



**Maldives Civil Aviation Authority  
Republic of Maldives**

**Maldivian Civil Aviation Regulations**

# **MCAR-2 Rules of the Air**

**Issue 2, Amendment 0, 1 September 2014**

## Foreword

Maldives Civil Aviation Authority, in exercise of the powers conferred on it under Articles 5 and 6 of the Maldives Civil Aviation Act 2/2012 has adopted this Regulation.

This Regulation shall be cited as MCAR-2 Rules of the Air and shall come in to force on 1 September 2014.

Existing aviation requirements in the field of air navigation as listed in MCAR-2 Rules of the Air dated 7 January 2010 will be repealed as from 1 September 2014.

Definitions of the terms and abbreviations used in this regulation, unless the context requires otherwise, are in MCAR-1 Definitions and Abbreviations.



**For the Civil Aviation Authority**  
Hussain Jaleel  
**Chief Executive**





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## **CHAPTER I — DEFINITIONS**

Definitions of the terms and abbreviations used in this regulation, unless the context requires otherwise, are in MCAR-I Definitions and Abbreviations.

Throughout the text of this document the term “service” is used as an abstract noun to designate functions, or service rendered; the term “unit” is used to designate a collective body performing a service.

The designation (RR) in these definitions indicates a definition which has been extracted from the Radio Regulations of the International Telecommunication Union (ITU) (see Handbook on Radio Frequency Spectrum Requirements for Civil Aviation including statement of approved ICAO policies (Doc 9718)).

## **CHAPTER 2 — APPLICABILITY OF THE RULES OF THE AIR**

### **2.1 TERRITORIAL APPLICATION OF THE RULES OF THE AIR**

2.1.1 The rules of the air contained in this MCAR, shall apply to all aircraft flying over Maldivian Territory and aircraft bearing the Maldivian nationality and registration marks, wherever they may be, to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown.

2.1.2 For purposes of flight over those parts of the high seas where Maldives has accepted pursuant to a regional air navigation agreement, the responsibility of providing air traffic services, the “appropriate ATS authority” referred to in this MCAR is the relevant authority designated by Maldives Civil Aviation Authority.

*Note. — The phrase “regional air navigation agreement” refers to an agreement approved by the Council of ICAO normally on the advice of a Regional Air Navigation Meeting.*

### **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 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.

*Note – Information relevant to the services provided to aircraft operating in accordance with both visual flight rules and instrument flight rules in the seven ATS airspace classes is contained in AIP (Maldives) ENR 1.4*

2.2.2 A pilot may elect to fly in accordance with instrument flight rules in visual meteorological conditions or may be required to do so by the appropriate ATS authority.

*Note – Information on twilight periods of aerodromes is given in AIP (Maldives) GEN 2.7 SUNRISE/ SUNSET tables.*

### **2.3 RESPONSIBILITY FOR COMPLIANCE WITH THE RULES OF THE AIR**

2.3.1 Responsibility of pilot-in-command

The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with the Rules of the Air, 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 For the purpose of avoiding danger, if any departure is made from these Rules or in the case of aircraft bearing Maldivian nationality and register markings by virtue of 2.1.1 and 2.1.2, the pilot-in-command of the aircraft shall furnish written particulars of the departure, and of the circumstances giving rise to it, to the Director within 10 days thereafter.

### 2.3.3 Pre-flight action

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

## 2.4 **AUTHORITY OF PILOT-IN-COMMAND OF AN AIRCRAFT**

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

## 2.5 **INTOXICATING LIQUORS, NARCOTICS AND DRUGS**

- a) No person shall act as, or be carried in an aircraft for the purpose of acting as a member of the flight crew, if he has taken or used any alcoholic drink, sedative, narcotic or stimulant drug or preparation within 12 hours of the commencement of the flight and no such person shall while so acting or being carried, take, use or be under the influence of any such substance.
- b) No person shall, while in a state of intoxication, enter or be in an aircraft.

## CHAPTER 3 — GENERAL RULES

### 3.1 PROTECTION OF PERSONS AND PROPERTY

#### 3.1.1 Negligent or reckless operation of aircraft.

- a) An aircraft shall not be operated in a negligent manner or in a reckless manner so as to be likely to endanger the life or property of others.
- b) An aircraft shall not be flown in such a manner or in such circumstances as is or are likely to cause avoidable danger to any person or property on land or water or in the air.

#### 3.1.2 Minimum heights

Except when necessary for take-off or landing, or except by permission from the Director, 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.

*Note – See 4.6 for minimum heights for VFR flights and 5.1.2 for minimum levels for IFR flights.*

#### 3.1.3 Cruising levels

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

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

*Note – The system of flight levels is prescribed in the Procedures for Air Navigation Services – Aircraft Operations (Doc 8168).*

#### 3.1.4 Dropping, picking and spraying

Nothing shall be dropped, sprayed or picked from an aircraft in flight so as to endanger persons on the surface of the earth or water, or to cause damage to property except under conditions prescribed by the Director and as indicated by the relevant information, advice and/ or clearance from the Air Traffic Services Unit.

### 3.1.5 Towing

No aircraft or object shall be towed by an aircraft, except in accordance with requirements prescribed by the Director and as indicated by the relevant information, advice and/ or clearance from the Air Traffic Services Unit.

### 3.1.6 Parachute descents

3.1.6.1 Parachute descents, other than emergency descents, shall not be made except under conditions prescribed by the Director and as indicated by the relevant information, advice and/ or clearance from the Air Traffic Services Unit.

3.1.6.2 Parascending parachute operations shall not be performed unless permitted by and conducted in accordance with the written specifications of the Director.

### 3.1.7 Acrobatic flight

a) An aircraft:-

1) shall not be flown in acrobatic flight at night;

2) shall not be flown in acrobatic flight of a particular kind unless the certificate of airworthiness of the aircraft specifies that the aircraft may perform that type of acrobatic flight.

b) Except with the permission of the Director a person shall not engage in acrobatic flight in an aircraft:-

1) At a height lower than 1000 metres above the highest point of the terrain, or any obstacle thereon, within a radius of 600 metres of a line extending vertically below the aircraft; or

2) Over a city, town, populous area, regatta, race meeting or meeting for public games or sports.

c) Note: For the purposes of this regulation acrobatic flight means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, or an abnormal variation in speed but straight and steady stalls or turns in which the angle of bank does not exceed 60 degrees shall be deemed not to be acrobatic flight

### 3.1.8 Low flying

a) An aircraft shall not fly over any city or town or other populous area except at such a height that the aircraft could land outside the city, town or populous area, in the event of the means of propulsion failing through any cause, or if it is an aeroplane or helicopter with more than one engine, at such a height that it could land outside the city, town or populous area, in the event of one of its engines failing.

- b) Without prejudice to paragraph (a), an aircraft shall not fly over:-
- 1) any city, town or populous area, at a height lower than 300 metres, or
  - 2) over any other area at a height lower than 150 metres.
- c) A height specified in paragraph (b) is the height above the highest point of the terrain, or of any obstacle thereon, within a radius of 600 metres of a line extending vertically below the aircraft.
- d) Paragraphs (a) and (b) shall not apply if:-
- 1) Through stress of weather or any other unavoidable cause it is essential that a lower height be maintained.
  - 2) The aircraft is engaged in aerial work of a nature which necessitates low flying and the owner or operator of the aircraft has received from the Director either a general permit for all flights or a specific permit for a single flight to be made at a lower height while engaged in such aerial work.
  - 3) The pilot of the aircraft is engaged in flying training and flies over an area in which low flying training is permitted by the Director;
  - 4) The pilot of the aircraft is engaged in a bailed approach procedure, or the practice of such procedures under the supervision of a flying instructor or a check pilot;
  - 5) The aircraft is flying in the course of actually taking off or landing at an aerodrome,
  - 6) The pilot of the aircraft is engaged in a search and rescue operation and is either engaged in a search or is dropping supplies in relation to such operation.

### 3.1.9 Remotely piloted aircraft

An aircraft, other than a scale model of an aircraft, which is capable of being flown without a pilot, shall not be flown without a pilot except with the authorization of the Director and in compliance with such condition as he may specify.

### 3.1.10 Formation flights

An aircraft shall not be flown in such proximity to other aircraft as to create a collision hazard and shall not be flown in formation with one or more other aircraft except by prearrangement 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 appropriate ATS Authority. These conditions shall include the following:

- a) the formation operates as a single aircraft with regard to navigation and position reporting;
- b) 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
- c) a distance not exceeding 1 km (0.5 NM) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each aircraft.

#### 3.1.11 Unmanned free balloons

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 4.

#### 3.1.12 Prohibited areas and restricted areas

An Aircraft shall not be flown in a prohibited, or in a restricted area within Maldives, particulars of which have been duly published either in the Aeronautical Information Publication, Notice to Airmen, or communicated by an Air Traffic Services unit by any other means except in accordance with the conditions of the restrictions or by permission of the Director.

### 3.2 AVOIDANCE OF COLLISIONS

The pilot-in-command of an aircraft shall take all possible measures to ensure that his aircraft does not collide with any other aircraft.

Nothing in these rules 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.

*Note 1 – It is important that vigilance for the purpose of detecting potential collisions be exercised on board an aircraft, regardless of the type of flight or the class of airspace in which the aircraft is operating, and while operating on the movement area of an aerodrome.*

*Note 2 – Operating procedures for use of ACAS detailing the responsibilities of the pilot-in-command are contained in PANS-OPS (Doc 8168), Volume I, Part III, Section 3, Chapter 3.*

*Note 3 – Carriage requirements for ACAS equipment are addressed in MCAR OPS I-Subpart K*

#### 3.2.1 Proximity

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

### 3.2.2 Right-of-way

The pilot-in-command of an aircraft that has the right-of-way as defined by this part shall maintain its heading and speed except when such action would result in a collision with another aircraft where he shall take all possible measures to ensure that a collision does not occur.

3.2.2.1 The pilot-in-command of an aircraft who is required by these rules to keep out of the way of another aircraft shall not do so by climbing to pass over, or by diving to pass under, and shall not cross ahead of the other aircraft unless crossing well clear and takes into account the effect of aircraft wake turbulence.

#### 3.2.2.2 *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.

#### 3.2.2.3 *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, gliders and balloons;
- b) airships shall give way to gliders and balloons;
- c) gliders shall give way to balloons;
- d) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.

#### 3.2.2.4 *Overtaking*

- a) 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.
- b) An aircraft that is being overtaken has the right-of-way.
- c) 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.

### 3.2.2.5 *Landing*

3.2.2.5.1 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.

3.2.2.5.2 Except when carrying out an emergency, when two or more heavier-than-air aircraft are approaching an aerodrome for the purpose of landing;

a) 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, in front of another which is in the final stages of an approach to land, or to overtake that aircraft.

b) Nevertheless, power-driven heavier-than-air aircraft shall give way to gliders.

3.2.2.5.3 Emergency landing.

An aircraft that is aware that another is compelled to land shall give way to that aircraft.

### 3.2.2.6 *Taking off.*

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

### 3.2.2.7 *Surface movement of aircraft*

3.2.2.7.1 To avoid collision between two aircraft taxiing on the movement area of an aerodrome the following shall apply:

a) Approaching head-on:

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) Aircraft on converging course:

When two aircraft are on a converging course, the one which has the other on its right shall give way;

c) Overtaking:

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.

*Note – For the description of an overtaking aircraft see 3.2.2.4.*

3.2.2.7.2 An aircraft taxiing on the maneuvering area shall stop and hold at all runway-holding positions unless otherwise authorized by the aerodrome control tower.

*Note – For runway-holding position markings and related signs, see CAA Air Safety Circular No. ASC 139-5.*

3.2.2.7.3 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 Lights to be displayed by aircraft

*Note 1 – The characteristics of lights intended to meet the requirements of 3.2.3 for aeroplanes are specified in ICAO Annex 8. Specifications for navigation lights for aeroplanes are contained in the Appendices to Parts I and II of ICAO Annex 6. Detailed technical specifications for lights for aeroplanes are contained in Volume II, Part A, Chapter 4 of the Airworthiness Manual (Doc 9760) and for helicopters in Part A, Chapter 5 of that document.*

*Note 2 – In the context of 3.2.3.2 c) and 3.2.3.4 a) an aircraft is understood to be operating when it is taxiing or being towed or is stopped temporarily during the course of taxiing or being towed.*

*Note 3 – For aircraft on the water see 3.2.6.2.*

3.2.3.1 Except as provided by 3.2.3.5, from sunset to sunrise or during any other period which may be prescribed by the Director 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.

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

3.2.3.2 Except as provided by 3.2.3.5, from sunset to sunrise or during any other period prescribed by the Director:

- 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;
- c) all aircraft operating 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.

3.2.3.3 Except as provided by 3.2.3.5, all aircraft in flight and fitted with anti-collision lights to meet the requirement of 3.2.3.1 a) shall display such lights also outside the period specified in 3.2.3.1.

3.2.3.4 Except as provided by 3.2.3.5, all aircraft:

- a) operating on the movement area of an aerodrome and fitted with anti-collision lights to meet the requirement of 3.2.3.2 c); or
- b) on the movement area of an aerodrome and fitted with lights to meet the requirement of 3.2.3.2 d);

shall display such lights also outside the period specified in 3.2.3.2.

3.2.3.5 A pilot shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of 3.2.3.1, 3.2.3.2, 3.2.3.3 and 3.2.3.4 if they do or are likely to:

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

### 3.2.4 Flight Instruction

Flight instruction and authorization to a student for solo flying shall be such as to ensure that an aircraft piloted by the student shall not constitute a hazard to air navigation.

#### 3.2.4.1 Flight under simulated instrument flying condition

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

- 1) fully functioning dual controls are installed in the aircraft; and
- 2) A competent pilot occupies a control seat to act as safety pilot for the person who is flying under simulated instrument conditions and:
  - a) The safety pilot shall have adequate vision forward and to each side of the aircraft, or
  - b) If the safety pilot's of vision is limited, a competent observer in communication with the safety pilot occupies a position in the aircraft from which his field of vision supplements that of the safety pilot.

### 3.2.5 Operation on and in the vicinity of an aerodrome

An aircraft operated on or in the vicinity of an aerodrome shall, whether or not within an aerodrome traffic zone:

- 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) make all turns to the left, when approaching for a landing and after taking off, unless otherwise instructed;
- d) land and take off into the wind unless safety, the runway configuration, or air traffic considerations determine that a different direction is preferable.

### 3.2.6 Water operations

*Note – In addition to the provisions of 3.2.6.1 of this MCAR, rules set forth in the International Regulations for Preventing Collisions at Sea, developed by the International Conference on Revision of the International Regulations for Preventing Collisions at Sea (London, 1972) may be applicable in certain cases.*

*Water aerodromes which are controlled aerodromes*

a) *At a water aerodrome which is a controlled aerodrome, the following additional rules shall apply:-*

1. *An aircraft shall not take off or alight unless the alighting area has been swept and is known to be clear of floating debris dangerous to the navigation of aircraft except that, in an emergency, an aircraft may land in the safest part of the alighting area without delay.*

3.2.6.1 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.

#### 3.2.6.1.1 *Converging.*

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

#### 3.2.6.1.2 *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.

#### 3.2.6.1.3 *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.

#### 3.2.6.1.4 *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.

#### 3.2.6.2 *Lights to be displayed by aircraft on the water.*

Between sunset and sunrise or such other period between sunset and sunrise as may be prescribed by the Director, all aircraft on the water shall display lights as required by the International Regulations for Preventing Collisions at Sea (revised 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.

*Note 1 – Specifications for lights to be shown by aeroplanes on the water are contained in the Appendices to Parts I and II of ICAO Annex 6.*

*Note 2 – The International Regulations for Preventing Collisions at Sea specify that the rules concerning lights shall be complied with from sunset to sunrise. Any lesser period between sunset and sunrise established in accordance with 3.2.6.3 cannot, therefore, be applied in areas where the International Regulations for Preventing Collisions at Sea apply, e.g. on the high seas.*

#### 3.2.6.3 Access to and movement of persons and vehicles on aerodromes.

- a) A person or vehicle shall not go onto any part of an aerodrome (not being a part of the aerodrome which is a public right of way) without the permission of the person in charge of that part of the aerodrome, and except in accordance with any conditions subject to which the permission may have been granted.
- b) A vehicle or person shall not go or move on the manoeuvring area of an aerodrome having an air traffic control (ATC) unit without the permission of that unit, and except in accordance with any conditions subject to which that permission may have been granted.

### **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.

3.3.1.2 A flight plan shall be submitted prior to operating any flight described in 3.3.1.2 a) to e);

- a) If the flight is intended to cross international borders during the flight;

- b) If the flight, or any part of it, will be provided with air traffic control service, or any IFR flight within advisory airspace;
- c) If the flight is to be conducted in compliance with Instrument Flight Rules;
- d) For any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate the provision of flight information, alerting and search and rescue services;
- e) For any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS 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 identification.

*Note – 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 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.*

3.3.1.3 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 a flight 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

A flight plan shall comprise information regarding such of the following items as are considered relevant by the Director:

- Aircraft identification
- Flight rules and type of flight
- Number and type(s) of aircraft and wake turbulence category
- Equipment
- Departure aerodrome (see Note 1)
- Estimated off-block time (see Note 2)
- 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.

*Note 1 – For flight plans submitted during flight, the information provided in respect of this item will be an indication of the location from which supplementary information concerning the flight may be obtained, if required.*

*Note 2 – For flight plans submitted during flight, the information to be provided in respect of this item will be the time over the first point of the route to which the flight plan relates.*

*Note 3 – The term “aerodrome” where used in the flight plan is intended to cover also sites other than aerodromes which may be used by certain types of aircraft, e.g. helicopters or balloons.*

### 3.3.3 Completion of a flight plan

3.3.3.1 Whatever the purpose for which it is submitted, 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 ATS authority or when otherwise deemed necessary by the person submitting the flight plan.

### 3.3.4 Changes to a flight plan

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.

*Note 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 must be reported.*

*Note 2 – Procedures for submission of changes to repetitive flight plans are contained in the PANS-ATM (Doc 4444).*

### 3.3.5 Closing a flight plan

3.3.5.1 A report of arrival shall be made in person, by radiotelephony or via data link 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.

- 3.3.5.2 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.

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

## **3.4 SIGNALS**

- 3.4.1 Upon observing or receiving any of the signals given in Appendix I of this MCAR, pilot-in-command of an aircraft shall take such action as may be required by the interpretation of the signal given in that Appendix and shall take such actions as may be required by such signals.
- 3.4.2 The signals of Appendix I 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 shall be responsible for providing standard marshalling signals to aircraft in a clear and precise manner using the signals shown in Appendix I.
- 3.4.4 No person shall guide an aircraft unless trained, qualified and approved by the appropriate authority to carry out the functions of a signalman.

- 3.4.5 The signalman 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.

*Note – Such time check is normally obtained from an air traffic services unit unless other arrangements have been made by the operator or by the Director.*

- 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.

*Note 1 – A flight plan may cover only part of a flight, as necessary, to describe that portion of the flight or those manoeuvres which are subject to air traffic control. A clearance may cover only part of a current flight plan, as indicated in a clearance limit or by reference to specific manoeuvres such as taxiing, landing or taking off.*

*Note 2 – If an air traffic control clearance is not satisfactory to a pilot-in-command of an aircraft, the pilot-in-command may request and, if practicable, will be issued an amended clearance.*

- 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 re-clearance in flight.* If prior to departure it is anticipated that depending on fuel endurance and subject to re-clearance 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.

*Note – The intent of this provision is to facilitate a re-clearance to a revised destination, normally beyond the filed destination aerodrome.*

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 authorized by the Director, 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 Subject to the overriding requirement in 3.6.2.1.1, an aircraft operating along an ATS route segment defined by reference to very high frequency Omni-directional 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 appropriate ATS 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 agreement is in place, the air traffic services unit (ATSU) shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS 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:*

- 1) *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.

- 2) *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 authorization 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 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 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.

*Note – The conditions and circumstances in which ADS-B or SSR Mode C transmission of pressure-altitude satisfies the requirement for level information in position reports are indicated in the PANS-ATM (Doc 4444).*

### 3.6.4 Termination of control

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

### 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 Director in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

*Note 1 – Selective Calling System (SELCAL) or similar automatic signalling devices satisfy the requirement to maintain an air-ground voice communication watch.*

*Note 2 – The requirement for an aircraft to maintain an air-ground voice communication watch remains in effect after CPDLC has been established.*

#### 3.6.5.2 *Communication failure.*

If a communication failure precludes compliance with 3.6.5.1, the aircraft shall comply with the voice communication failure procedures of ICAO Annex 10, Volume II, and with such of the following procedures as are appropriate. The aircraft shall attempt to establish communications with the appropriate air traffic control unit using all other available means. In addition, the aircraft, when forming part of the aerodrome traffic at a controlled aerodrome, shall keep a watch for such instructions as may be issued by visual signals.

3.6.5.2.1 If in visual meteorological conditions, the aircraft shall:

- a) continue to fly in visual meteorological conditions; land at the nearest suitable aerodrome; and report its arrival by the most expeditious means to the appropriate air traffic control unit;
- b) if considered advisable, complete an IFR flight in accordance with 3.6.5.2.2.

3.6.5.2.2 If in instrument meteorological conditions or when the pilot of an IFR flight considers it inadvisable to complete the flight in accordance with 3.6.5.2.1 a), the aircraft shall:

- a) unless otherwise prescribed on the basis of regional air navigation agreement, in airspace where radar is not used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following the aircraft's failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the filed flight plan;
- b) in airspace where radar is used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 7 minutes following:
  - 1) the time the last assigned level or minimum flight altitude is reached; or
  - 2) the time the transponder is set to Code 7600; or
  - 3) the aircraft's failure to report its position over a compulsory reporting point;

Whichever is later, and thereafter adjust level and speed in accordance with the filed flight plan;

- c) when being radar vectored or having been directed by ATC to proceed offset using RNAV without a specified limit, rejoin the current flight plan route no later than the next significant point, taking into consideration the applicable minimum flight altitude;
- d) proceed according to the current flight plan route to the appropriate designated navigation aid or fix serving the destination aerodrome and, when required to ensure compliance with e) below, hold over this aid or fix until commencement of descent;
- e) commence descent from the navigation aid or fix specified in d) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival resulting from the current flight plan;
- f) complete a normal instrument approach procedure as specified for the designated navigation aid or fix; and
- g) land, if possible, within 30 minutes after the estimated time of arrival specified in e) or the last acknowledged expected approach time, whichever is later.

*Note 1 – The provision of air traffic control service to other flights operating in the airspace concerned will be based on the premise that an aircraft experiencing communication failure will comply with the rules in 3.6.5.2.2.*

*Note 2 – See also 5.1.2*

### **3.7 UNLAWFUL INTERFERENCE**

- 3.7.1 An aircraft which is being subjected to unlawful interference shall endeavour to notify the appropriate ATS unit of this fact, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the Air Traffic Service unit to give priority to the aircraft and to minimize conflict with other aircraft.

*Note 1 – Responsibility of ATS units in situations of unlawful interference is contained in MCAR 11.*

*Note 2 – Guidance material for use when unlawful interference occurs and the aircraft is unable to notify an ATS unit of this fact is contained in Attachment B to this MCAR.*

*Note 3 – Action to be taken by SSR-, ADS-B- and ADS-C equipped aircraft which are being subjected to unlawful interference is contained in MCAR 11, the PANS-ATM (Doc 4444) and the PANS-OPS (Doc 8168).*

*Note 4 – Action to be taken by CPDLC-equipped aircraft which are being subjected to unlawful interference is contained in MCAR 11, the PANS-ATM (Doc 4444), and guidance material on the subject is contained in the Manual of Air Traffic Services Data Link Applications (Doc 9694).*

- 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 Director unless considerations aboard the aircraft dictate otherwise.

*Note 1 – Requirements for State authorities with respect to aircraft on the ground that are subject to unlawful interference are contained in ICAO Annex 17, Chapter 5, 5.2.4*

*Note 2 – See 2.4 regarding the authority of the pilot-in-command of an aircraft.*

### **3.8 INTERCEPTION**

*Note – The word “interception” in this context does not include intercept and escort service provided, on request, to an aircraft in distress, in accordance with Volumes II and III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual (Doc 9731).*

- 3.8.1 Interception of civil aircraft shall be in compliance with the Article 3(d) of the Convention on International Civil Aviation.
- 3.8.2 The pilot-in-command of a civil aircraft, when intercepted, shall comply with the Standards in Appendix 2, Sections 2 and 3, interpreting and responding to visual signals as specified in Appendix 1, Section 2.

### 3.9 VMC VISIBILITY AND DISTANCE FROM CLOUD MINIMA

VMC visibility and distance from cloud minima are contained in Table 3-1.

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

Table 3-1 (see 4.1)

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

\*\* a) Category A and B aeroplanes may be operated in flight visibilities down to 3000 m, provided the appropriate ATS authority permits use of a flight visibility less than 5 km, and the circumstances are such, that the probability of encounters with other traffic is low, and the IAS is 140kt or less.

b) HELICOPTERS may be permitted to operate *in less than 1 500 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.

\*\*\*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 3-1.
- 4.2 Except when a clearance is obtained from an air traffic control unit, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or traffic pattern:
- a) when the ceiling is less than 450 m (1 500 ft); or
  - b) when the ground visibility is less than 5 km.
- 4.3 VFR flights between sunset and sunrise, or such other period between sunset and sunrise as may be prescribed by the Director, shall be operated in accordance with the conditions prescribed by the Director.
- 4.4 VFR flights shall not be operated:
- a) at night;
  - b) above FL 200;
  - c) at transonic or supersonic speeds
- 4.5 Authorization for VFR flights to operate above FL 290 shall not be granted in areas 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 Director, 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.
- Note – See also 3.1.2*
- 4.7 Except where otherwise indicated in air traffic control clearances or specified by the Director, VFR flights in level cruising flight when operated above 900 m (3 000 ft) from the ground or water shall be conducted at a cruising level appropriate to the track as specified in the tables of cruising levels in Appendix 3.
- 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 Director in accordance with 3.3.1.2 c) or d) 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.

*Note – See Notes following 3.6.5.1.*

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) when so required by 3.3.1.2, submit a flight plan to the appropriate air traffic services unit 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**

Aircraft shall be equipped with suitable instruments and with navigation equipment specified by the Director as appropriate for the route to be flown.

#### **5.1.2 Minimum levels**

a) An aircraft shall not, except when necessary for take-off and landing, be flown at a height less than 300 metres above the highest obstacle located within 8 kilometres of the aircraft in flight.

b) The Director may designate the lowest safe altitude for a specified route segment and publish notification of each designation in AIP or in NOTAM and an aircraft shall not be flown, except for purposes of take-off or landing, along a route segment at a height less than the altitude so designated for the route segment.

*Note 1 – The estimated position of the aircraft will take account of the navigational accuracy which can be achieved on the relevant route segment, having regard to the navigational facilities available on the ground and in the aircraft.*

*Note 2 – See also 3.1.2.*

*Note 3 – See also Maldives AIP GEN 3.3-2*

#### **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, if a flight plan was submitted, 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 authorized to employ cruise climb techniques, between two levels or above a level, selected from the table of cruising levels in Appendix 3.

### **5.3 RULES APPLICABLE TO IFR FLIGHTS OUTSIDE CONTROLLED AIRSPACE**

#### **5.3.1 Cruising levels**

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

*Note – This provision does not preclude the use of cruise climb techniques by aircraft in supersonic flight.*

#### **5.3.2 Communications**

An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the Director in accordance with 3.3.1.2 c) or d) 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.

*Note – See Notes following 3.6.5.1.*

#### **5.3.3 Position reports**

An IFR flight operating outside controlled airspace and required by the Director to:

- submit a flight plan,
- 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.

*Note – Aircraft electing to use the air traffic advisory service whilst operating IFR within specified advisory airspace are expected to comply with the provisions of 3.6, except that the flight plan and changes thereto are not subjected to clearances and that two-way communication will be maintained with the unit providing the air traffic advisory service.*

## APPENDIX I – SIGNALS

*(Note – See Chapter 3, 3.4 of this MCAR)*

### I. DISTRESS AND URGENCY SIGNALS

*Note 1 – None of the provisions in this section shall prevent the use, by an aircraft in distress, of any means at its disposal to attract attention, make known its position and obtain help.*

*Note 2 – For full details of telecommunication transmission procedures for the distress and urgency signals, see ICAO Annex 10, Volume II, Chapter 5.*

*Note 3 – For details of the search and rescue visual signals, see ICAO Annex 12.*

#### I.1. DISTRESS SIGNALS

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 signaling 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.

*Note – Article 41 of the ITU Radio Regulations (Nos. 3268, 3270 and 3271 refer) provides information on the alarm signals for actuating radiotelegraph and radiotelephone auto-alarm systems:*

3268 The radiotelegraph alarm signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. It may be transmitted by hand but its transmission by means of an automatic instrument is recommended.

3270 The radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone shall have a frequency of 2 200 Hz and the other a frequency of 1 300 Hz, the duration of each tone being 250 milliseconds.

3271 The radiotelephone alarm signal, when generated by automatic means, shall be sent continuously for a period of at least thirty seconds but not exceeding one minute; when generated by other means, the signal shall be sent as continuously as practicable over a period of approximately one minute.

## **I.2. URGENCY SIGNALS**

- I.2.1 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.
- I.2.2 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;
  - 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**

<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 pattern and to rock the aircraft each time it passes the intercepted aircraft.</i></p>	You have been intercepted, follow me.	<p>DAY or NIGHT – Rocking aircraft, flashing navigational lights at irregular intervals and following.</p> <p><i>Note – Additional action requires to be taken by intercepted aircraft is prescribed in Chapter 3, 3.8.</i></p>	Understood, will comply.
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>	You may proceed.	DAY or NIGHT – Rocking the aircraft.	Understood, will comply.
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>	Land at this aerodrome.	DAY or NIGHT – Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceed to land.	Understood, will comply.

## 2.2 SIGNALS INITIATED BY INTERCEPTED AIRCRAFT AND RESPONSES BY INTERCEPTING AIRCRAFT

<i>Series</i>	<i>INTERCEPTING Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTED 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 I 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 UNAUTHORIZED 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 will indicate to an unauthorized 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

Light	From Aerodrome Control to:		
	Aircraft in flight	Aircraft on the ground	
Directed towards aircraft concerned (see Figure A1-1)	Steady green	Cleared to land	Cleared for take-off
	Steady red	Give way to other aircraft and continue circling	Stop
	Series of green flashes	Return to landing*	Cleared to taxi
	Series of red flashes	Aerodrome unsafe, do not land	Taxi clear of landing area in use
	Series of white flashes	Land at this aerodrome and proceed to apron*	Return to starting point on the aerodrome
Red pyrotechnic	Notwithstanding any previous instructions, do not land for the time being		

\* Clearance to land and to taxi will be given in due course.

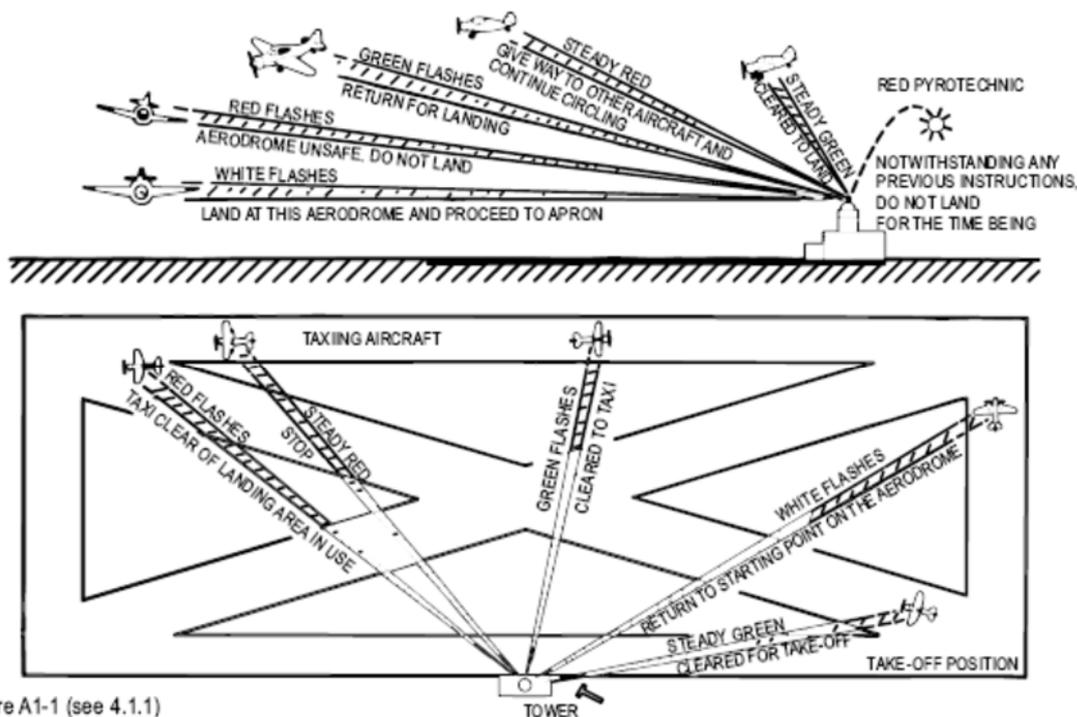


Figure A1-1 (see 4.1.1)

#### 4.1.2 Acknowledgement by an aircraft

- a) *When in flight:*
- 1) during the hours of daylight:
    - by rocking the aircraft's wings;

*Note – This signal should not be expected on the base and final legs of the approach.*

- 2) during the hours of darkness:
  - by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

b) *When on the ground:*

- 1) during the hours of daylight:
  - by moving the aircraft's ailerons or rudder;
- 2) during the hours of darkness:
  - by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

## 4.2 VISUAL GROUND SIGNALS

*Note – For details of visual ground aids, see ICAO Annex 14.*

### 4.2.1 Prohibition of landing

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 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.

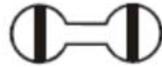


Figure A1-5

#### 4.2.4 Closed runways or taxiways

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.

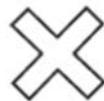


Figure A1-6

#### 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.

*Note – When used at night, the landing T is 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

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.

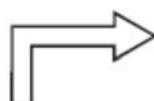


Figure A1-9

#### 4.2.7 Air traffic services reporting office

The letter C displayed vertically in black against a yellow background (Figure AI-10) indicates the location of the air traffic services reporting office.



Figure AI-10

#### 4.2.8 Glider flights in operation

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



Figure AI-11

## 5 MARSHALLING SIGNALS

### 5.1 FROM A SIGNALMAN TO AN AIRCRAFT

*Note 1 – These signals are designed for use by the signalman, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position:*

- a) for fixed-wing aircraft, on left side of aircraft, where best seen by the pilot; and*
- b) for helicopters, where the signalman can best be seen by the pilot.*

*Note 2 – The meaning of the relevant signals remains the same if bats, illuminated wands or torchlights are held.*

*Note 3 – The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).*

*Note 4 – Signals marked with an asterisk (\*) are designed for use to hovering helicopters.*

*Note 5 – References to wands may also be read to refer to daylight-fluorescent table-tennis bats or gloves (daytime only).*

*Note 6 – References to the signalman may also be read to refer to marshaller.*

- 5.1.1 Prior to using the following signals, the signalman 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.

*Note – The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.*

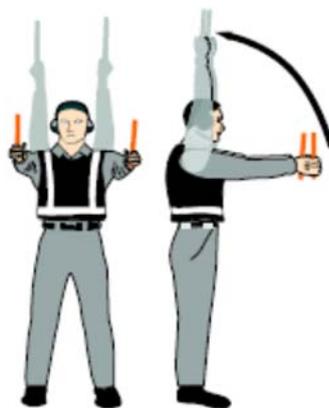
**1. Wingwalker/guide**



Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.

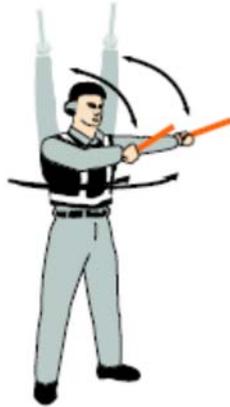
*Note – This signal provides an indication by a person positioned at the aircraft wing tip, to the pilot/ marshaller/push-back operator, that the aircraft movement on/off a parking position would be unobstructed.*

**2. Identify gate**



Raise fully extended arms straight above head with wands pointing up.

**3. Proceed to next signalman 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 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)**



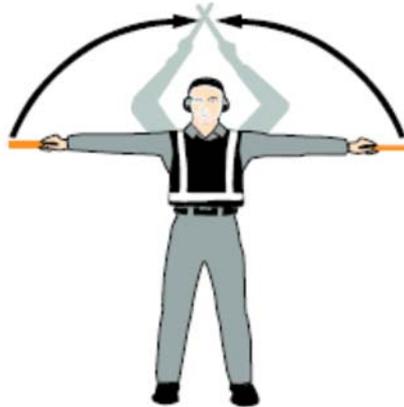
With right arm and wand extended at a 90-degree angle to body, make “come ahead” signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.

**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.

**7. a). Set brakes**



Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. **Do not** move until receipt of “thumbs up” acknowledgement from flight crew.

**7. b). Release brakes**



Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. **Do not** move until receipt of “thumbs up” acknowledgement from flight crew.

**8. a). Chocks inserted**



With arms and wands fully extended above head, move wands inward in a “jabbing” motion until wands touch. **Ensure** acknowledgement is received from flight crew.

8. b). Chocks removed



With arms and wands fully extended above head, move wands outward in a “jabbing” motion. **Do not** remove chocks until authorized 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



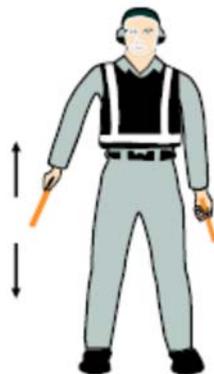
Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.

**11. Slow down**



Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.

**12. Slow down engine(s) on indicated side**



With arms down and wands toward ground, wave either *right* or *left* wand up and down indicating engine(s) on *left* or *right* side respectively should be slowed down.

**13. Move back**



With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6 a) or 6 b).

**14. a). Turns while backing (for tail to starboard)**



Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.

**14. b). Turns while backing (for tail to port)**



Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.

**15. Affirmative/all clear**



Raise right arm to head level with wand pointing up or display hand with “thumbs up”; left arm remains at side by knee.

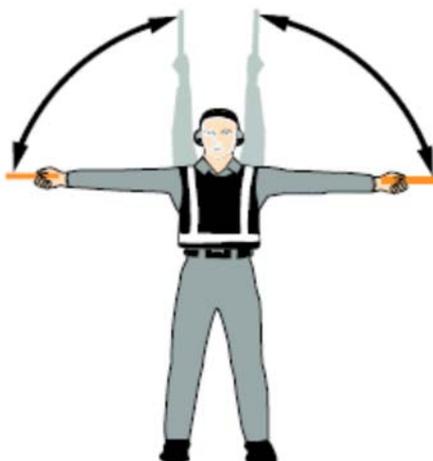
*Note.— This signal is also used as a technical/ servicing communication signal.*

**\*16. Hover**



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

**\*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.

**\*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.

**\*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.

**\*19. b). Move horizontally right (from pilot's point of view)**



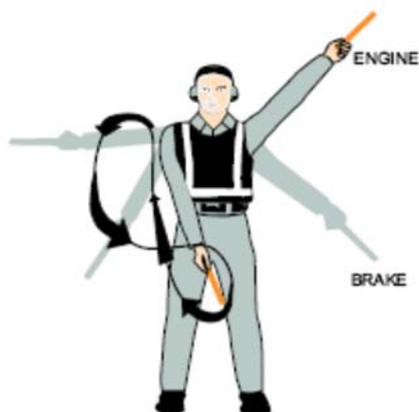
Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.

**\*20. Land**



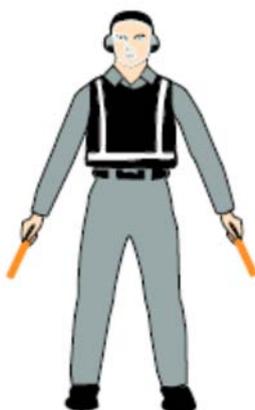
Cross arms with wands downwards and in front of body.

## 21. Fire



Move right-hand wand in a “fanning” motion from shoulder to knee, while at the same time pointing with left-hand wand to area of fire.

## 22. Hold position/stand by



Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.

## 23. Dispatch aircraft



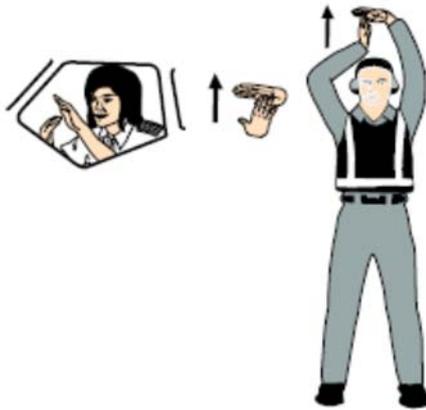
Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.

**24. Do not touch controls (technical/servicing communication signal)**



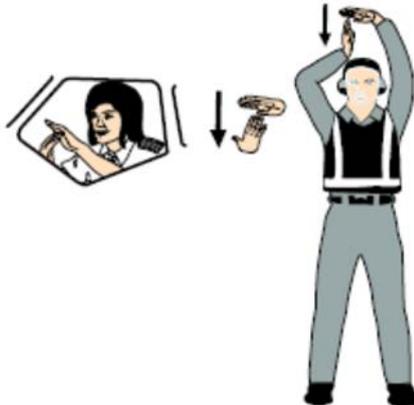
Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.

**25. 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.

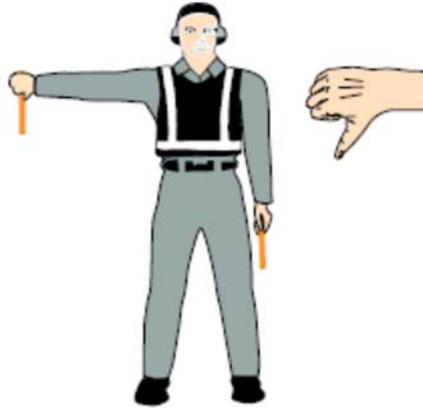
**26. Disconnect power (technical/servicing communication signal)**



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 authorized by flight crew. At night, illuminated wands can also be used to form the “T” above head.

**27. 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.

**28. Establish communication via interphone (technical/servicing communication signal)**



Extend both arms at 90 degrees from body and move hands to cup both ears.

**29. Open/close stairs (technical/servicing communication signal)**



With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.

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

## **5.2 FROM THE PILOT OF AN AIRCRAFT TO A SIGNALMAN**

*Note 1 – These signals are designed for use by a pilot in the cockpit with hands plainly visible to the signalman, and illuminated as necessary to facilitate observation by the signalman.*

*Note 2 – The aircraft engines are numbered in relation to the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).*

### **5.2.1. Brakes**

*Note – The moment the fist is clenched or the fingers are extended indicates, respectively, the moment of brake engagement or release.*

- 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.

### **5.2.2. 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.

### **5.2.3. Ready to start engine(s)**

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

*Note – The technical/servicing communication signals are included in Appendix I to standardize the use of hand signals used to communicate to flight crews during the aircraft movement process that relate to servicing or handling functions.*

## **APPENDIX 2 – INTERCEPTION OF CIVIL AIRCRAFT**

*(Note – See Chapter 3, 3.8 of this MCAR)*

### **I. ACTION BY INTERCEPTED AIRCRAFT**

- I.1 An aircraft which is intercepted by another aircraft shall immediately:
- a) 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.
- I.2 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.
- I.3 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.

## 2. RADIO-COMMUNICATION DURING INTERCEPTION

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 A2-1 and transmitting each phrase twice:

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

Table A2-1

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".*

### APPENDIX 3 – TABLE OF CRUISING LEVELS

I. The cruising levels to be observed when so required by this MCAR are as follows:

Within Male’ FIR in accordance with conditions specified in the regional air navigation agreement, a vertical separation minimum (VSM) of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive:\*

TRACK**											
From 000 degrees to 179 degrees***						From 180 degrees to 359 degrees***					
IFR Flights Level			VFR Flights Level			IFR Flights Level			VFR Flights Level		
FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres
010	1 000	300	-	-	-	020	2 000	600	-	-	-
030	3 000	900	035	3 500	1 050	040	4 000	1 200	045	4 500	1 350
050	5 000	1 500	055	5 500	1 700	060	6 000	1 850	065	6 500	2 000
070	7 000	2 150	075	7 500	2 300	080	8 000	2 450	085	8 500	2 600
090	9 000	2 750	095	9 500	2 900	100	10 000	3 050	105	10 500	3 200
110	11 000	3 350	115	11 500	3 500	120	12 000	3 650	125	12 500	3 800
130	13 000	3 950	135	13 500	4 100	140	14 000	4 250	145	14 500	4 400
150	15 000	4 550	155	15 500	4 700	160	16 000	4 900	165	16 500	5 050
170	17 000	5 200	175	17 500	5 350	180	18 000	5 500	185	18 500	5 650
190	19 000	5 800	195	19 500	5 950	200	20 000	6 100	205	20 500	6 250
210	21 000	6 400	215	21 500	6 550	220	22 000	6 700	225	22 500	6 850
230	23 000	7 000	235	23 500	7 150	240	24 000	7 300	245	24 500	7 450
250	25 000	7 600	255	25 500	7 750	260	26 000	7 900	265	26 500	8 100
270	27 000	8 250	275	27 500	8 400	280	28 000	8 550	285	28 500	8 700
290	29 000	8 850				300	30 000	9 150			
310	31 000	9 450				320	32 000	9 750			
330	33 000	10 050				340	34 000	10 350			
350	35 000	10 650				360	36 000	10 950			
370	37 000	11 300				380	38 000	11 600			
390	39 000	11 900				400	40 000	12 200			
410	41 000	12 500				430	43 000	13 100			
450	45 000	13 700				470	47 000	14 350			
490	49 000	14 950				510	51 000	15 550			
etc.	etc.	etc.				etc.	etc.	etc.			

\* Except when, on the basis of regional air navigation agreements, a modified table of cruising levels based on a nominal vertical separation minimum of 1 000 ft (300 m) is prescribed for use, under specified conditions, by aircraft operating above FL 410 within designated portions of the airspace.

\*\* 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 appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

## APPENDIX 4 – UNMANNED FREE BALLOONS

*(Note – See Chapter 3, 3.1.9 of this MCAR)*

### I. CLASSIFICATION OF UNMANNED FREE BALLOONS

Unmanned free balloons shall be classified as:

- 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 centimeter; 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.

*Note 1 – The area density referred to in c) 3) is determined by dividing the total mass in grams of the payload package by the area in square centimeters of its smallest surface.*

*Note 2 – See Figure A4-1*

### 2. GENERAL OPERATING RULES

- 2.1 An unmanned free balloon shall not be operated without appropriate authorization 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 appropriate authority, shall not be operated across the territory of another State without appropriate authorization from the other State concerned.
- 2.3 The authorization 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 authorization 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 not associated with the operation.
- 2.6 A heavy unmanned free balloon shall not be operated over the high seas without prior coordination with the appropriate ATS authority.

### **3. OPERATING LIMITATIONS AND EQUIPMENT REQUIREMENTS**

- 3.1 A heavy unmanned free balloon shall not be operated without authorization from the appropriate ATS 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;

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

- 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.

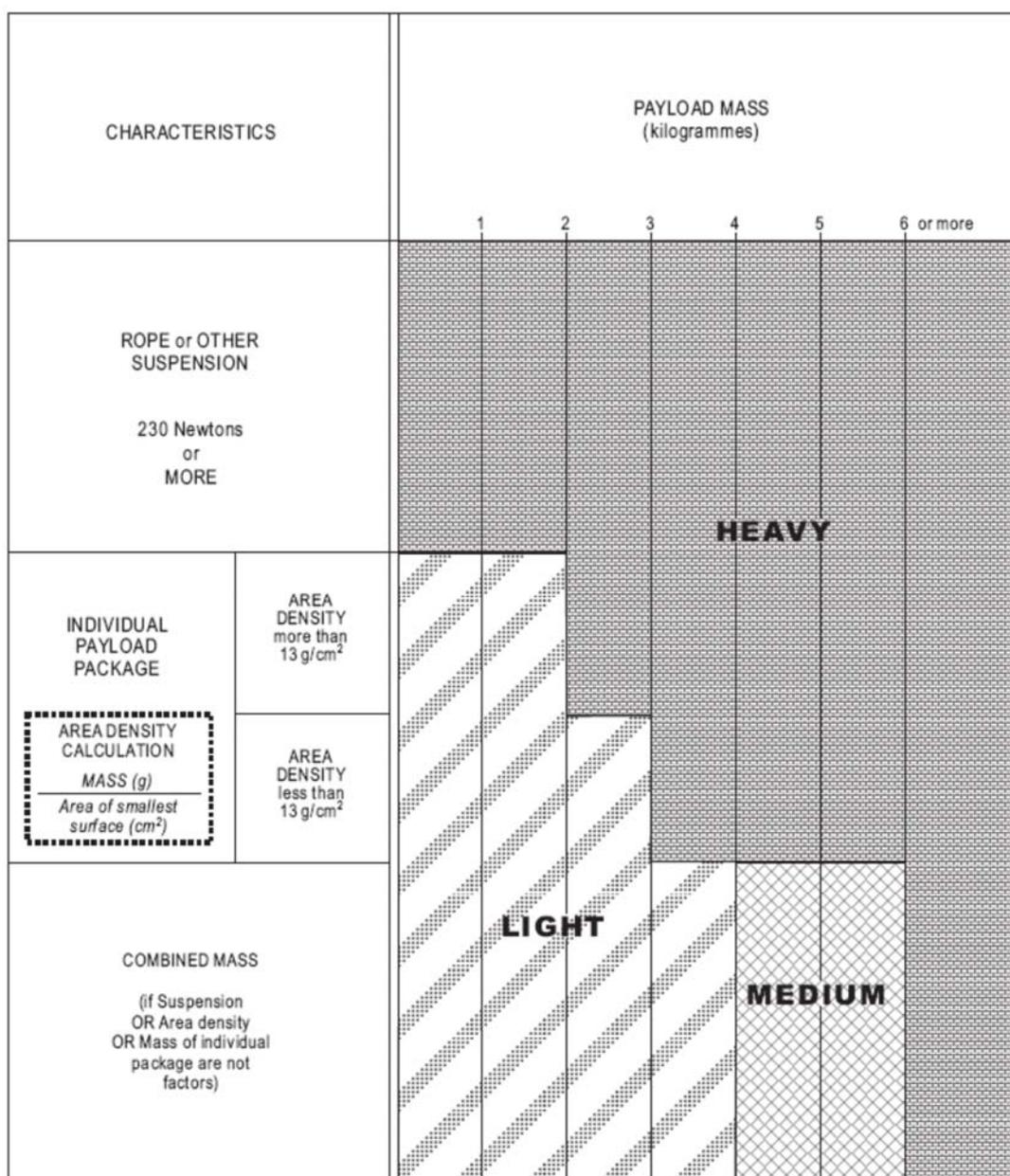


Figure A4-1. Classification of unmanned free balloons

- 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 between sunset and sunrise or such other period between sunset and sunrise (corrected to the altitude of operation) as may be prescribed by the appropriate ATS 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 between sunrise and sunset 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**

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 unauthorized 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;

*Note – If the operation consists of continuous launchings, the time to be included is 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.

*Note.— If there is to be more than one location of impact/recovery, each location is to 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 is 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 5.1.2 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 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) pressurealtitude 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 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.

## **ATTACHMENT A – INTERCEPTION OF CIVIL AIRCRAFT**

*(Note – See Chapter 3, 3.8 of this MCAR and associated Note)*

*Note – In the interest of completeness, the substance of the provisions in Appendix 2 to the MCAR is incorporated in this Attachment.*

In accordance with Article 3 d) of the Convention on International Civil Aviation the Contracting States of ICAO “undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft”. As interceptions of civil aircraft are, in all cases, potentially hazardous, the Council of ICAO has formulated the following special recommendations which Contracting States are urged to implement through appropriate regulatory and administrative action. The uniform application by all concerned is considered essential in the interest of safety of civil aircraft and their occupants. For this reason the Council of ICAO invites Contracting States to notify ICAO of any differences which may exist between their national regulations or practices and the special recommendations hereunder.

### **I. GENERAL**

- I.1 Interception of civil aircraft should be avoided and should be undertaken only as a last resort. If undertaken, the interception should be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome. Practice interception of civil aircraft is not to be undertaken.
- I.2 To eliminate or reduce the need for interception of civil aircraft, it is important that:
  - a) all possible efforts be made by intercept control units to secure identification of any aircraft which may be a civil aircraft, and to issue any necessary instructions or advice to such aircraft, through the appropriate air traffic services units. To this end, it is essential that means of rapid and reliable communications between intercept control units and air traffic services units be established and that agreements be formulated concerning exchanges of information between such units on the movements of civil aircraft, in accordance with the provisions of ICAO Annex 11;
  - b) areas prohibited to all civil flights and areas in which civil flight is not permitted without special authorization by the State be clearly promulgated in Aeronautical Information Publications (AIP) in accordance with the provisions of ICAO Annex 15, together with the risk, if any, of interception in the event of penetration of such areas. When delineating such areas in close proximity to promulgated ATS routes, or other frequently used tracks, States should take into account the availability and overall systems accuracy of the navigation systems to be used by civil aircraft and their ability to remain clear of the delineated areas;

- c) the establishment of additional navigation aids be considered where necessary to ensure that civil aircraft are able safely to circumnavigate prohibited or, as required, restricted areas.

I.3 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure coordinated actions by the pilots and ground units concerned. To this end, it is essential that Contracting States take steps to ensure that:

- a) all pilots of civil aircraft be made fully aware of the actions to be taken by them and the visual signals to be used, as specified in Chapter 3 and Appendix I of this MCAR;
- b) operators or pilots-in-command of civil aircraft implement the provisions in ICAO Annex 6, Parts I, II and III, regarding the capability of aircraft to communicate on 121.5 MHz and the availability of interception procedures and visual signals on board aircraft;
- c) all air traffic services personnel be made fully aware of the actions to be taken by them in accordance with the provisions of ICAO Annex II, Chapter 2, and the PANS-ATM (Doc 4444);
- d) all pilots-in-command of intercepting aircraft be made aware of the general performance limitations of civil aircraft and of the possibility that intercepted civil aircraft may be in a state of emergency due to technical difficulties or unlawful interference;
- e) clear and unambiguous instructions be issued to intercept control units and to pilots-in-command of potential intercepting aircraft, covering interception manoeuvres, guidance of intercepted aircraft, action by intercepted aircraft, air-to-air visual signals, radio communication with intercepted aircraft, and the need to refrain from resorting to the use of weapons;

*Note – See paragraphs 3 to 8.*

- f) intercept control units and intercepting aircraft be provided with radiotelephony equipment compatible with the technical specifications of ICAO Annex 10, Volume I, so as to enable them to communicate with intercepted aircraft on the emergency frequency 121.5 MHz;
- g) secondary surveillance radar and/or ADS-B facilities be made available to the extent possible to permit intercept control units to identify civil aircraft in areas where they might otherwise be intercepted. Such facilities should permit recognition of aircraft identity and immediate recognition of any emergency or urgency conditions.

## **2. INTERCEPTION MANOEUVRES**

2.1 A standard method should be established for the manoeuvring of aircraft intercepting a civil aircraft in order to avoid any hazard for the intercepted aircraft. Such method should take due account of the performance limitations of civil aircraft, the need to avoid flying in such proximity to the intercepted aircraft that a collision hazard may be created and the need to avoid crossing the aircraft's flight path or to perform any other manoeuvre in such a manner that the wake turbulence may be hazardous, particularly if the intercepted aircraft is a light aircraft.

2.2 An aircraft equipped with an airborne collision avoidance system (ACAS), which is being intercepted, may perceive the interceptor as a collision threat and thus initiate an avoidance manoeuvre in response to an ACAS resolution advisory. Such a manoeuvre might be misinterpreted by the interceptor as an indication of unfriendly intentions. It is important, therefore, that pilots of intercepting aircraft equipped with a secondary surveillance radar (SSR) transponder suppress the transmission of pressure-altitude information (in Mode C replies or in the AC field of Mode S replies) within a range of at least 37 km (20 NM) of the aircraft being intercepted. This prevents the ACAS in the intercepted aircraft from using resolution advisories in respect of the interceptor, while the ACAS traffic advisory information will remain available.

2.3 Manoeuvres for visual identification

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

### *Phase I*

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

### *Phase II*

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

### *Phase III*

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

#### 2.4 Manoeuvres for navigational guidance

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

2.4.2 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given. If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series I signal in Appendix I, Section 2 of this MCAR, are unsuccessful, other methods of signalling may be used for this purpose, including as a last resort the visual effect of the reheat/afterburner, provided that no hazard is created for the intercepted aircraft.

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

### 3. GUIDANCE OF AN INTERCEPTED AIRCRAFT

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

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

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

- a) the designated aerodrome is suitable for the safe landing of the aircraft type concerned, especially if the aerodrome is not normally used for civil air transport operations;
- b) the surrounding terrain is suitable for circling, approach and missed approach manoeuvres;

- c) the intercepted aircraft has sufficient fuel remaining to reach the aerodrome;
- d) if the intercepted aircraft is a civil transport aircraft, the designated aerodrome has a runway with a length equivalent to at least 2 500 m at mean sea level and a bearing strength sufficient to support the aircraft; and
- e) whenever possible, the designated aerodrome is one that is described in detail in the relevant Aeronautical Information Publication.

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

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

#### **4. ACTION BY INTERCEPTED AIRCRAFT**

The Standards in Appendix 2, Section 2 of this MCAR, specify as follows:

“1.1 An aircraft which is intercepted by another aircraft shall immediately:

- a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Appendix 1 of this MCAR;
- 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.

“1.2 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.

“1.3 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.”

## **5. AIR-TO-AIR VISUAL SIGNALS**

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

## **6. RADIO COMMUNICATION BETWEEN THE INTERCEPT CONTROL UNIT OR THE INTERCEPTING AIRCRAFT AND THE INTERCEPTED AIRCRAFT**

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

- a) first attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121.5 MHz, using the call signs "INTERCEPT CONTROL", "INTERCEPTOR (call sign)" and "INTERCEPTED AIRCRAFT" respectively; and
- b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the appropriate ATS unit(s).

6.2 If radio contact is established during interception but communication in a common language is not possible, attempts must be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table A-I and transmitting each phrase twice.

## **7. REFRAINING FROM THE USE OF WEAPONS**

*Note – In the unanimous adoption by the 25th Session (Extraordinary) of the ICAO Assembly on 10 May 1984 of Article 3 bis to the Convention on International Civil Aviation, Contracting States have recognized that "every State must refrain from resorting to the use of weapons against civil aircraft in flight".*

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

## **8. COORDINATION BETWEEN INTERCEPT CONTROL UNITS AND AIR TRAFFIC SERVICES UNITS**

It is essential that close coordination be maintained between an intercept control unit and the appropriate air traffic services unit during all phases of an interception of an

aircraft which is, or might be, a civil aircraft, in order that the air traffic services unit is kept fully informed of the developments and of the action required of the intercepted aircraft.

<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 (call sign) <sup>2</sup>	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	WILCO	<u>VILL</u> -KO	Understood Will comply
DESCEND	DEE- <u>SEND</u>	Descend for landing	CAN NOT	<u>KANN</u> NOTT	Unable to comply
YOU LAND	<u>YOU</u> <u>LAAND</u>	Land at this aerodrome	REPEAT	REE- <u>PEET</u>	Repeat your instruction
PROCEED	PRO- <u>SEED</u>	You may proceed	AM LOST	<u>AM</u> <u>LOSST</u>	Position unknown
			MAYDAY	<u>MAYDAY</u>	I am in distress
			HIJACK <sup>3</sup>	<u>HI</u> - <u>JACK</u>	I have been hijacked
			LAND (place name)	LAAND (place name)	I request to land at (place name)
			DESCEND	DEE- <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".*

## **ATTACHMENT B – UNLAWFUL INTERFERENCE**

### **1. GENERAL**

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

### **2. PROCEDURES**

2.1 If the pilot-in-command cannot proceed to an aerodrome in accordance with the rules in Chapter 3, 3.7.2, he/she should attempt to continue flying on the assigned track and at the assigned cruising level at least until able to notify an ATS unit or until within radar or ADS-B coverage.

2.2 When an aircraft subjected to an act of unlawful interference must depart from its assigned track or its assigned cruising level without being able to make radiotelephony contact with ATS, the pilot-in-command should, whenever possible:

- a) attempt to broadcast warnings on the VHF channel in use or the VHF emergency frequency, and other appropriate channels, unless considerations aboard the aircraft dictate otherwise. Other equipment such as on-board transponders and data links should also be used when it is advantageous to do so and circumstances permit; and
- b) proceed in accordance with applicable special procedures for in-flight contingencies, where such procedures have been established and promulgated in the *Regional Supplementary Procedures (Doc 7030)*; or
- c) if no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for IFR flight by:
  - 1) 150 m (500 ft) in an area where a vertical separation minimum of 300 m (1 000 ft) is applied; or
  - 2) 300 m (1 000 ft) in an area where a vertical separation minimum of 600 m (2 000 ft) is applied.

*Note – Action to be taken by an aircraft which is intercepted while being subject to an act of unlawful interference is prescribed in 3.8 of this MCAR.*