flight rules.
804. ‘IMC’ means the symbol used to designate instrument meteorological conditions.
812. ‘instrument approach procedure (IAP)’ means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:
- a. *Non-precision approach (NPA) procedure* means an instrument approach procedure which utilizes lateral guidance but does not utilize vertical guidance.
- b. *Approach procedure with vertical guidance (APV)* means an instrument procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.
- c. *Precision approach (PA) procedure* means an instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.
823. ‘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.
834. ‘landing area’ means that part of a movement area intended for the landing or take-off of aircraft.
845. ‘level’ means a generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.
856. ‘manoeuvring area’ means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

867. '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.
878. '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).
889. '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.
890. '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.
- 90 'operating site' means a site selected by the operator or pilot-in-command for landing, take-off and/or hoist operations.
91. '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.
92. 'pressure-altitude' means an atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere, as defined in ICAO Annex 8, Part 1.
93. '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.
94. '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.
95. 'psychoactive substances' mean alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.
96. 'radar' means a radio detection device which provides information on range, azimuth and/or elevation of objects.
97. 'radiotelephony' means a form of radiocommunication primarily intended for the exchange of information in the form of speech.
98. '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.

99. 'reporting point' means a specified geographical location in relation to which the position of an aircraft can be reported.
100. '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.
101. 'route segment' means a route or portion of route usually flown without an intermediate stop.
102. 'runway' means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.
103. 'runway-holding position' means a designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorised by the aerodrome control tower.
104. 'safety-sensitive personnel' mean persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers.

105 '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.

106 5. 'secondary surveillance radar (SSR)' means a surveillance radar system which uses transmitters/receivers (interrogators) and transponders.

107 6. 'signal area' means an area on an aerodrome used for the display of ground signals.

108 7. '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.

109 8. 'special VFR flight' means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

110 9. 'surveillance radar' means radar equipment used to determine the position of an aircraft in range and azimuth.

111 0. 'taxiing' means movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

112 4. '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 taxiway* means a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

b) *Apron taxiway* means a portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

c) *Rapid exit taxiway* means a taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

113 2 'territory' means the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of a State.

114 3 'threshold' means the beginning of that portion of the runway usable for landing.

115 4 '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.

116 5 '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).

117 6 'transition altitude' means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

118 7 'unmanned free balloon' means a non-power-driven, unmanned, lighter-than-air aircraft in free flight.

119 8 'VFR' means the symbol used to designate the visual flight rules.

120 19 'VFR flight' means a flight conducted in accordance with the visual flight rules.

121 0 'visibility' means visibility for aeronautical purposes is the greater of:

a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized 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.

122 4 'visual meteorological conditions' mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

123 2 'VMC' means the symbol used to designate visual meteorological conditions.

### *Article 3*

#### **Compliance**

4The 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 EASA Regulation.

~~2. In the event of a safety problem, of unforeseen urgent operational circumstances or of operational needs of a limited duration, the flexibility provisions of Article 14 of the EASA Regulation shall apply.~~

*Article 4*

**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;
  - 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 the commonly agreed differences notified to ICAO in accordance with Article 4(1) b) above through its Aeronautical Information Publication.

*Article 5*

**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.
2. The provisions of Article 4 of this Regulation relating to the withdrawal and notification of differences and publication in the Aeronautical Information Publication and Article 6 regarding amendments to the Annex shall apply as appropriate.

*Article 6*

**Amendments to the Annex**

1. The Annex shall be amended in accordance with Article 5(34) of the framework Regulation.
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 to those ICAO annexes and documents themselves.

*Article 7*

**Transitional 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.

*Article 8*

**Safety requirements**

1. Further to the entry into force of this Regulation and without prejudice to Article 6, 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 9*

**Amendments to Regulations (EC) No 2096/2005, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No255/2010**

1. Regulation (EC) No 2096/2005, as amended by Regulation (EC) No 668/2008, is amended as follows:
  - a) the reference in Annex II, point 4, to “Annex 2 on rules of the air (10th edition, July 2005)” shall be replaced by a reference to “Regulation (EU) NNN/YYYY”.
2. 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.”
3. Regulation (EC) No 730/2006 is amended as follows:
  - a) Article 2(3) and (4) shall be replaced by the following:  
“3. ‘IFR’ means the symbol used to designate instrument flight rules”;  
“4. ‘VFR’ means the symbol used to designate visual flight rules
4. Regulation (EC) No 1033/2006 is amended as follows:
  - a) Article 2(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:  
“3.1 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. Chapter 3, Paragraph 3.3 (Flight plans) of Regulation XX/XXXX.”
5. 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.”
6. Regulation (EU) No255/2010 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”



*Article 10*

**Entry into force**

1. This Regulation shall enter into force on the 20<sup>th</sup> day following its publication in the Official Journal of the European Union.
2. It shall apply from [*4th December 2012*].

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

- End -

## ANNEX

### **Part A – Rules of the Air**

#### **Chapter 1 — Flight over the High Seas**

- 1.1 For flight over the high seas, the rules specified in Annex 2 to the Chicago Convention shall apply without exception. With respect to controlled flight over portions of the high seas which are adjacent to the continent, Annex 11 and relevant Union law shall remain applicable for safety purposes. This shall be without prejudice to the operations of State Aircraft under Article 3 of Chicago convention.
- 1.2 For those parts of the high seas where a Member State has accepted, pursuant to a regional air navigation agreement, the responsibility of providing air traffic services, the Member State shall designate the ATS provider for providing those services.

#### **Chapter 2 — Applicability and Compliance**

##### **2.1 Applicability**

- 2.1.1 Without prejudice to 1.1 above, this Regulation shall apply to 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.

##### **2.2 Compliance with the Rules of the Air**

- 2.2.1 The operation of an aircraft either in flight, ~~or~~ on the movement area of an aerodrome or at an operating site shall be in compliance with the general rules and, in addition, when in flight, either with:
- a) the visual flight rules; or
  - b) the instrument flight rules.

##### **2.3 Responsibilities**

- 2.3.1 Responsibility of the Pilot-in-command
- 2.3.1.1 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.

2.3.2 Pre-flight Action

- 2.3.2.1 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.

**2.4 Authority of Pilot-in-command of an Aircraft**

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

**2.5 Problematic Use of Psychoactive Substances**

- 2.5.1 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.

**Chapter 3 - General Rules**

**3.1 Protection of Persons and Property**

3.1.1 Negligent or Reckless Operation of Aircraft

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

3.1.2 Minimum Heights

- 3.1.2.1 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 4.6 and minimum levels for IFR flights shall be those specified in 5.1.2.

3.1.3 Cruising Levels

- 3.1.3.1 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.

3.1.4 Dropping or Spraying

3.1.4.1 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.

3.1.5 Towing

3.1.5.1 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.

3.1.6 Parachute Descents

3.1.6.1 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.

3.1.7 Aerobatic Flight

3.1.7.1 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.

3.1.8 Formation Flights

3.1.8.1 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) a maximum lateral and longitudinal distance between each aircraft and the flight leader in accordance with the Chicago Convention. The Commission shall propose harmonised values for this by 31 December 2011 at latest, 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.

### 3.1.9 Unmanned Free Balloons

3.1.9.1 An unmanned free balloon shall be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 3.

### 3.1.10 Prohibited Areas and Restricted Areas

3.1.10.1 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.

## 3.2 Avoidance of Collisions

3.2.1 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.

### 3.2.2 Proximity

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

### 3.2.3 Right-of-way

3.2.3.1 The aircraft that has the right-of-way shall maintain its heading and speed.

3.2.3.1.1 An aircraft, which is flying with the surface in sight and following a road, railway, river or any other line of landmarks, shall keep them on its left side, unless flying in controlled airspace in accordance with instructions given by the appropriate Air Traffic Control Unit.

3.2.3.2 An aircraft that is aware that the manoeuvrability of another aircraft is impaired shall give way to that aircraft.

3.2.3.3 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.

3.2.3.3.1 *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.

3.2.3.3.2 *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:

- a) power-driven heavier-than-air aircraft shall give way to airships, glidersailplanes and balloons;
- b) airships shall give way to glidersailplanes and balloons;
- c) glidersailplanes shall give way to balloons;
- d) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.

3.2.3.3.3 *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.

3.2.3.3.3.1 *GliderSailplanes overtaking.* A glidersailplane overtaking another glidersailplane may alter its course to the right or to the left.

3.2.3.3.4 *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.

3.2.3.3.4.1 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 glidersailplanes.

3.2.3.3.4.2 *Emergency landing.* An aircraft that is aware that another is compelled to land shall give way to that aircraft.

3.2.3.3.5 *Taking off.* An aircraft taxiing on the manoeuvring area of an aerodrome shall give way to aircraft taking off or about to take off.

3.2.3.4 *Surface movement of aircraft*

3.2.3.4.1 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:

- a) 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;
- b) when two aircraft are on a converging course, the one which has the other on its right shall give way;
- c) 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.

3.2.3.4.2 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. On an AFIS aerodrome an aircraft may taxi without stopping once it has received the required

taxi information from the AFIS-unit and the safety of other traffic is not compromised.

3.2.3.4.3 An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further when the lights are switched off.

3.2.3.4.4 Vehicles on the manoeuvring area shall give way to aircraft taxiing or being towed.

### 3.2.4 Lights to Be Displayed by Aircraft

3.2.4.1 Except as provided by 3.2.4.3, at night all aircraft in flight shall display:

- a) anti-collision lights intended to attract attention to the aircraft; and
- b) 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.
- c) in the case of balloons, position lights.

3.2.4.1.1 Except as provided by 3.2.4.3, at night:

- a) 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;
- b) 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;
- c) all aircraft taxiing or being towed on the movement area of an aerodrome shall display lights intended to attract attention to the aircraft; and
- d) all aircraft on the movement area of an aerodrome whose engines are running shall display lights which indicate that fact.

3.2.4.2 Except as provided by 3.2.4.3, all aircraft in flight and fitted with anti-collision lights to meet the requirement of 3.2.4.1 a) shall display such lights also during day.

3.2.4.2.1 Except as provided by 3.2.4.3, all aircraft:

- a) taxiing or being towed on the movement area of an aerodrome and fitted with anti-collision lights, to meet the requirement of 3.2.4.1.1 c); or
- b) on the movement area of an aerodrome and fitted with lights to meet the requirement of 3.2.4.1.1 d)

shall display such lights also during day.

3.2.4.3 A pilot shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of 3.2.4.1, 3.2.4.1.1 3.2.4.2 and 3.2.4.2.1 if they do or are likely to:

- a) adversely affect the satisfactory performance of duties; or
- b) subject an outside observer to harmful dazzle.

### 3.2.5 Simulated Instrument Flights

3.2.5.1 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.

### 3.2.6 Operation on and in the Vicinity of an Aerodrome

3.2.6.1 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. On an AFIS aerodrome turns can be made to the right only after the AFIS-unit has been informed of the intention and when the pilot-in-command has determined that safety of other traffic is not compromised;
- 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.

### 3.2.7 Water Operations

3.2.7.1 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.

3.2.7.1.1 *Converging.* An aircraft which has another aircraft or a vessel on its right shall give way so as to keep well clear.

3.2.7.1.2 *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.

3.2.7.1.3 *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.



- 3.2.7.1.4 *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.
- 3.2.7.2 *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.

### 3.3 Flight Plans

#### 3.3.1 Submission of a Flight Plan

3.3.1.1 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.

3.3.1.2 A flight plan shall be submitted prior to operating:

- a) any IFR flight (see also 4.10) except for flights performed exclusively in classes G and F airspaces, in cases where the provision of alerting service can be ensured by means of a continuous two-way radio contact with the relevant Air Traffic Services Unit throughout the flight;
- b) any VFR flight or portion thereof:
  - i) to be provided with air traffic control service;
  - ii) planned to operate 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;
  - iii) planned to operate 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;
  - iv) planned to operate across international borders except between States, which participate in the Schengen agreement or; unless otherwise prescribed by the States concerned;
  - v) planned to operate at night, in accordance with 4.3 a).

3.3.1.3 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.

3.3.1.4 A flight plan for any flight referred in paragraph 3.3.1.2 b) iv) 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 sixty minutes before departure, or, if submitted during flight, at a time which will ensure its receipt by the appropriate air traffic services unit at least ten minutes before the aircraft is estimated to reach:

- a) the intended point of entry into a control area or advisory area; or
- b) the point of crossing an airway or advisory route.

#### 3.3.2 Contents of a Flight Plan

- 3.3.2.1 A flight plan shall comprise information regarding such of the following items as are considered relevant by the competent authority:
- Aircraft identification
  - Flight rules and type of flight
  - Number and type(s) of aircraft and wake turbulence category
  - Equipment
  - Departure aerodrome
  - Estimated off-block time
  - Cruising speed(s)
  - Cruising level(s)
  - Route to be followed
  - Destination aerodrome and total estimated elapsed time
  - Alternate aerodrome(s)
  - Fuel endurance
  - Total number of persons on board
  - Emergency and survival equipment
  - Other information.
- 3.3.2.1.1 For flight plans submitted during flight, the departure aerodrome 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.
- 3.3.3 Completion of a Flight Plan
- 3.3.3.1 A flight plan shall contain information, as applicable, on relevant items up to and including “Alternate aerodrome(s)” regarding the whole route or the portion thereof for which the flight plan is submitted.
- 3.3.3.2 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.
- 3.3.4 Changes to a Flight Plan
- 3.3.4.1 Subject to the provisions of 3.6.2.2, 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.
- 3.3.4.1.1 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.

### 3.3.5 Closing a Flight Plan

3.3.5.1 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.

3.3.5.1.1 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.

3.3.5.2 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.

3.3.5.3 When no air traffic services unit exists at the arrival aerodrome, 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.

3.3.5.4 When communication facilities at the arrival aerodrome 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.

3.3.5.5 Arrival reports made by aircraft shall contain the following elements of information:

- a) aircraft identification;
- b) departure aerodrome;
- c) destination aerodrome (only in the case of a diversionary landing);
- d) arrival aerodrome;
- e) time of arrival.

## 3.4 Signals

3.4.1 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.

3.4.2 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.

3.4.3 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.

- 3.4.4 Only persons trained, qualified and approved as required by the relevant Union or national legislation ~~by the competent authority~~ shall carry out the functions of a signalman/marshaller.
- 3.4.5 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.
- 3.4.6 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.

**3.5 Time**

- 3.5.1 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.
- 3.5.2 A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary.
- 3.5.3 Wherever time is utilized in the application of data link communications, it shall be accurate to within 1 second of UTC.

**3.6 Air Traffic Control Service**

3.6.1 Air Traffic Control Clearances

- 3.6.1.1 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.
- 3.6.1.1.1 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.
- 3.6.1.2 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.
- 3.6.1.3 *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.
- 3.6.1.4 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.

3.6.2 Adherence to Flight Plan

- 3.6.2.1 Except as provided for in 3.6.2.2 and 3.6.2.4, 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.

3.6.2.1.1 Unless otherwise authorised by the competent authority, or directed by the appropriate air traffic control unit, controlled flights shall, in so far as practicable:

- a) when on an established ATS route, operate along the defined centre line of that route; or
- b) when on any other route, operate directly between the navigation facilities and/or points defining that route.

3.6.2.1.2 Unless otherwise authorised by the competent authority, or directed by the appropriate air traffic control unit, an aircraft operating along an ATS route segment defined by reference to very high frequency omnidirectional radio ranges shall change over for its primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the changeover point, where established.

3.6.2.1.3 Deviation from the requirements in 3.6.2.1.1 shall be notified to the appropriate air traffic services unit.

3.6.2.2 *Inadvertent changes.* In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:

- a) 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.
- b) 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.
- c) 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 3 minutes from that notified to air traffic services, or such other period of time as is prescribed by the competent authority or on the basis of air navigation regional agreements, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.

3.6.2.2.1 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.

3.6.2.3 *Intended changes.* Requests for flight plan changes shall include information as indicated hereunder:

- a) 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.
- b) Change of route:
  - i) *Destination unchanged:* aircraft identification; flight rules; description of new route of flight including related flight plan data beginning with the

position from which requested change of route is to commence; revised time estimates; any other pertinent information.

- ii) *Destination changed*: aircraft identification; flight rules; description of revised route of flight to revised destination aerodrome including related flight plan data, beginning with the position from which requested change of route is to commence; revised time estimates; alternate aerodrome(s); any other pertinent information.

3.6.2.4 *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:

- a) 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
- b) 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
- c) if operated within a control zone, request authorisation to operate as a special VFR flight; or
- d) request clearance to operate in accordance with the instrument flight rules.

### 3.6.3 Position Reports

3.6.3.1 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.

3.6.3.1.1 Controlled flights providing position information to the appropriate air traffic services unit via data link communications shall only provide voice position reports when requested.

### 3.6.4 Termination of Control

3.6.4.1 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.

### 3.6.5 Communications

3.6.5.1 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 competent authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

3.6.5.1.1 The requirement for an aircraft to maintain an air-ground voice communication watch shall remain in effect when CPDLC has been established.

- 3.6.5.2 The Member States shall comply with the appropriate provisions on communication failures as have been adopted under the Chicago Convention. The Commission shall propose common European procedures by 31 December 2011 at latest, for implementation of the said ICAO provisions in Union law.

### **3.7 Unlawful Interference**

- 3.7.1 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 minimize conflict with other aircraft.
- 3.7.2 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.

### **3.8 Interception**

- 3.8.1 Except for intercept and escort service provided on request to an aircraft in distress, 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.
- 3.8.2 To achieve the uniformity in regulations which is necessary for the safety of navigation of civil aircraft, Member State regulations and administrative directives shall ensure the following:
- a) interception of civil aircraft shall be undertaken only as a last resort;
  - b) an interception shall be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or congested areas, or instruct it to effect a landing at a designated aerodrome;
  - c) practice interception of civil aircraft shall not be undertaken, unless it has been previously agreed with the pilot-in-command of the aircraft to be intercepted and ATC has been informed that the interception is to take place;
  - d) navigational guidance and related information shall be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and
  - e) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing shall be suitable for the safe landing of the aircraft type concerned.
- 3.8.3 Member States shall publish a standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft. Such method shall be designed to avoid any hazard for the intercepted aircraft.
- 3.8.4 Member States shall ensure that provision is made for the use of secondary surveillance radar or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.



- 3.8.5 The pilot-in-command of a civil aircraft, when intercepted, shall:
- a) immediately follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Appendix 1;
  - b) notify, if possible, the appropriate air traffic services unit;
  - c) 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;
  - d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.
  - e) 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.
- 3.8.6 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.
- 3.8.7 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.
- 3.8.8 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 3-1 and transmitting each phrase twice:

Table 3-1

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

1. In the second column, syllables to be emphasized 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".*

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### 3.9 VMC Visibility and Distance from Cloud Minima

3.9.1 VMC visibility and distance from cloud minima are contained in Table 3-2.

Table 3-2\*

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.

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

a) flight visibilities reduced to not less than 1 500 m are permitted for flights operating at speeds of 140 kts IAS or less to give adequate opportunity to observe other traffic or any obstacles in time to avoid collision;

b) flight visibilities reduced to not less than 3 000 m are permitted for flights operating at speeds of 170 kts IAS or less to give adequate opportunity to observe other traffic or any obstacles in time to avoid collision;

c) HELICOPTERS are 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. Lower flight visibilities may be permitted by the competent authority for special cases, such as medical flights, search and rescue operations and fire-fighting.

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. Lower flight visibilities may be permitted for special cases, such as medical flights, search and rescue operations and fire-fighting.

\*\*\* 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.

## Chapter 4 – Visual Flight Rules

- 4.1 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 3-2.
- 4.2 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:
- a) ~~when~~ the ceiling is less than 450 m (1 500 ft); or
  - b) ~~when~~ the ground visibility is less than 5 km. For fixed wing aircraft minimum ground visibility shall be 1.5 km during the day. For helicopters minimum ground visibility shall be 800 m during day when flown at speeds not exceeding those prescribed in table 3-2.
- 4.3 When so prescribed by the competent authority, VFR flights at night may be permitted under the following conditions:
- a) if leaving the vicinity of an aerodrome, a flight plan shall be submitted;
  - b) flights shall establish and maintain two-way radio communication on the appropriate ATS communication channel, when available;
  - c) the VMC visibility and distance from cloud minima as specified in Table 3-2 shall apply except that:
    - i) the ceiling shall not be less than 450 m (1 500 ft);
    - ii) except as specified in 4.3 d), the reduced flight visibility provisions specified in Table 3-2 a) and b) shall not apply;
    - iii) in airspace classes B, C, D, E, F and G, at and below 900 m (3000 ft) above MSL or 300 m (1000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface;
    - iv) for helicopters in airspace classes F and G, flight visibility shall not be less than 3 km, provided that the pilot maintains continuous sight of the surface and if manoeuvred at a speed that will give adequate opportunity to observe other traffic or obstacles in time to avoid collision; and
    - v) for mountainous terrain, higher VMC visibility and distance from cloud minima may be prescribed.
  - d) ceiling, visibility and distance from cloud minima lower than those specified in 4.3 c) above may be permitted for helicopters in special cases, such as medical flights, search and rescue operations and fire-fighting.
  - e) 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 overflowed, 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.

4.4 Unless authorised by the competent authority, VFR flights shall not be operated:

- a) above FL 195;
- b) at transonic and supersonic speeds.

4.5 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.

4.6 Except when necessary for take-off or landing, or except by permission from the competent authority, a VFR flight shall not be flown:

- a) 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;
- b) elsewhere than as specified in 4.6 a), 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 except when gliding, ballooning or training and testing for forced landings.

4.7 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 2.

4.8 VFR flights shall comply with the provisions of 3.6:

- a) when operated within Classes B, C and D airspace;
- b) when forming part of aerodrome traffic at controlled aerodromes; or
- c) when operated as special VFR flights.

4.9 A VFR flight operating within or into areas or along routes designated by the competent authority, in accordance with 3.3.1.2 b)ii) or b)iii), 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.

4.10 An aircraft operated in accordance with the visual flight rules which wishes to change to compliance with the instrument flight rules shall:

- a) if a flight plan was submitted, communicate the necessary changes to be

effected to its current flight plan; or

- b) as required by 3.3.1.2, 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.

## **Chapter 5 - Instrument Flight Rules**

### **5.1 Rules Applicable to All IFR Flights**

#### 5.1.1 Aircraft Equipment

- 5.1.1.1 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.

#### 5.1.2 Minimum Levels

- 5.1.2.1 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 overflowed, or, where no such minimum flight altitude has been established:
  - a) 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;
  - b) elsewhere than as specified in a), 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.

#### 5.1.3 Change from IFR Flight to VFR Flight

- 5.1.3.1 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.
- 5.1.3.2 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.

### **5.2 Rules Applicable to IFR Flights within Controlled Airspace**

- 5.2.1 IFR flights shall comply with the provisions of 3.6 when operated in controlled airspace.
- 5.2.2 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 2, 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.

### **5.3 Rules Applicable to IFR Flights Outside Controlled Airspace**

#### 5.3.1 Cruising Levels

5.3.1.1 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 2, except when otherwise specified by the competent authority for flight at or below 900 m (3 000 ft) above mean sea level.

#### 5.3.2 Communications

5.3.2.1 An IFR flight operating outside controlled airspace 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.

#### 5.3.3 Position Reports

5.3.3.1 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 3.6.3 for controlled flights.

## **APPENDIX 1 OF PART A – RULES OF THE AIR**

### **SIGNALS**

#### **1. DISTRESS AND URGENCY SIGNALS**

##### **1.1 General**

1.1.1 Notwithstanding the provisions in 1.2 and 1.3 below, an aircraft in distress shall use any means at its disposal to attract attention, make known its position and obtain help.

1.1.2 The telecommunication transmission procedures for the distress and urgency signals shall be in accordance with ICAO Annex 10, Volume II.

##### **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. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION**

**2.1 Signals Initiated by Intercepting Aircraft and Responses by Intercepted Aircraft**

**Table AP 1 - 1**

<i>Series</i>	<i>INTERCEPTING Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTED Aircraft Responds</i>	<i>Meaning</i>
1	<p>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.</p> <p><i>Note 1.— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</i></p> <p><i>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.</i></p>	<p>You have been intercepted. Follow me.</p>	<p>DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.</p>	<p>Understood, will comply.</p>
2	<p>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.</p>	<p>You may proceed.</p>	<p>DAY or NIGHT — Rocking the aircraft.</p>	<p>Understood, will comply.</p>
3	<p>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.</p>	<p>Land at this aerodrome.</p>	<p>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.</p>	<p>Understood, will comply.</p>

**2.2 Signals Initiated by Intercepted Aircraft and Responses by Intercepting Aircraft**

**Table AP 1 - 2**

<i>Series</i>	<i>INTERCEPTED Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTING Aircraft Responds</i>	<i>Meaning</i>
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.

**3. VISUAL SIGNALS USED TO WARN AN UNAUTHORISED AIRCRAFT FLYING IN OR ABOUT TO ENTER A RESTRICTED, PROHIBITED OR DANGER AREA**

3.1 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.

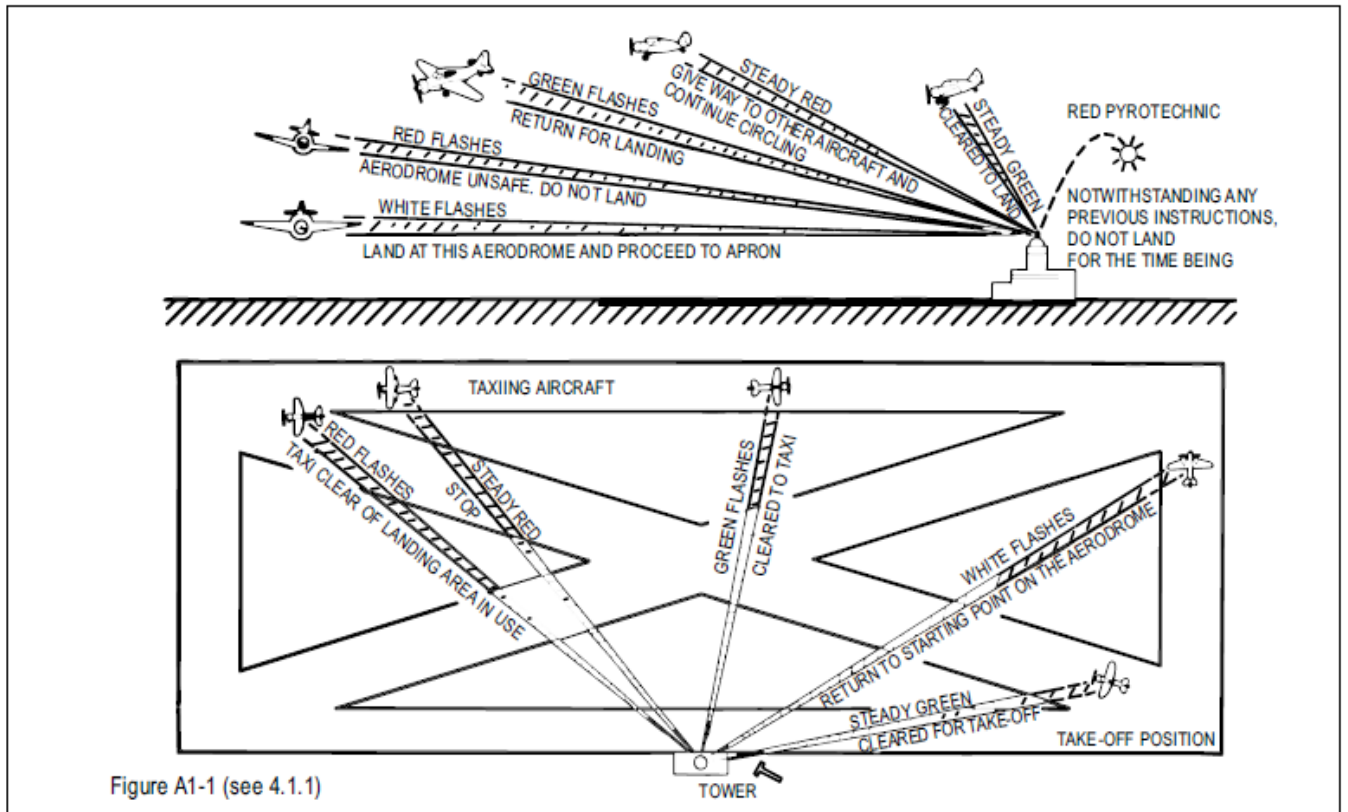
4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and Pyrotechnic Signals

4.1.1 Instructions

Table AP 1 - 3

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
Red pyrotechnic	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
		Notwithstanding any previous instructions, do not land for the time being	
* Clearances to land and to taxi will be given in due course.			



4.1.2 Acknowledgement by an aircraft

a) *When in flight, except for the base and final legs of the approach:*

- 1) during the hours of daylight:
  - by rocking the aircraft's wings;
- 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.

**4.2 Visual Ground Signals**

4.2.1 Prohibition of Landing

4.2.1.1 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

4.2.2 Need for Special Precautions while Approaching or Landing

4.2.2.1 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

4.2.3 Use of Runways and Taxiways

4.2.3.1 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

4.2.3.2 The same horizontal white dumb-bell as in 4.2.3.1 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

4.2.4 Closed Runways or Taxiways

4.2.4.1 Crosses of a single contrasting colour, yellow or white (Figure A1-6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

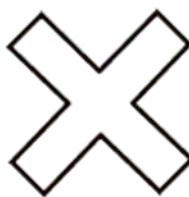


Figure A1-6

4.2.5 Directions for Landing or Take-off

- 4.2.5.1 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.

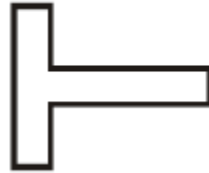


Figure A1-7

- 4.2.5.2 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

4.2.6 Right-hand Traffic

- 4.2.6.1 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.

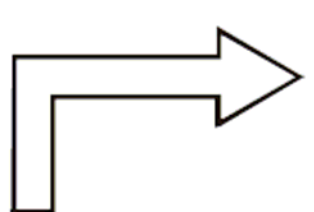


Figure A1-9

4.2.7 Air Traffic Services Reporting Office

4.2.7.1 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

4.2.8 ~~Glider~~Sailplane Flights in Operation

4.2.8.1 A double white cross displayed horizontally (Figure A1-11) in the signal area indicates that the aerodrome is being used by ~~gliders~~sailplanes and that ~~glider~~sailplane flights are being performed.

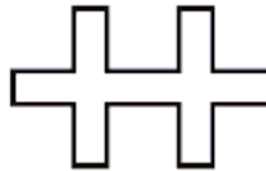


Figure A1-11


**5. MARSHALLING SIGNALS**

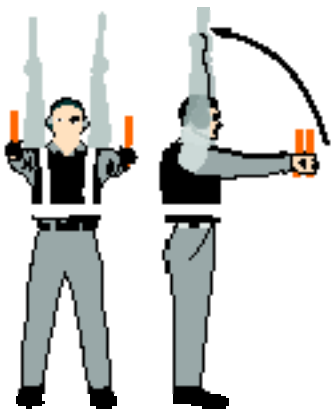
**5.1 From a Signalman/Marshaller to an Aircraft**

5.1.1 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.

5.1.2 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 3.4.1, might otherwise strike.

	<p style="text-align: center;"><b>*1. Wingwalker/guide</b></p> <p>Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.</p> <p><i>* 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.</i></p>
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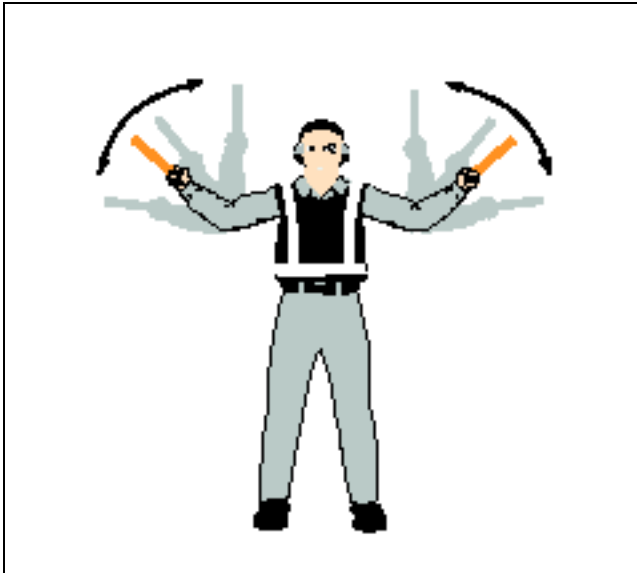
	<p style="text-align: center;"><b>2. Identify gate</b></p> <p>Raise fully extended arms straight above head with wands pointing up.</p>
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**3. Proceed to next signalman/marshaller  
or as directed by  
tower/ground control**

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.



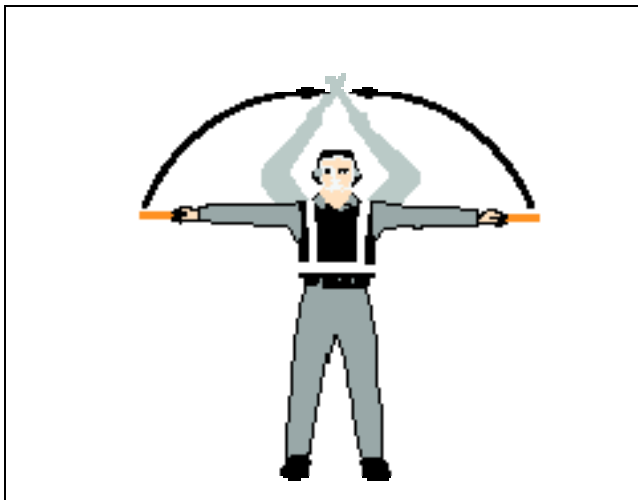
**5 a). Turn left  
(from pilot's point of view)**

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.




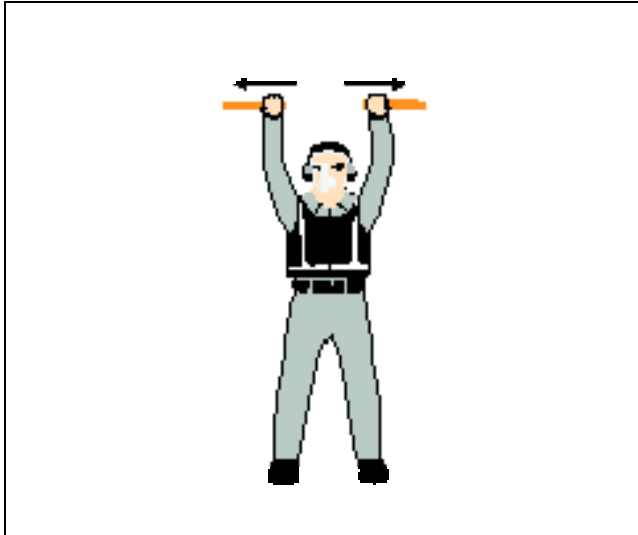
**6 b). Emergency stop**

Abruptly extend arms and wands to top of head, crossing wands.

	<p><b>7 a). Set brakes</b></p> <p>Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. <b>Do not</b> move until receipt of “thumbs up” acknowledgement from flight crew.</p>
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	<p><b>7 b). Release brakes</b></p> <p>Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. <b>Do not</b> move until receipt of “thumbs up” acknowledgement from flight crew.</p>
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	<p><b>8 a). Chocks inserted</b></p> <p>With arms and wands fully extended above head, move wands inward in a “jabbing” motion until wands touch. <b>Ensure</b> acknowledgement is received from flight crew.</p>
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**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.




**9. Start engine(s)**

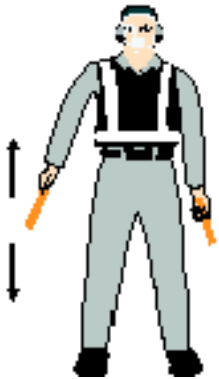
Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.





**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.


	<p style="text-align: center;"><b>11. Slow down</b></p> <p>Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.</p>
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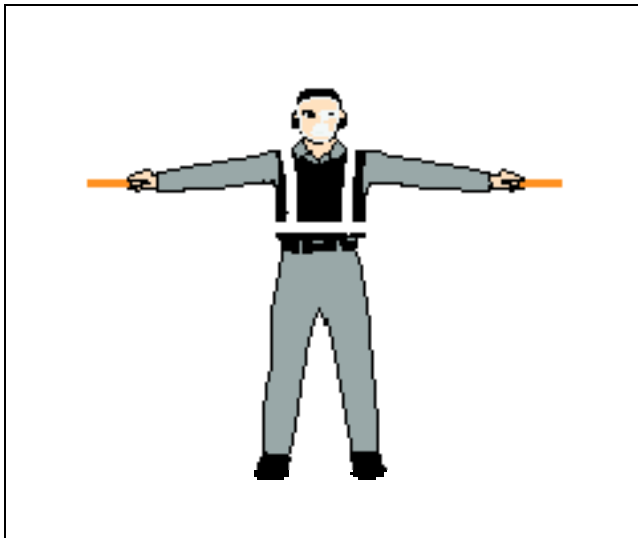
	<p style="text-align: center;"><b>12. Slow down engine(s) on indicated side</b></p> <p>With arms down and wands toward ground, wave either <i>right</i> or <i>left</i> wand up and down indicating engine(s) on <i>left</i> or <i>right</i> side respectively should be slowed down.</p>
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	<p style="text-align: center;"><b>13. Move back</b></p> <p>With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6 a) or 6 b).</p>
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	<p><b>14 a). Turns while backing (for tail to starboard)</b></p> <p>Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.</p>
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	<p><b>14 b). Turns while backing (for tail to port)</b></p> <p>Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.</p>
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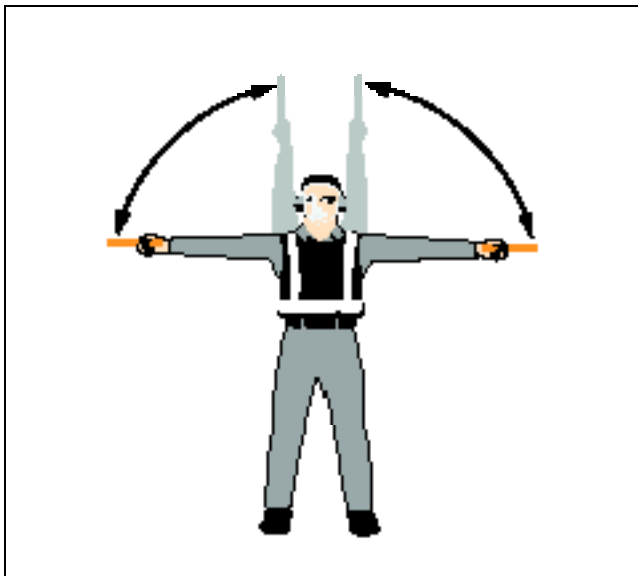
	<p><b>*15. Affirmative/all clear</b></p> <p>Raise right arm to head level with wand pointing up or display hand with “thumbs up”; left arm remains at side by knee.</p> <p><i>* This signal is also used as a technical/servicing communication signal.</i></p>
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**\*16. Hover**

Fully extend arms and wands at a 90-degree angle to sides.

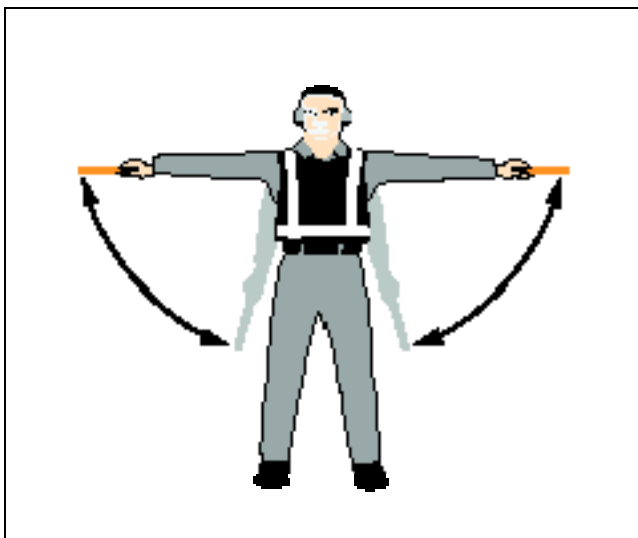
*\* for use to hovering helicopters*



**\*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.

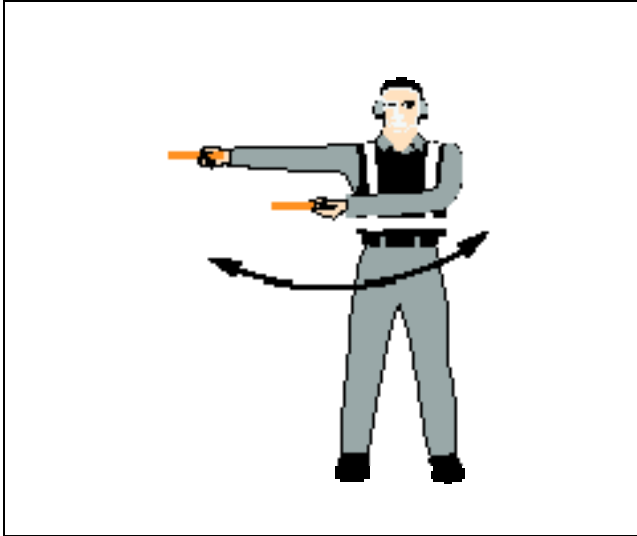
*\* for use to hovering helicopters*



**\*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.

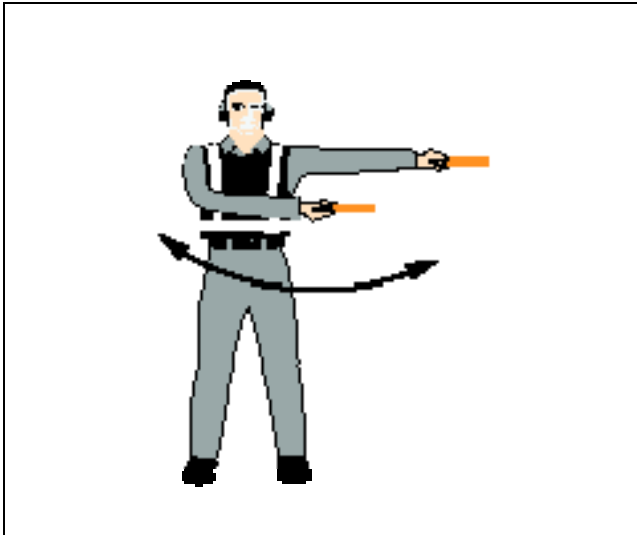
*\* for use to hovering helicopters*



**\*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.

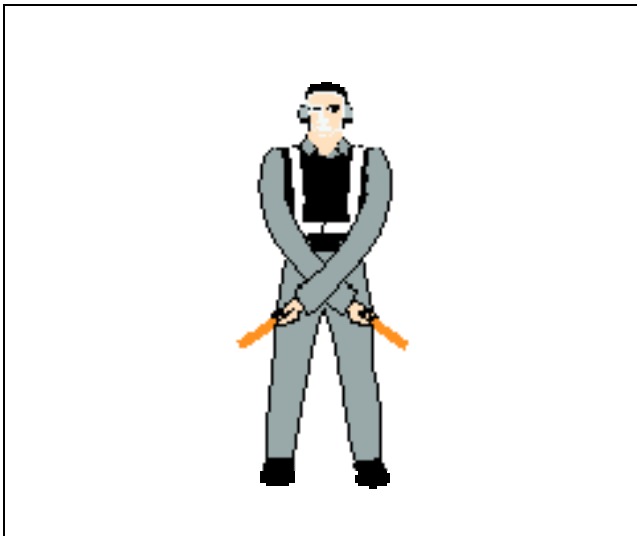
*\* for use to hovering helicopters*



**\*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.

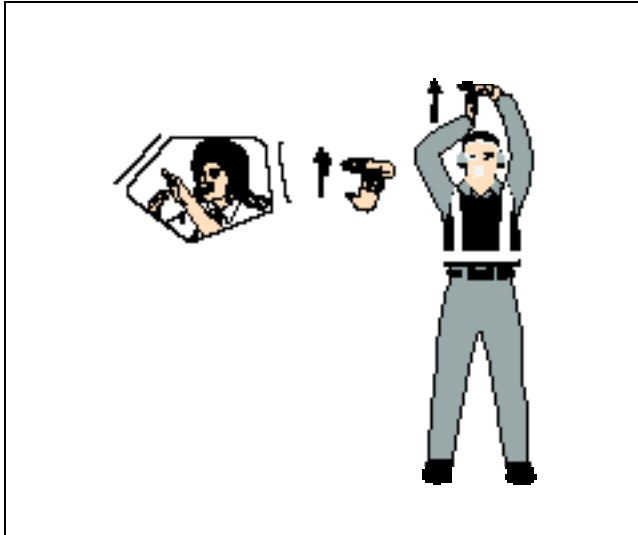
*\* for use to hovering helicopters*



	<p><b>21. Hold position/stand by</b></p> <p>Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.</p>
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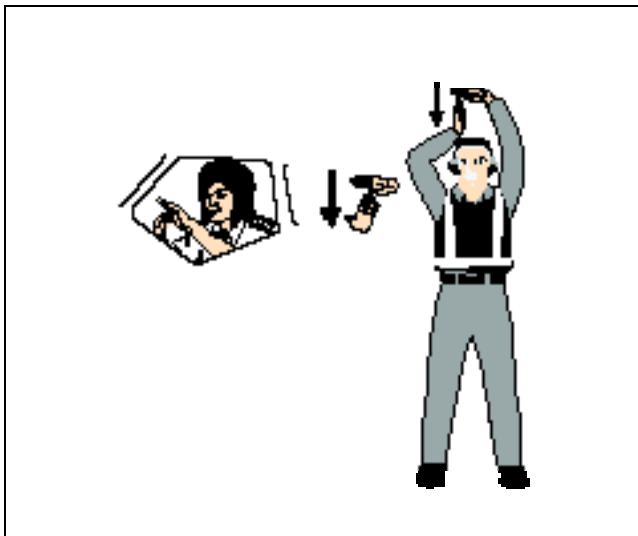
	<p><b>22. Dispatch aircraft</b></p> <p>Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.</p>
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	<p><b>23. Do not touch controls (technical/servicing communication signal)</b></p> <p>Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.</p>
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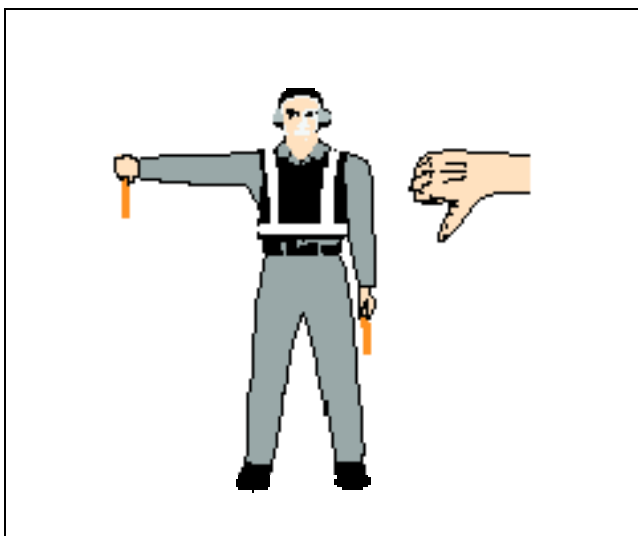
**24. Connect ground power  
(technical/servicing  
communication signal)**

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.



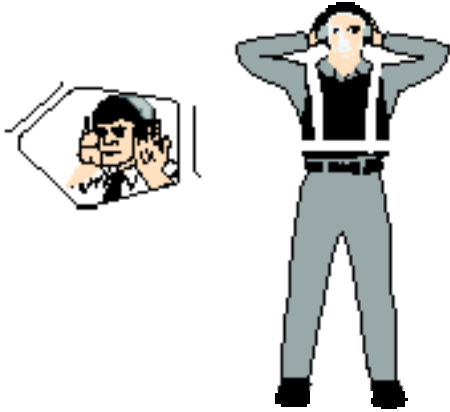
**25. Disconnect power  
(technical/servicing  
communication signal)**


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.

	<p><b>27. Establish communication via interphone (technical/servicing communication signal)</b></p> <p>Extend both arms at 90 degrees from body and move hands to cup both ears.</p>
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	<p><b>*28. Open/close stairs (technical/servicing communication signal)</b></p> <p>With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.</p> <p><i>* This signal is intended mainly for aircraft with the set of integral stairs at the front.</i></p>
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## 5.2 From the pilot of an aircraft to a signalman/marshaller

5.2.1 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.

### 5.2.1.1 Brakes

- 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.

### 5.2.1.2 Chocks

- a) *Insert chocks:* arms extended, palms outwards, move hands inwards to cross in front of face.
- b) *Remove chocks:* hands crossed in front of face, palms outwards, move arms outwards.

5.2.1.3 Ready to start engine(s)

- a) Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.


**5.3 Technical/servicing communication signals**


5.3.1 Manual signals shall only be used when verbal communication is not possible with respect to technical/servicing communication signals.


5.3.2 Signalmen/marshalls shall ensure that an acknowledgement is received from the flight crew with respect to technical/servicing communication signals.


**6. STANDARD EMERGENCY HAND SIGNALS**

6.1 The following hand signals are established as the minimum required for emergency communication between the ARFF incident commander/ARFF firefighters and the cockpit and/or cabin crews of the incident aircraft. ARFF emergency hand signals should be given from the left front side of the aircraft for the cockpit crew.

	<p style="text-align: center;"><b>1. Recommend Evacuation</b></p> <p>Evacuation recommended based on aircraft rescue and fire-fighting and Incident Commander's assessment of external situation.</p> <p>Arm extended from body, and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body.</p> <p>Night – same with wands.</p>
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	<p><b>2. Recommend Stop</b></p> <p>Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress.</p> <p>Arms in front of head – Crossed at wrists</p> <p>Night – same with wands</p>
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	<p><b>3. Emergency Contained</b></p> <p>No outside evidence of dangerous conditions or “all-clear.”</p> <p>Arms extended outward and down at a 45 degree angle. Arms moved inward below waistline simultaneously until wrists crossed, then extended outward to starting position.</p> <p>Night – same with wands.</p>
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	<p><b>4. Fire</b></p> <p>Move right-hand in a “fanning” motion from shoulder to knee, while at the same time pointing with left hand to area of fire.</p> <p>Night – same with wands.</p>
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**APPENDIX 2 OF PART A – RULES OF THE AIR**

**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		
FL	Level Feet	Metres	FL	Level Feet	Metres	FL	Level Feet	Metres	FL	Level 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.

## APPENDIX 3 OF PART A – RULES OF THE AIR

### UNMANNED FREE BALLOONS

#### 1. Classification of Unmanned Free Balloons

1.1 Unmanned free balloons shall be classified as (see Figure AP3-1):

- 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) below; 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 competent authority (ies).

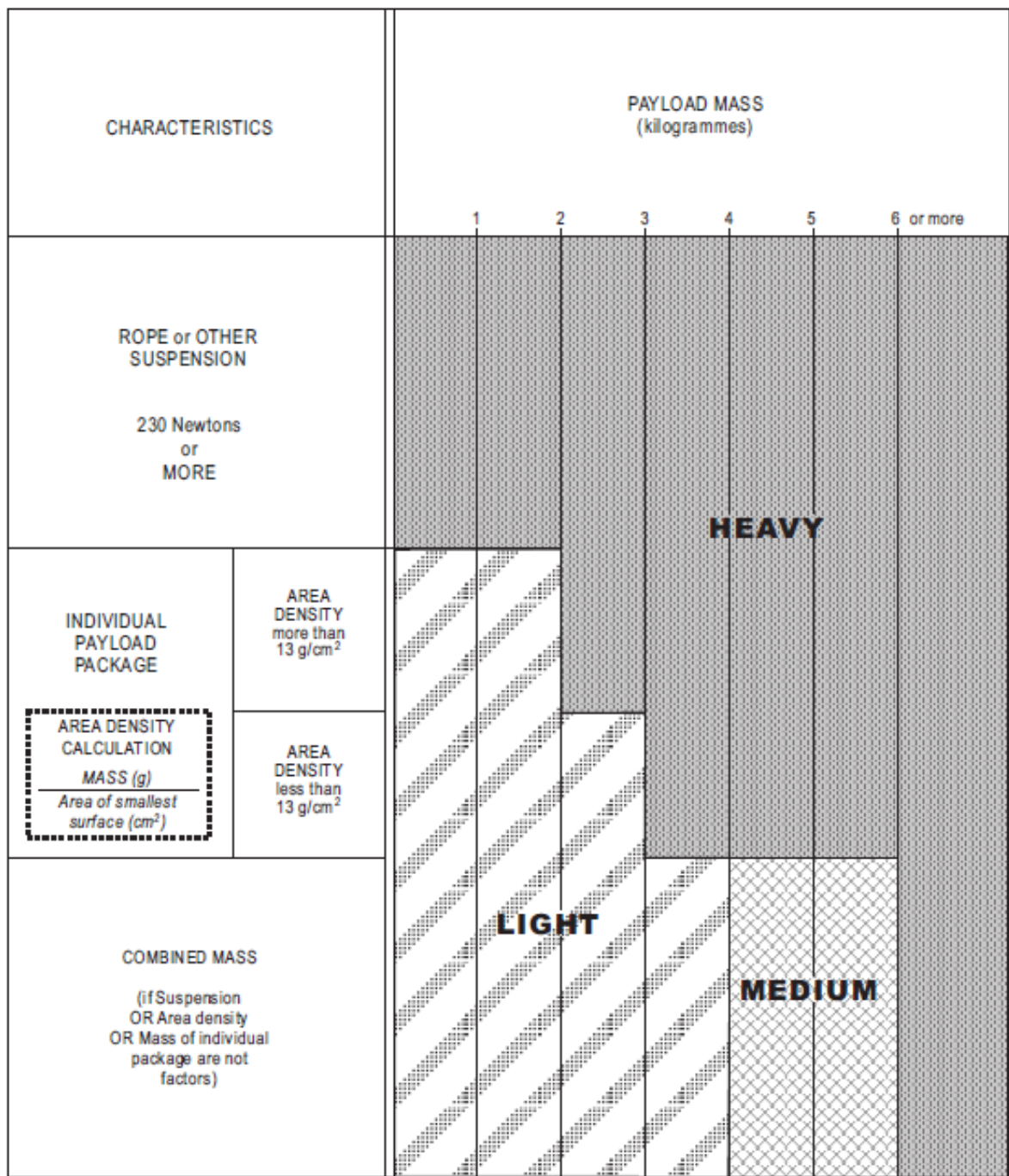


Figure AP3-1

### 3 Operating Limitations and Equipment Requirements

3.1 A heavy unmanned free balloon shall not be operated without authorisation from the competent authority at or through any level below 18 000 m (60 000 ft) pressure-altitude at which:

- a) there are clouds or obscuring phenomena of more than four oktas coverage; or
- b) the horizontal visibility is less than 8 km.



3.2 A heavy or medium unmanned free balloon shall not be released in a manner that will cause it to fly lower than 300 m (1 000 ft) over the congested areas of cities, towns or settlements or an open-air assembly of persons not associated with the operation.

3.3 A heavy unmanned free balloon shall not be operated unless:

- a) it is equipped with at least two payload flight-termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other;
- b) for polyethylene zero-pressure balloons, at least two methods, systems, devices, or combinations thereof, that function independently of each other are employed for terminating the flight of the balloon envelope;
- c) the balloon envelope is equipped with either a radar reflective device(s) or radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range, and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar.

3.4 A heavy unmanned free balloon shall not be operated under the following conditions:

- a) in an area where ground-based SSR equipment is in use, unless it is equipped with a secondary surveillance radar transponder, with pressure-altitude reporting capability, which is continuously operating on an assigned code, or which can be turned on when necessary by the tracking station; or
- b) in an area where ground-based ADS-B equipment is in use, unless it is equipped with an ADS-B transmitter, with pressure-altitude reporting capability, which is continuously operating or which can be turned on when necessary by the tracking station.

3.5 An unmanned free balloon that is equipped with a trailing antenna that requires a force of more than 230 N to break it at any point shall not be operated unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals.

3.6 A heavy unmanned free balloon shall not be operated below 18 000 m (60 000 ft) pressure-altitude at night or during any other period prescribed by the competent authority, unless the balloon and its attachments and payload, whether or not they become separated during the operation, are lighted.

3.7 A heavy unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m long shall not be operated during night below 18 000 m (60 000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of high conspicuity colours or has coloured pennants attached.

## 4 Termination

4.1 The operator of a heavy unmanned free balloon shall activate the appropriate termination devices required by 3.3 a) and b) above:

- a) when it becomes known that weather conditions are less than those prescribed

for the operation;

- b) if a malfunction or any other reason makes further operation hazardous to air traffic or to persons or property on the surface; or
- c) prior to unauthorised entry into the airspace over another State's territory.

## **5. Flight Notification**

### **5.1 Pre-flight Notification**

5.1.1 Early notification of the intended flight of an unmanned free balloon in the medium or heavy category shall be made to the appropriate air traffic services unit not less than seven days before the date of the intended flight.

5.1.2 Notification of the intended flight shall include such of the following information as may be required by the appropriate air traffic services unit:

- a) balloon flight identification or project code name;
- b) balloon classification and description;
- c) SSR code, aircraft address or NDB frequency as applicable;
- d) operator's name and telephone number;
- e) launch site;
- f) estimated time of launch (or time of commencement and completion of multiple launches);
- g) number of balloons to be launched and the scheduled interval between launches (if multiple launches);
- h) expected direction of ascent;
- i) cruising level(s) (pressure-altitude);
- j) the estimated elapsed time to pass 18 000 m (60 000 ft) pressure-altitude or to reach cruising level if at or below 18 000 m (60 000 ft), together with the estimated location. If the operation consists of continuous launchings, the time to be included shall be the estimated time at which the first and the last in the series will reach the appropriate level (e.g. 122136Z–130330Z);
- k) the estimated date and time of termination of the flight and the planned location of the impact/recovery area. In the case of balloons carrying out flights of long duration, as a result of which the date and time of termination of the flight and the location of impact cannot be forecast with accuracy, the term "long duration" shall be used. If there is to be more than one location of impact/recovery, each location shall be listed together with the appropriate estimated time of impact. If there is to be a series of continuous impacts, the time to be included shall be the estimated time of the first and the last in the series (e.g. 070330Z–072300Z).

5.1.3 Any changes in the pre-launch information notified in accordance with above shall be forwarded to the air traffic services unit concerned not less than 6 hours before the estimated time of launch, or in the case of solar or cosmic disturbance

investigations involving a critical time element, not less than 30 minutes before the estimated time of the commencement of the operation.

5.2 Notification of Launch

5.2.1 Immediately after a medium or heavy unmanned free balloon is launched the operator shall notify the appropriate air traffic services unit of the following:

- a) balloon flight identification;
- b) launch site;
- c) actual time of launch;
- d) estimated time at which 18 000 m (60 000 ft) pressure-altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 18 000 m (60 000 ft), and the estimated location; and
- e) any changes to the information previously notified in accordance with 5.1.2 g) and h).

5.3 Notification of Cancellation

5.3.1 The operator shall notify the appropriate air traffic services unit immediately it is known that the intended flight of a medium or heavy unmanned free balloon, previously notified in accordance with 5.1, has been cancelled.

**6. Position Recording and Reports**

6.1 The operator of a heavy unmanned free balloon operating at or below 18 000 m (60 000 ft) pressure-altitude shall monitor the flight path of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 2 hours.

6.2 The operator of a heavy unmanned free balloon operating above 18 000 m (60 000 ft) pressure-altitude shall monitor the flight progress of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 24 hours.

6.3 If a position cannot be recorded in accordance with 6.1 and 6.2, the operator shall immediately notify the appropriate air traffic services unit. This notification shall include the last recorded position. The appropriate air traffic services unit shall be notified immediately when tracking of the balloon is re-established.

6.4 One hour before the beginning of planned descent of a heavy unmanned free balloon, the operator shall forward to the appropriate ATS unit the following information regarding the balloon:

- a) the current geographical position;
- b) the current level (pressure-altitude);
- c) the forecast time of penetration of 18 000 m (60 000 ft) pressure-altitude, if applicable;

d) the forecast time and location of ground impact.

6.5 The operator of a heavy or medium unmanned free balloon shall notify the appropriate air traffic services unit when the operation is ended.

**Part B – Requirements regarding Services in Air Navigation**

Article 1

Compliance with ICAO

The Member States shall comply with the appropriate provisions adopted under the Chicago Convention until this Annex is amended in accordance with Article 6 of this Regulation.

**Part C - Requirements regarding Procedures in Air Navigation**

Article 1

Compliance with ICAO

The Member States shall comply with the appropriate provisions adopted under the Chicago Convention until this Annex is amended in accordance with Article 6 of this Regulation.

### *Supplement to the Annex*

List of commonly agreed differences to notify to ICAO in accordance with article 4 of this Regulation: **(N.B. To be completed after finalisation of text)**

#### **PART A**

#### **Differences between Part A and the International Standards contained in Annex 2 (10<sup>th</sup> Edition, up to and including Amendment 42) to the Convention on International Civil Aviation**

##### **Difference A2-01**

ICAO Annex 2  
Chapter 3  
3.2.2

New Provision. The Union regulation, paragraph 3.2.3.2, specifies:  
“3.2.3.2 *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  
3.3.1.2

ICAO Annex 2, 3.3.1.2 is replaced with Union regulation 3.3.1.2. The differences between this ICAO Standard and this Union regulation are as follows:

- This ICAO Standard requires that a flight plan be submitted prior to operating any IFR flight within advisory airspace. The Union regulation expands the requirement to submit a flight plan prior to operating any IFR flight.
- With regards to VFR flights planned to operate across international borders, the Union regulation (3.3.1.2 b) iv) differs with the ICAO Standard in Annex 2, 3.3.1.2 e) with the addition of the underlined text, as follows:  
*“planned to operate across international borders, unless otherwise prescribed by the States concerned.”*

Note: Union regulation 3.3.1.2 b) v) pertaining to the submission of VFR flight plans, which is also a difference from this ICAO Standard, reads as follows:

v. *planned to operate at night, in accordance with 4.3 a).*

This difference is addressed in **Difference A2-08** below.

##### **Difference A2-03**

ICAO Annex 2  
Chapter 3  
3.3.2

New Provision. The Union regulation, paragraph. 3.3.2.1.1, which is based on ICAO Annex 2, paragraph 3.3.2, Notes 1 and 2, specifies:  
“3.3.2.1.1 *For flight plans submitted during flight, the departure aerodrome 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.*”

**Difference A2-04**

New Provision. The Union regulation, paragraph 3.2.3.3.1 specifies:

*“3.2.3.3.1 ~~Glider~~Sailplanes overtaking. A ~~glidersailplane~~ overtaking another ~~glidersailplane~~ may alter its course to the right or to the left.”*

**Difference A2-05**

ICAO Annex 2  
Chapter 3  
3.3.4

New Provision. The Union regulation, paragraph 3.3.4.1.1, which is based on ICAO Annex 2, paragraph 3.3.4, Note 1, specifies:

*“3.3.4.1.1 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.”*

**Difference A2-06**

ICAO Annex 2  
Chapter 3  
3.6.1.1

New Provision. The Union regulation, paragraph 3.6.1.1.1, which is based on ICAO Annex 2, paragraph 3.6.1.1, Note 2, specifies:

*“3.6.1.1.1 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.”*

**Difference A2-07**

ICAO Annex 2  
Chapter 3  
3.6.5.1

New Provision. The Union regulation, paragraph 3.6.5.1.1, which is based on ICAO Annex 2, paragraph 3.6.5.1, Note 2, specifies:

*“3.6.5.1.1 The requirement for an aircraft to maintain an air-ground voice communication watch shall remain in effect when CPDLC has been established.”*



**Difference A2-08**

ICAO Annex 2  
Chapter 4  
4.3

ICAO Annex 2, 4.3, is replaced with Union regulation 4.3. The difference is that the Union regulation adds requirements under which VFR flights at night may be permitted, as follows:

*“4.3 When so prescribed by the competent authority, VFR flights at night may be permitted under the following conditions:*

- a) if leaving the vicinity of an aerodrome, a flight plan shall be submitted;*
- b) flights shall establish and maintain two-way radio communication on the appropriate ATS communication channel, when available;*
- c) the VMC visibility and distance from cloud minima as specified in Table 3-2 shall apply except that:*
  - i) the ceiling shall not be less than 450 m (1 500 ft);*
  - ii) except as specified in 4.3 d), the reduced flight visibility provisions specified in Table 3-2 a) and b) shall not apply;*
  - iii) in airspace classes B, C, D, E, F and G, at and below 900 m (3000 ft) above MSL or 300 m (1000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface;*
  - iv) for helicopters in airspace classes F and G, flight visibility shall not be less than 3 km, provided that the pilot maintains continuous sight of the surface and if manoeuvred at a speed that will give adequate opportunity to observe other traffic or obstacles in time to avoid collision; and*
  - v) for mountainous terrain, higher VMC visibility and distance from cloud minima may be prescribed.*
- d) ceiling, visibility and distance from cloud minima lower than those specified 4.3 c) above may be permitted for helicopters in special cases, such as medical flights, search and rescue operations and fire-fighting.*
- e) 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.“*

**Difference A2-09**

ICAO Annex 2  
Chapter 4  
4.6

ICAO Annex 2, 4.6, is replaced with Union regulation 4.6, introducing the obstacle clearance criteria in 4.6 b), as follows:

- “4.6 Except when necessary for take-off or landing, or except by permission from the competent authority, a VFR flight shall not be flown:
- a) 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;
  - b) elsewhere than as specified in 4.6 a), 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 A2-10**

ICAO Annex 2  
Appendix 1  
1.

New Provision. The Union regulation, Appendix 1, paragraph 1.1.1, which is based on ICAO Annex 2, Appendix 1, 1. Note 1, specifies:

“1.1.1 Notwithstanding the provisions in 1.2 and 1.3 below, an aircraft in distress shall use any means at its disposal to attract attention, make known its position and obtain help.”

**Difference A2-11**

ICAO Annex 2  
Appendix 1  
5.1  
Note 1

New Provision. The Union regulation, Appendix 1, paragraph 5.1.1, which is based on ICAO Annex 2, Appendix 1, 5.1, Note 1, specifies:

“Appendix 1, 5.1.1 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.”

**Difference A2-12**

ICAO Annex 2  
Appendix 1  
5.2  
Note 1

New Provision. The Union regulation, Appendix 1, paragraph 5.2.1, which is based on ICAO Annex 2, Appendix 1, 5.2, Note 1, specifies:

“Appendix 1, 5.2.1 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.”

**Difference A2-13**

ICAO Annex 2  
Appendix 4  
5.1.2 j)

New Provision. The Union regulation, Appendix 3, paragraph 5.1.2 j), 2<sup>nd</sup> sentence, which is based on ICAO Annex 2, Appendix 4, 5.1.2 j), Note, specifies:

“Appendix 4, 5.1.2 j) 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);”

**Difference A2-14**

ICAO Annex 2      New Provision.    The Union regulation, Appendix 3, paragraph 5.1.2 k), 3<sup>rd</sup> and  
Appendix 4      4<sup>th</sup> sentences, which are based on ICAO Annex 2, Appendix 4, 5.1.2 k), Note,  
5.1.2 k)           specifies:

*“Appendix 4, 5.1.2 k) 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).”*