

**MINISTRY OF DEFENSE  
AERONAUTICS COMMAND**



**AIR TRAFFIC**

**ICA 100-12**

**RULES OF  
THE AIR**

**2016**

**MINISTRY OF DEFENSE  
AERONAUTICS COMMAND  
DEPARTMENT OF AIRSPACE CONTROL**



**AIR TRAFFIC**

**ICA 100-12**

**RULES OF  
THE AIR**



**MINISTRY OF DEFENSE  
AERONAUTICS COMMAND  
AIRSPACE CONTROL DEPARTMENT**

DECEA ORDER N° 204/DGCEA, NOVEMBER 8<sup>th</sup>, 2018

Approves the 2<sup>nd</sup> modification of  
ICA 100-12, Instruction about  
“Rules of the Air”.

**THE GENERAL DIRECTOR OF THE AIR TRAFFIC CONTROL  
DEPARTMENT**, in accordance with the provisions of the article 19<sup>th</sup>, subsection I of the  
Regimental Structure of the Aeronautical Command, approved by the decree n° 6.834, of  
April 30<sup>th</sup>, 2009, and considering the provisions of the article 10<sup>th</sup>, subsection IV, of DECEA’s  
Regulation, approved by the Order n° 1.668/GC3, of September 16<sup>th</sup>, 2013, settles:

Art. 1<sup>st</sup> Approve the modification of ICA 100-12 “Rules of the Air” which with  
this one ceases.

Art. 2<sup>nd</sup> This instruction enters into force on the date of its publication.

Ten Brig Ar JEFFERSON DOMINGUES DE FREITAS  
General Director of DECEA

(Published in the BCA N° 212, of December 5<sup>th</sup>, 2018



**MINISTRY OF DEFENSE  
AERONAUTICS COMMAND  
AIRSPACE CONTROL DEPARTMENT**

DECEA ORDER No 227/DGCEA, OCTOBER 17<sup>th</sup>, 2016

Approves the reissue of ICA 100-12,  
Instruction about “Rules of the Air”.

**THE GENERAL DIRECTOR OF THE AIR TRAFFIC CONTROL DEPARTMENT**, in accordance with the provisions of the article 19<sup>th</sup>, subsection I of the Regimental Structure of the Aeronautical Command, approved by the decree n° 6.834, of April 30<sup>th</sup>, 2009, and considering the provisions of the article 10<sup>th</sup>, subsection IV, of DECEA’s Regulation, approved by the Order n° 1.668/GC3, of September 16<sup>th</sup>, 2013, settles:

Art. 1<sup>st</sup> Approve the reissue of ICA 100-12 “Rules of the Air” which with this one ceases.

Art. 2<sup>nd</sup> Assign the date of November 10<sup>th</sup> for the commencement of this publication.

Art. 3<sup>rd</sup> Revokes the following orders:

- DECEA, n° 112/SDOP, of 18/11/2013, published in the BCA n° 228, of 28/11/2013, which approved the reissuing of ICA 100-12/2013.

- DECEA, n° 82/SDOP, of 31/07/2014, published in the BCA n° 160, of 26/08/2014, which approved the modification of ICA 100-12/2013.

Ten Brig Ar CARLOS VUYK DE AQUINO  
General Director of DECEA

(Published in the BCA N° 182, of October 24<sup>th</sup>, 2016)

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## FOREWORD

This publication has been reedited, in order to incorporate the Amendment 45 to the Annex 2 of the International Civil Aviation Convention, which deals, basically, with:

- Observance to the Active Flight Plan;
- Deviations to the Active Flight Plan; and
- Request of changes to the Active Flight Plan

Additionally, the criteria of obligatoriness and exempt of Flight Plan presentation, as well as other requirements and procedures related to this formulary were removed from this publication, for being already contemplated in the ICA 100-11, "Flight Plan" and in the MCA 100-11, "Flight Plan Formularies Filling".

## 1 PRELIMINARY PROVISIONS

### 1.1 FINALITY

The present publication has the finality of regulation, in Brazil, the Rules of the Air provided in Annex 2 of the International Civil Aviation Convention.

### 1.2 AMBIT

The procedures hereby described, of an obligatory observance, are applied to the SISCEAB units and users of the airspace under Brazil's jurisdiction.

### 1.3 INTERNATIONAL RULES COMPLIANCE

The International Civil Aviation Convention (ICAC), signed in December 7<sup>th</sup>, 1944, in Chicago, was ratified through the Decree-Law n° 21.713, making official, therefore, the application of this Convention (and its Annexes) in Brazil.

1.3.1 The Article 38 of CACI provides that, in case of a Contracting State considers necessary to adopt differing regulations in any particular aspect of the international rules established shall present such difference.

1.3.2 Thus, the rules and procedures provided in this publication are adjusted to the Annex 2 of the International Civil Aviation Convention, excepting the differences published in the part GEN 1-7 of AIP-BRASIL.



## 2 DEFINITIONS AND ABBREVIATIONS

### 2.1 DEFINITIONS

The terms and expressions listed below, used in this Instruction, have the following meanings:

#### ADS-C AGREEMENT

A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to using ADS-C in the provision of air traffic services).

NOTE: The terms of the agreement will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.

#### ADVISORY ROUTE

A designated route along which air traffic advisory service is available.

#### AEROBATIC FLIGHT

Manoeuvres done intentionally with the aircraft that involves abrupt changes in an aircraft's altitude, abnormal flight attitudes or abnormal speed and acceleration variations.

#### AERODROME CONTROL SERVICE

Air traffic control service for aerodrome traffic.

#### AERODROME CONTROL TOWER

A unit established to provide air traffic control service to aerodrome traffic.

#### AERODROME TRAFFIC ZONE

An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

#### AERODROME TRAFFIC

All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

NOTE: An aircraft is in the vicinity of an aerodrome when it is in, entering or leaving an aerodrome traffic circuit.

#### AERODROME

A defined area on land or water (including any buildings, installations

and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

#### AERONAUTICAL INFORMATION PUBLICATION

A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

#### AERONAUTICAL STATION

A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.

#### AEROPLANE (AIRPLANE)

A power-driven, heavier-than-the air aircraft, deriving its lift chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

#### AIR TRAFFIC ADVISORY SERVICE

A service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans.

#### AIR TRAFFIC CONTROL CLEARANCE

Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

NOTE 1: For convenience, the term “AIR TRAFFIC CONTROL CLEARANCE” is frequently abbreviated to “CLEARANCE” when used in appropriate contexts.

NOTE 2: The abbreviated term “CLEARANCE” may be prefixed by the words “TAXI,” “TAKE-OFF,” “DEPARTURE,” “EN ROUTE,” “APPROACH” or “LANDING” to indicate the particular portion of flight to which the air traffic control clearance relates.

#### AIR TRAFFIC CONTROL SERVICE

A service provided for the purpose of:

- a) preventing collisions:
  - between aircraft ; and
  - on the manoeuvring area between aircraft and obstructions; and
- b) expediting and maintaining an orderly flow of air traffic.

#### AIR TRAFFIC CONTROL UNIT

A generic term meaning variously, area control center, approach control unit or aerodrome control tower.

#### AIR TRAFFIC SERVICE

A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

#### AIR TRAFFIC SERVICES REPORTING OFFICE

A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

#### AIR TRAFFIC SERVICES UNIT

A generic term meaning variously, air traffic control unit, flight information center or air traffic services reporting office.

#### AIR TRAFFIC

All aircraft in flight or operating on the manoeuvring area of an aerodrome.

#### AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS)

An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

#### AIRCRAFT

An aircraft is any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

#### AIRWAY

A control area or portion thereof established in the form of a corridor.

#### ALERTING SERVICE

A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

#### ALTERNATE AERODROME

An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing. Alternate aerodromes include the following:

## a) Take-off Alternate

An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

## b) En-route

An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en route.

## c) Destination Alternate

An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

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

## ALTITUDE

The vertical distance between a level, a point or an object measured from mean sea level.

## APPROACH CONTROL SERVICE

Air traffic control service for arriving or departing controlled flights.

## APPROACH CONTROL

A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

## APRON

A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fueling, parking or maintenance.

## AREA CONTROL CENTER

A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

## AREA CONTROL SERVICE

Air traffic control service for controlled flights in control areas.

## AREA NAVIGATION

A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation

aids or within the limits of the capability of self-contained aids, or a combination of these.

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

#### ATS ROUTE

A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

NOTE 1: The term “ATS route” is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.

NOTE 2: An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and, as determined by the appropriate ATS authority, the lowest safe altitude.

#### AUTOMATIC DEPENDENT SURVEILLANCE — BROADCAST (ADS-B)

A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

#### AUTOMATIC DEPENDENT SURVEILLANCE — CONTRACT (ADS-C)

A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

NOTE: The abbreviated term “ADS contract” is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode.

#### CEILING

The height above the ground or water of the base of the lowest layer of cloud below 6.000 meters (20.000 feet) covering more than half the sky.

#### CHANGE-OVER POINT

The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft.

NOTE: Change-over points are established to provide the optimum balance in respect of signal strength and quality between facilities at all levels to be used and to ensure a common source of azimuth guidance for all

aircraft operating along the same portion of a route segment.

#### CLEARANCE LIMIT

The point to which an aircraft is granted an air traffic control clearance.

#### CONTROL AREA

A controlled airspace extending upwards from a specified limit above the earth.

NOTE: The concept of Control Area covers, also, the airways and TMA.

#### CONTROL ZONE

A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

#### CONTROLLED AERODROME

An aerodrome at which air traffic control service is provided to aerodrome traffic.

NOTE: The term “controlled aerodrome” indicates that air traffic control service is provided to aerodrome traffic but does not necessarily imply that a control zone exists.

#### CONTROLLED FLIGHT

Any flight which is subject to an air traffic control clearance.

#### CRUISING LEVEL

A level maintained during a significant portion of a flight.

#### CURRENT FLIGHT PLAN

The flight plan, including changes, if any, brought about by subsequent clearances.

#### DANGER AREA

An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

#### ESTIMATED OFF-BLOCK TIME

The estimated time at which the aircraft will commence movement associated with departure.

## ESTIMATED TIME OF ARRIVAL

For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

## EXPECTED APPROACH TIME

The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing.

NOTE: The actual time of leaving the holding fix will depend upon the approach clearance.

## FILED FLIGHT PLAN

The flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.

## FLIGHT CREW MEMBER

A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

## FLIGHT INFORMATION REGION

An airspace of defined dimensions within which flight information service and alerting service are provided.

## FLIGHT INFORMATION SERVICE

A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

## FLIGHT LEVEL

A surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

NOTE 1: A pressure type altimeter calibrated in accordance with the Standard Atmosphere:

- a) altitude - when set to a QNH altimeter setting, will indicate altitude; (QNH)
- b) height - when set to a QFE altimeter setting, will indicate height above the QFE reference datum (QFE); and
- c) flight level - when set to a pressure of 1 013.2 hPa, may be used to

indicate flight levels (QNE).

NOTE 2: The terms “HEIGHT” and “ALTITUDE”, used in NOTE 1 above, indicate altimetric rather than geometric heights and altitudes.

#### FLIGHT PLAN

Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

#### GROUND VISIBILITY

Visibility at an aerodrome indicated by a certified observer or through automatic systems.

#### HEIGHT

The vertical distance of a level, a point, or an object considered as a point, measured from a specified datum.

#### IFR FLIGHT

A flight conducted in accordance with the instrument flight rules.

INSTRUMENT APPROACH OPERATION (NR) – Order n° 204/DGCEA, November 8<sup>th</sup>, 2018.

An approach and landing using instruments for the orientation of a navigation based in an approach procedure. There are two methods to execute the instrument approach operation:

- a) a two-dimensional instrument approach operation (2D): with the use of lateral navigation guidance only; and
- b) a three-dimensional instrument approach operation (3D): with the use of lateral and vertical navigation guidance.

NOTE: The lateral and vertical guidance can be provided by:

- a) a ground navaid; or
- b) navigation data generated by a computer through a navaid, satellite aids autonomous navigation systems or a combination of them.

NOTE: For convenience, the expression. “air traffic services unit” is abbreviated to “ATS unit” in this publication.

INSTRUMENT APPROACH PROCEDURES (NR) - Order n° 204/DGCEA, November 8<sup>th</sup>, 2018.

A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which



a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

- a) Non-precision approach (NPA). Instrument approach procedure created for a 2D Type A instrument approach;
- b) Approach procedure with vertical guidance (APV). Instrument approach procedure of a Performance-Based Navigation (PBN) created for the 3D Type A instrument approach operations; or
- c) Precision approach procedure (PA). Instrument approach procedure based in navigation systems (ILS, MLS, GLS e SBAS Cat I) created for the 3D Type A or B instrument approach operations.

NOTE: The instrument approach procedures must be classified based on the conceived operational minima, below which an approach operation must only be continued with the required visual reference, as follows:

Type A: Minimum Descent Height or Decision Height above 75 m (250ft); e

Type B: Decision Height below 75 m (250ft).

#### INSTRUMENT METEOROLOGICAL CONDITIONS

Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

#### LANDING AREA

That part of a movement area intended for the landing or take-off of aircraft.

#### LEVEL

A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

#### MANOEUVRING AREA

That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

#### MOVEMENT AREA

That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

#### OPERATOR

Person, organization or company engaged in or proposing to operate aircraft.

#### PILOT-IN-COMMAND

The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

#### PRESSURE ALTITUDE

Atmospheric pressure expressed in terms of altitude that correspond to this pressure in the standard atmosphere.

#### PROBLEMATIC USE OF PSYCHOACTIVE SUBSTANCES

The use of one or more psychoactive substances by aviation personnel in a way that:

- a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or
- b) causes or worsens an occupational, social, mental or physical problem or disorder.

#### PROHIBITED AREA

An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

#### PSYCHOACTIVE SUBSTANCES

Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

#### RADIOTELEPHONY

A form of radio communication primarily intended for the exchange of information in the form of speech.

#### REMOTELY CONTROLLED AIRCRAFT

Unmanned Aircraft which is controlled by a remote piloting station.

#### REMOTE PILOTING STATION

Component of the remotely controlled aircraft system that contains the equipment used by the pilot of a remotely controlled aircraft.

#### REPETITIVE FLIGHT PLAN

A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

## REPORTING POINT

A specified geographical location in relation to which the position of an aircraft can be reported.

## RESTRICTED AREA

An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

## RUNWAY

A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

## SAFETY-SENSITIVE PERSONNEL.

Persons who might endanger aviation safety if they perform their duties and functions improperly. These persons comprehend, among others, flight crew members, aircraft maintenance personnel and air traffic controllers.

## SIGNAL AREA

An area on an aerodrome used for the display of ground signals.

## SIGNIFICANT POINT

A specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes.

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

## SPECIAL VFR FLIGHT

A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

## TAXIING

Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing, but, for helicopters, including the movement over the surface of aerodromes, at low height and speed.

## TAXIWAY

A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

- a) Aircraft stand taxiway:
  - A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only;
- b) Apron taxiway:
  - A portion of a taxiway system located on an apron and intended to provide a through taxi-route across the apron; and
- c) Rapid exit taxiway:
  - A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

#### TERMINAL CONTROL AREA

A terminal control area is a Control Area normally established at the confluence of ATS Routes in the vicinity of one or more major aerodromes.

#### TOTAL ESTIMATED ELAPSED TIME

For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome.

#### TRACK

The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid), from 000° to 360°, clockwise.

#### TRAFFIC INFORMATION

Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

#### TRANSITION ALTITUDE

The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

#### UNMANNED FREE BALLOON

A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

NOTE: Unmanned free balloons are classified as heavy, medium or light in

accordance with specifications contained in Appendix B.

#### VFR FLIGHT

A flight conducted in accordance with the visual flight rules.

#### VISIBILITY IN FLIGHT

Visibility ahead of the cockpit of an aircraft in flight.

#### VISIBILITY

Visibility for aeronautical purposes is the greater of:

- a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background; or
- b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

NOTE: These definitions are applied to the observations of visibility provided by ATC units, the observations of prevailing and minimal visibility notified by METAR and SPECI, as well as the observations of visibility on the ground.

#### VISUAL METEOROLOGICAL CONDITIONS

Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

NOTE: The specified minima are contained in table 1.

#### 2.2 ABBREVIATIONS

ACAS	-	Airborne Collision Avoidance System
ADS-B	-	Automatic Dependent Surveillance – Broadcast
ADS-C	-	Automatic Dependent Surveillance – Contract
AFIS	-	Aerodrome Flight Information Service
AIP	-	Aeronautical Information Publication
AMSL	-	Above Mean Sea Level
ASC	-	Ascending or Ascend
ATC	-	Air Traffic Control
ATS	-	Air Traffic Service
ATZ	-	Aerodrome Traffic Zone
CINDACTA	-	Integrated Air Defense Center and Airspace
Control		
COM	-	Communication
COpM	-	Military Operation Center
CPDLC	-	Controller Pilot Data Link Communications
CRN	-	NOTAM Regional Center
CTA	-	Control Area
CTR	-	Control Zone

DA	-	Decision Altitude
DECEA	-	Airspace Control Department
FIR	-	Flight Information Region
FIS	-	Flight Information Service
ICA	-	Aeronautics Command Instruction
IFR	-	Instrument Flight Rules
ILS	-	Instrument Landing System
IMC	-	Instrument Meteorological Conditions
KM	-	Kilometer
KT	-	Knot
METAR	-	Meteorological Aerodrome Report
MHz	-	Megahertz
NM	-	Nautical Mile
NOTAM	-	Notice to Airmen
OACI	-	International Civil Aviation Organization
QFE	-	Query: Field Elevation
QNE	-	Query: Nautical Equivalent (1013.2hPa)
QNH	-	Query: Nautical Height
RCC	-	Rescue Coordination Center
RNAV	-	Area Navigation
ROTAER	-	Auxiliary Air Routes Manual
RPA	-	Remotely Piloted Aircraft
RVSM	-	Reduced Vertical Separation Minima
SAR	-	Search and Rescue
SELCAL	-	Selective Calling
SPECI	-	Special Meteorological Aerodrome Report
SRPV	-	Regional Flight Protection Service
SSR	-	Secondary Surveillance Radar
TMA	-	Terminal Area Control
TWR	-	Aerodrome Control Tower
UTC	-	Universal Time Coordinated
VFR	-	Visual Flight Rules
VMC	-	Visual Meteorological Conditions
VOR	-	VHF Omnidirectional Range

### 3 APPLICABILITY OF THE RULES OF THE AIR

#### 3.1 COMPETENT AUTHORITY

3.1.1 Fall within the competence of the General-Director of the Airspace Control Department:

- a) the establishment, modification or cancelling of conditioned airspaces of permanent character;
- b) the establishment or modification, in a temporary character and previously defined, of conditioned airspaces that implies or not in alteration of the routes and procedures of the Air Traffic Services, in the current publications, through SRPV and of the CINDACTA;
- c) suspension of the operations in the aerodrome due to meteorological conditions, interdiction and impracticability of the manoeuvring area, through ATC units; and
- d) fixation of the operational meteorological minima.

#### 3.2 TERRITORIAL APPLICABILITY

3.2.1 The Rules of the Air provided in this publication apply to:

- a) every aircraft that operates inside the airspace that extends over the national territory, including territorial Waters, except when complying with the dispositions of 3.2.2; and
- b) every Brazilian registered aircraft, wherever it is, not colliding with the rules of the overflown State and the current international rules, put into force by the International Civil Aviation Convention, held in Chicago in 1944.

3.2.2 The Article 12 of the International Civil Aviation Convention provides that the Rules of the Air must be complied, with no exception, over international waters. Therefore, if any procedure related to such international practices is provided in a form which is different than the national regulation, those international standards will be described in a specific publication, in order to be applied to the flights overseas.

#### 3.3 COMPLIANCE TO THE RULES OF THE AIR

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.

#### 3.4 RESPONSIBILITY FOR COMPLIANCE WITH THE RULES OF THE AIR

##### 3.4.1 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.

### 3.4.2 FLIGHT PLANNING

3.4.2.1 Prior to beginning a flight, the pilot-in-command of an aircraft must acknowledge all the necessary information for the planning of the flight.

3.4.2.2 The information necessary for the flight provided in 3.4.2.1 must include, at least an insightful evaluation of the following aspects:

- a) meteorological conditions (reports and updated weather forecasts) of the aerodromes involved and the route to be flown;
- b) calculation of the fuel necessary for the flight;
- c) alternative plan in case of a non-completion of the flight; and
- d) pertinent flight conditions provided in the Integrated Aeronautical Information Publication (IAIP) and ROTAER.

NOTE: The conditions in d) before refer to, for example, operating restrictions of the aerodromes involved, related to the nav aids functioning, approaching and landing, the airport infrastructure necessary for the proposed operation, the working times of the aerodromes and the ATS units, etc.

3.4.2.3 The ATS units will consider, by occasion of the Flight Plan reception, that the conditions verified by the pilot-in-command meet the requirements of the current regulation for the type of flight to be conducted.

### 3.5 AUTHORITY OF PILOT IN COMMAND

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

### 3.6 AIRCRAFT IN EMERGENCY

The aircraft in distress or urgency situation must use, by radiotelephony means, the corresponding message (signal) provided in the Appendix A and in MCA100-16 (Air Traffic Phraseology). The conditions for distress and urgency are defined as:

- a) Distress: a condition in which grave and imminent danger threatens, and immediate assistance is required; and

NOTE: The distress condition refers also to the emergency situation, when the aeronautical accident is inevitable.

- b) Urgency: condition in which the safety of aircraft or person on board is involved without requiring immediate assistance.

### 3.7 PROBLEMATIC USE OF PSYCHOACTIVE SUBSTANCES

No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any



psychoactive substance, by reason of which human performance is impaired. No such person shall engage in any kind of problematic use of substances.

## 4 GENERAL RULES

### 4.1 PROTECTION OF PERSONS AND PROPERTY

#### 4.1.1 NEGLIGENCE OR RECKLESS OPERATION OF AIRCRAFT

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

#### 4.1.2 MINIMUM HEIGHTS

Except when necessary for take-off or landing, or except by permission from the DECEA, 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 5.1.4 for minimum heights for VFR flights and 6.1.2 for minimum heights for IFR flights.

#### 4.1.3 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; or
- b) altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.

#### 4.1.4 DROPPING OR SPRAYING

Nothing shall be dropped or sprayed from an aircraft in flight except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

#### 4.1.5 TOWING

No aircraft or other object shall be towed by an aircraft, except in accordance with requirements prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

#### 4.1.6 PARACHUTE DESCENTS

Parachute descents, other than emergency descents, shall not be made except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

#### 4.1.7 AEROBATIC FLIGHT

No aircraft shall be flown acrobatically except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

#### 4.1.8 COMPETENT AUTHORITY

4.1.8.1 The competent authority to authorize and establish the conditions related to air traffic where the aerobatic flights, dropping or spraying, towing, parachute descents and formation flights are conducted in a controlled airspace is the SRPV or CINDACTA with jurisdiction over the area of the intended operation.

NOTE: The authorization given by SRPV or CINDACTA has the exclusive finality to grant the coordination and air traffic control, as well as flight safety, not being implied any authorization for the technical activity specifically for the operation.

4.1.8.2 Any operation mentioned in 4.1.8.1 must be previously authorized by the Unit Commander to which it is subjected, when in case of military aircraft, or by the competent ANAC unit, in case of a civil aircraft.

#### 4.1.9 PROHIBITED AND RESTRICTED AREAS

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

#### 4.1.10 FORMATION FLIGHTS

Aircraft shall not be flown in formation 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(ies). 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.

#### 4.1.11 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 B.

NOTE: The launching of an unmanned hot air balloon (i.e. balão junino) is conditioned to other current Brazilian regulations.

#### 4.1.12 REMOTELY PILOTED AIRCRAFT

The regulation about remotely piloted aircraft are contained in specific publications, edited by ANAC and DECEA.

### 4.2 AVOIDANCE OF COLLISIONS

4.2.1 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: The regulation about the use of ACAS is provided in specific DECEA regulation.

#### 4.2.2 PROXIMITY

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

#### 4.2.3 RIGHT-OF-WAY

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

4.2.3.1 An aircraft that is obliged by the following rules to keep out of the way of another shall avoid passing over, under or in front of the other unless it passes well clear and takes into account the effect of aircraft wake turbulence.

##### 4.2.3.2 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.

##### 4.2.3.3 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; and
- d) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.

#### 4.2.3.4 Overtaking

An overtaking aircraft is an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering its heading to the right. 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.

#### 4.2.3.5 Landing

4.2.3.5.1 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.

4.2.3.5.2 When two or more heavier-than-air aircraft are approaching an aerodrome for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the later 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. Nevertheless, power-driven heavier-than-air aircraft shall give way to gliders.

#### 4.2.3.5.3 Emergency landing

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

#### 4.2.3.6 Taking off

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

#### 4.2.3.7 Surface movement of aircraft

4.2.3.7.1 In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome the following shall apply:

- a) when two aircraft are approaching head on, or approximately so, each shall stop or where practicable alter its course to the right so as to keep well clear;
- b) when two aircraft are on a converging course, the one which has the other on its right shall give way; and
- c) an aircraft which is being overtaken by another aircraft shall have the right-of-way and the overtaking aircraft shall keep well clear of the other aircraft.

NOTE: For the description of an overtaking aircraft, see 4.2.3.4.

4.2.3.7.2 An aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless otherwise authorized by the TWR

4.2.3.7.3 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.

#### 4.2.4 LIGHTS TO BE DISPLAYED BY AIRCRAFT

NOTE 1: The procedures related to the lights to be displayed by aircraft are the ones provided by ANAC regulations.

NOTE 2: In the following context, an aircraft is understood to be operated when it is taxiing or being towed or is stopped temporarily during the course of taxiing or being towed.

4.2.4.1 From sunset to Sunrise or during any other period which may be prescribed by the appropriate authority 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.

4.2.4.2 From sunset to Sunrise or during any other period prescribed by the appropriate authority:

- 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.

NOTE: If suitably located on the aircraft, the navigation lights referred to in 4.2.4.1 b) may also meet the requirements of 4.2.4.2 b). Red anti-collision lights fitted to meet the requirements of 4.2.4.2 c) and d) provided they do not subject observers to harmful dazzle.

4.2.4.3 Except as provided in 4.2.4.5, all aircraft in flight and fitted with anti-collision lights to meet the requirement of 4.2.4.1 shall display such light also outside the period specified in 4.2.4.1.

4.2.4.4 Except as provided in 4.2.4.5, all aircraft operating on the movement area of an aerodrome and are fitted with red anti-collision lights shall display such lights also outside the period specified in 4.2.4.2.

4.2.4.5 A pilot shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of 4.2.3.2, 4.2.3.3, 4.2.3.4 and 4.2.3.5, if they do or likely do:

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

#### 4.2.5 SIMULATED INSTRUMENT FLIGHTS

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

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

#### 4.2.6 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;
- e) in a non-controlled aerodrome, proceed for a landing only when there is no other aircraft on the runway; and
- f) occupy the runway the minimum time necessary for the landing and take-off operation, avoiding getting hold of the runway for a period that causes prejudice to the other aircraft operations.

NOTE: Additional rules may apply in ATZs.

#### 4.2.7 WATER OPERATIONS

In addition to the provisions of 3.2.6.1 of this Annex, 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.

4.2.7.1 When two aircraft or an aircraft and a vessel are approaching one another and there is a risk of collision, the aircraft shall proceed with careful regard to existing circumstances and conditions including the limitations of the respective craft.

##### 4.2.7.1.1 Converging

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

##### 4.2.7.1.2 Approaching head-on

An aircraft approaching another aircraft or a vessel head-on, or approximately so, shall alter its heading to the right to keep well clear.

##### 4.2.7.1.3 Overtaking

The aircraft or vessel which is being overtaken has the right of way, and the one overtaking shall alter its heading to keep well clear.

##### 4.2.7.1.4 Landing and taking off

Aircraft landing on or taking off from the water shall, in so far as practicable, keep well clear of all vessels and avoid impeding their navigation.

#### 4.2.7.2 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 appropriate authority, 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 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 4.2.7.2 cannot, therefore, be applied in areas where the International Regulations for Preventing Collisions at Sea apply, e.g. on the high seas.

#### 4.3 FLIGHT PLANS



#### 4.3.1 SUBMISSION OF A FLIGHT PLAN

4.3.1.1 Information relative to an intended flight or portion of a flight, to be provided to ATS units, shall be in the form of a flight plan.

4.3.1.2 The criteria of obligatoriness and exempt of Flight Plan, as well as other requirements and procedures related to this formulary are provided in the ICA 100-11, "Flight Plan" and in the MCA 100-11, "Flight Plan Form Filling".

4.3.1.3 If the aircraft makes contact with an ATS unit, without submitting a Flight Plan until this moment, the referred unit must request its submitting.

4.3.1.3.1 When the ATS unit is the one in the destination aerodrome, the referred unit must request the ANAC code of the pilot-in-command and, at least, the flight origin information, such as: departure aerodrome and actual take-off time.

#### 4.3.2 CONTENTS OF A FLIGHT PLAN

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

- a) Aircraft identification;
- b) Flight rules and type of flight;
- c) Number and type(s) of aircraft and wake turbulence category;
- d) Equipment;
- e) Departure aerodrome;
- f) Estimated off-block time (see NOTE);
- g) Cruising speed(s);
- h) Cruising level(s);
- i) Route to be followed;
- j) Destination aerodrome and total estimated elapsed time;
- k) Alternate aerodrome(s);
- l) Fuel endurance;
- m) Total number of persons on board;
- n) Emergency and survival equipment; and
- o) Other information.

NOTE: 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.

#### 4.3.3 CHANGES TO A FLIGHT PLAN

All changes to a submitted flight plan shall be reported as soon as practicable to the appropriate air traffic services unit.

NOTE: 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 by radiotelephony.

#### 4.3.4 CLOSING A FLIGHT PLAN

4.3.4.1 The closing of a Flight Plan for a non-controlled aerodrome will occur automatically, reaching the total estimated elapsed time of the flight.

4.3.4.2 The closing of a Flight Plan for an ATS provided aerodrome, will occur with the landing on the arrival aerodrome, reported by the pilot in person, by telephone or radiotelephony, through an arrival information containing:

- a) Aircraft identification; and
- b) Time of arrival.

NOTE: If the arrival aerodrome is provided with a TWR, there is no obligation of such report.

4.3.4.2.1 If, by any reason, the arrival aerodrome is different from the declared in the Flight Plan, and the latter is provided with an ATC unit, the arrival report must contain:

- a) Aircraft identification;
- b) Departure aerodrome;
- c) Destination aerodrome (only in the case of a diversionary landing);  
and
- d) Time of arrival (except if the aerodrome is provided with TWR).

NOTE: The ATS unit must provide the forwarding of the information to the ATS unit of the destination aerodrome, as quickly as possible.

4.3.4.2.2 If, by any reason, the arrival aerodrome is different from the declared in the Flight Plan, and the latter is not provided with an ATC unit, the pilot must make the arrival report by any available communication means (radiotelephony of the aircraft or other, telephone, radio broadcasting, etc.) to an ATS unit, containing:

- a) Aircraft identification;
- b) Departure aerodrome;
- c) Destination aerodrome (only in the case of a diversionary landing);
- d) Arrival aerodrome; and

e) Time of arrival.

NOTE 1: Whenever an arrival report is required, failure to comply with these provisions may cause serious disruption in the ATS and incur great expense in carrying out unnecessary Search and Rescue operations (in accordance with the Art. 58 of Brazilian Code of Aeronautics) for the pilot.

NOTE 2: The ATS unit must provide the forwarding of the information to the ATS unit of the declared destination aerodrome, as quickly as possible.

#### 4.4 SIGNALS

4.4.1 Upon observing or receiving any of the signals given in Appendix A, aircraft shall take such actions as may be required by the interpretation of the signal given in that Appendix.

4.4.2 The signals of Appendix A 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.

4.4.3 A signalman shall be responsible for providing standard marshalling signals to aircraft in a clear and precise manner using the signals shown in the Chapter 3 of Appendix A.

4.4.4 No person shall guide an aircraft unless trained, qualified and approved by the appropriate authority to carry out the functions of a signalman.

4.4.5 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.

4.4.6 Daylight-fluorescent wands, table-tennis bats or gloves shall be used for all signaling by all participating ground staff during daylight hours. Illuminated wands shall be used at night or in low visibility.

#### 4.5 TIME

4.5.1 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.

4.5.2 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: The time check is obtained from an ATS unit.

4.5.3 Wherever time is utilized in the application of data link communications, it shall be accurate to within 1 second of UTC.

#### 4.6 AIR TRAFFIC CONTROL SERVICE

##### 4.6.1 AIR TRAFFIC CONTROL CLEARANCES

4.6.1.1 An ATC Clearance shall be obtained prior to operating in 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 ATC 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.

4.6.1.2 Whenever an aircraft has requested a clearance involving priority, a report explaining the necessary for such priority shall be submitted, if requested by the appropriate ATC unit.

4.6.1.3 An aircraft operated on a controlled aerodrome shall not taxi on the manoeuvring area without clearance from the aerodrome TWR and shall comply with any instructions given by that unit.

#### 4.6.1.4 Potential reclearance in flight

If prior to departure it is anticipated that depending on fuel endurance and subject to reclearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.

NOTE: The intent of this provision is to facilitate a reclearance to a revised destination, normally beyond the filed destination aerodrome.

### 4.6.2 ADHERENCE TO FLIGHT PLAN

4.6.2.1 Except as provided for in 4.6.2.7, an aircraft shall adhere to the current Flight Plan or the applicable portion of a current Flight Plan submitted for a controlled flight, under the tolerance of 4.6.2.2 to 4.6.2.5, 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 ATS unit shall be notified of the action taken and that this action has been taken under emergency authority.

4.6.2.2 Unless otherwise authorized by the appropriate ATS authority, or directed by the appropriate ATC unit, controlled flights shall, in so far as practicable:

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

4.6.2.3 Subject to overriding requirement in 4.6.2.2, an aircraft operating along an ATS route segment defined by reference to a VOR 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.

4.6.2.4 Deviation from the requirements in 4.6.2.2 shall be notified to the appropriate ATS unit.

#### 4.6.2.5 Inadvertent changes to the Current Flight Plan

4.6.2.5.1 In the event that a controlled flight inadvertently deviates from its current flight plan, the following actions 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) Deviation from Mach Number/Indicated Airspeed given by ATC: the appropriate ATS unit shall be informed immediately;
- c) Deviation from Mach Number/True Airspeed: if the Mach Number/average True Airspeed at cruising level varies or is expected to vary by plus or minus 0,02 Mach (5 per cent); or, additionally, plus or minus than 19 km/h (10 kt) of True Airspeed, from that given in the Flight Plan, the appropriate ATS unit shall be so informed; and
- d) Changes in time estimate: except where the ADS-C is activated and in an airspace that provide the conditions for an ADS-C service, if the time estimate for the next applicable reporting point, FIR boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 2 minutes from that notified to ATS, or such other period of time as 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 ATS unit.

4.6.2.5.2 Additionally, when an ADS agreement is in place, the ATS unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.

#### 4.6.2.6 Intended changes

Requests for Flight Plan changes shall include information as indicated hereunder:

- a) Change of cruising level:
  - Aircraft identification;
  - Requested new cruising level;
  - Mach Number/True Airspeed at this level; and
  - Revised time estimates (when applicable) at subsequent FIR boundaries.

- b) Mach Number/True Airspeed change:
  - Aircraft identification;
  - Requested Mach Number/True Airspeed;
- c) Change of route, 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;
- d) Change of route, 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 estimate(s);
  - Alternate aerodrome(s); and
  - Other pertinent information.

#### 4.6.2.7 Weather deterioration below 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) 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.

### 4.6.3 COMMUNICATIONS

4.6.3.1 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 ATC unit, except as may be prescribed by the appropriate ATS authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

NOTE: SELCAL or similar automatic signalling devices satisfy the requirement to maintain an air-ground voice communication watch.

#### 4.6.3.2 Communication failure

If a communication failure precludes compliance with 4.6.3.1, the aircraft shall comply with the voice communication failure procedures listed below. The aircraft shall attempt to establish communications with the appropriate ATC 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.

##### 4.6.3.2.1 If in VMC, 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 services unit; or
- b) if consider advisable, complete an IFR flight in accordance with 4.6.3.2.2.

##### 4.6.3.2.2 If in IMC or when the pilot of an IFR flight considers it inadvisable to complete the flight in accordance with 4.6.3.2.1 a), the aircraft shall:

- a) Maintain flight level, airspeed and route, according to the Current Flight Plan up to the clearance limit and, if it is not the destination aerodrome, continue the flight according to the Submitted Flight Plan, without infringing any appropriate minimum flight altitude;
- b) Proceed as in a) before to the significant point of the destination aerodrome and, when necessary to comply with the provisions of d), hold over this significant point to commence the descent;
- c) when being radar vectored or having been directed by ATC to proceed offset using area navigation (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) commence descent from the navigation aid or fix specified in b) 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, in case of the clearance limit is not the arrival aerodrome, according to a) described earlier.
- e) complete a normal instrument approach procedure as specified for the designated navigation aid or fix; and
- f) land, if possible, within 30 minutes after the estimated time of arrival specified in d), or the last acknowledged expected approach time,

whichever is later.

4.6.3.2.3 Whenever observed by the pilot-in-command that there is communication failure, but only with the reception, he/she will broadcast, blindly, the intended Manoeuvres, giving the ATC unit the sufficient time to comply with the performing of such manoeuvres.

#### 4.6.4 POSITION REPORT

Unless waived by the ATS unit, the controlled IFR and VFR flights shall notify to this unit, as promptly as feasible, the time and flight level at which they fly over each one of the designated compulsory reporting points, as well as any other necessary information. Likewise, position reports over additional reporting points shall be sent when requested by the appropriate ATS unit. If due to the lack of designated reporting points, the position reports will be made by fixed intervals, according to DECEA's specific regulations about Air Traffic Services, or specified by the ATS unit with jurisdiction over the area where the flight is being conducted.

#### 4.7 UNLAWFUL INTERFERENCE

4.7.1 An aircraft which is being subjected to unlawful interference shall endeavor 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 ATS unit to give priority to the aircraft and to minimize conflict with the aircraft.

NOTE 1: The ATS units will take all the possible actions to identify any indication of those acts and will promptly attend to the aircraft requests. The pertinent information for the safe conduction of the flight shall be maintained and the necessary measures will be taken to facilitate the conduction of all the phases of the flight.

NOTE 2: See specific DECEA publication about the procedures for the SISCEAB units in case of Unlawful Interference against Civil Aviation.

NOTE 3: Actions to be taken by ATS units in case of Unlawful Interference are contained in the specific DECEA publications about Air Traffic Services.

NOTE 4: Guidance material for use when unlawful interference occurs and the aircraft is unable to notify an ATS unit of this fact is contained in Appendix C.

4.7.2 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 appropriate authority unless considerations aboard the aircraft dictate otherwise.

#### 4.8 INTERCEPTION

4.8.1 Interception of civil aircraft shall be avoided and will only be conducted as a last resort. However, the Aeronautics Command reserves the right of intercepting any aircraft, by request of the Airspace Defense units or the authorities responsible for the Airspace Defense Missions.



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 of ICAO).

4.8.2 The procedures that must be followed by the intercepted aircraft and the interception methods are provided in Appendix D.

4.8.3 In specific DECEA publication that deals with Air Traffic Services provides the procedures shall be followed by the ATS units as soon as they take notice that an aircraft is being intercepted.

#### 4.9 VMC VISIBILITY AND DISTANCE FROM CLOUD MINIMA

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

Table 1

Airspace Class	B	C D E	FG	
			Above 900 m (3.000 ft) AMSL or above 300 m (1.000 ft) above terrain, whichever is the higher	Below 900 m (3.000 ft) AMSL or 300 m (1.000 ft) above terrain, whichever is the higher
Distance from Cloud	Clear of cloud	1.500 m horizontally 300 m (1.000 ft) vertically	1.500 m horizontally 300m vertically	Clear of cloud and with the surface in sight
Flight Visibility	8 km if at or above FL100	8 km if at or above FL100	8 km if at or above FL100	5 km
	5 km if below FL100	5 km if below FL100	5 km if below FL100	
Airspeed Limit	380 kt	250 kt IAS if below FL100		
		380 kt IAS if above FL100		

#### 4.10 NOTIFICATION OF SUSPECTION OF TRANSMISSIBLE DISEASE ONBOARD OR OTHER PUBLIC HEALTH RISKS

4.10.1 As soon as the crew of an aircraft en-route identifies, onboard, one or various suspected cases of a transmissible diseases, or other risks to public health, they must notify, immediately the ATS unit, to which the pilot is communicating, the following information

- a) aircraft identification;
- b) departure aerodrome;
- c) destination aerodrome;
- d) estimated time of arrival;

- e) persons on board;
- f) number of suspect cases onboard; and
- g) nature of the public health risk, if known.

4.10.2 The ATS unit, receiving the information of a pilot related to transmissible diseases, or other risks to public health on board, must notify, as promptly as possible, the ATS units of departure and arrival which, will inform the airport administration and aircraft operator.

NOTE 1: By giving information to the airport administration, the ATS units of departure and arrival must be alerted about the necessity of contacting the appropriate public health unit. It is forecast that the public health unit contacts the aircraft operator's representative, if applicable, for other coordinations regarding clinical details and preparation of the aerodrome. Depending on the communication facilities available for the aircraft operator representative, it may not be possible to communicate with the aircraft, until it is closer to its destination. Excluding the initial ATS report, it must be avoided, during the flight, the use of ATC communication channels for the above mentioned coordinations.

NOTE 2: The information to be provided to the appropriate units of the departure aerodrome is intended to prevent the possible spread of transmissible disease, or other risk to public health, through other aircraft departing from the same aerodrome.

## 5 VISUAL FLIGHT RULES

### 5.1 GENERAL CRITERIA

5.1.1 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 1.

5.1.2 Regardless of the dispositions provided in 5.1.1 before, the VFR flights will only be conducted if simultaneously and continuously comply with the following conditions:

- a) maintain ground or water reference, in a way that weather formations below the flight level does not obstruct more than half of the pilot's sight;
- b) flying below FL150; and
- c) flying with an airspeed according to table 1.

5.1.3 Except when a clearance is obtained from an ATC unit to conduct a Special VFR flight, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic 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.

NOTE: The ceiling shall be used as a meteorological standard to define the operability of an aerodrome (if VFR or IFR). (NR) – Order n° 204/DGCEA, November 8<sup>th</sup>, 2018.

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

- a) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height less than 300 m (1.000 ft) above the highest obstacle within a radius of 600 m from the aircraft; and
- b) elsewhere than as specified in 5.1.4 a), at a height less than 150 m (500 ft) above the ground or water.

5.1.5 When operated within classes B, C and D airspaces, aircraft shall have means to establish radiotelephony communication with the appropriate ATC unit.

5.1.6 It is forbidden the operation of aircraft without radio equipment or with it inoperative, in the aerodromes provided with TWR and AFIS, except the cases provided in ICA 100-37 (Air Traffic Services).

5.1.7 The aircraft in VFR flight within TMA or CTR shall not cross the paths of the instrument departure or arrival in conflicting altitudes, as well as not overflying the nav aids without clearance of the respective ATC unit.

5.1.8 VFR flights shall comply with the provisions of 4.6, when applicable:

- 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.

5.1.9 Whenever flying within Class E, F and G ATS airspaces, the VFR flights are not subjected to an ATC clearance, obtaining only the Flight Information Service and Alerting Services from the ATS units.

## 5.2 RESPONSIBILITY OF THE PILOT

It will be up to the pilot-in-command of an aircraft in VFR flight to provide its own separation regarding obstacles and other aircraft by the use of sight, except within the airspace class B, in which the separation between aircraft is responsibility of the ATC, should, however, be observed the dispositions of 4.2.1.

## 5.3 CONDITIONS FOR VFR FLIGHT CONDUCTION

NOTE: In addition to the conditions below, the requirements for VFR flight in aerodromes contained in specific DECEA publication must be observed.

### 5.3.1 DAYTIME

5.3.1.1 The departure, arrival and alternate aerodromes must be registered for daytime VFR operation.

5.3.1.2 The predominant meteorological conditions in the departure, arrival and alternate aerodromes, during the take-off and landing operation, must be equal or greater than the minima established for the VFR flight.

### 5.3.2 NIGHT TIME

5.3.2.1 The departure, arrival and alternate aerodromes must be registered for night time VFR operation.

5.3.2.2 In addition to the conditions prescribed in 5.3.1.2:

- a) The pilot shall hold an IFR license;
- b) The aircraft must be IFR rated;
- c) The aircraft must have a functioning VHF transceiver to establish two-way communications with the appropriate ATS units.

5.3.3 When entirely conducted within an ATZ, CTR or TMA, including its lateral projections, or even, when these airspaces are non-existent, and conducted within a radius of 27 NM (50 km) from the departure aerodrome, the requirements in 5.3.2.2 a) and b) will not be applied for VFR flights.

NOTE: Are included in this item, also, the adjacent ATZ, CTR and/or TMA.

## 5.4 CRUISING LEVELS

5.4.1 Except when authorized by the ATC unit, the VFR flights at cruising levels, when conducted above 900 m (3.000 ft) above land or water, will be done in a level appropriate with the track, according to the cruising level table, in the Appendix E.

5.4.2 The VFR cruising level, selected in accordance with 5.4.1, will be maintained by the aircraft as long as it satisfies the conditions established in 5.1.1. and 5.1.2.a), up to the aircraft to perform changes in the level and/or track in order to meet the conditions mentioned above, excepting the dispositions provided in 4.6.2.7.

### 5.5 VFR TO IFR FLIGHT CHANGES

An aircraft that is operating accordingly to the visual flight rules and wishes to adjust to the instrument flight rules shall:

- a) if submitted a Flight Plan, communicate the necessary changes that will be applied to the Current Flight Plan; or
- b) when required by item 4.3.1.2, submit a Flight Plan to the appropriate ATS unit and obtain the clearance prior to proceed IFR, when within a controlled airspace.

### 5.6 VFR FLIGHT OUTSIDE CONTROLLED AIRSPACE

The VFR flight that is conducted outside controlled airspaces, but within areas or along routes designated by DECEA and that is provided with functioning radio equipment, will maintain constant watch to the appropriate ATS unit frequency that provides the Flight Information Service and will report its position to this unit, whenever necessary or requested.

## 6 INSTRUMENT FLIGHT RULES

### 6.1 RULES APPLICABLE TO ALL IFR FLIGHTS

#### 6.1.1 AIRCRAFT EQUIPMENT

Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown.

#### 6.1.2 MINIMUM LEVELS

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

NOTE: It is responsibility of the pilot-in-command to calculate the minimum flight level for an IFR flight outside airway, according to the provisions of specific publication.

#### 6.1.3 CHANGE FROM IFR FLIGHT TO VFR FLIGHT

6.1.3.1 An aircraft electing to change the conduct of its flight from compliance with the instrument 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 the changes to be made to its current Flight Plan.

6.1.3.2 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.

6.1.3.3 In specific situations, in accordance with DECEA criteria, the pilot-in-command shall continue the flight under the instrument flight rules, although operating under visual flight conditions.

### 6.2 RULES APPLICABLE TO IFR FLIGHTS INSIDE CONTROLLED AIRSPACES

6.2.1 IFR flights shall comply with the provisions of 4.6, when operated in controlled airspace.

6.2.2 The IFR cruising levels within controlled airspace will be selected, according to the table in Appendix E except when another correlation of flight level and route is indicated in the AIP or in the ATC clearances.

### 6.3 RULES APPLICABLE TO IFR FLIGHT OUTSIDE CONTROLLED AIRSPACES

#### 6.3.1 CRUISING LEVELS

An IFR flight outside controlled airspace shall be flown at a cruising level appropriate to its track, as specified in Appendix E.

### 6.3.2 COMMUNICATIONS

An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the appropriate ATS authority shall maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the ATS unit providing flight information service.

### 6.3.3 POSITION REPORTS

An IFR flight operating outside controlled airspace shall report position as specified in 4.6.4 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 4.6, 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.

## 6.4 CONDITIONS FOR IFR FLIGHT CONDUCTION

NOTE: In addition to the conditions below, the requirements for IFR flight in aerodromes contained in specific DECEA publication must be observed.

### 6.4.1 DAYTIME:

- a) the departure, arrival and alternate aerodromes must be certified for the daytime IFR operation;
- b) if the departure aerodrome is not certified for IFR operation, the predominant weather conditions must be equal or greater than the VFR operation minima;

NOTE: In this situation, the flight can only depart in VFR condition.

- c) the predominant weather conditions in the departure aerodrome must be equal or greater than the IFR take-off operation minima; and
- d) the aircraft must have the conditions to establish two-way communication with the existing ATS units in the departure, arrival and alternate aerodromes, as well as the ones responsible for the airspaces to be overflown.

### 6.4.2 NIGHT TIME:

- a) the departure aerodrome must be certified for a night IFR operation; otherwise, the flight shall be commenced during daytime, meeting the requirements for a daytime IFR flight.
- b) The arrival and alternate aerodromes must be certified for night IFR operation; if the estimated time of arrival in the destination aerodrome occurs during daytime, it is only necessary that the



aerodrome is certified for IFR daytime operation. Identical criteria will be applied to the alternate aerodrome, if the estimated time over the latter (via destination aerodrome or deviation point) occurs in the daytime;

- c) the predominant weather conditions in the departure aerodrome must be equal to or greater than the IFR take-off operation minima; and
- d) the aircraft must have the conditions to establish two-way communication with the existing ATS units in the departure, arrival and alternate aerodromes, as well as the ones responsible for the airspaces to be overflown.

## 7 FINAL DISPOSITIONS

7.1 The suggestions for the continuous improvement of this publication shall be sent via the electronic addresses <http://publicacoes.decea.intraer/> or <http://publicacoes.decea.gov.br/>, following the specific link of the publication.

7.2 This publication may be acquired, by request:

- a) On the electronic address <http://www.pame.aer.mil.br/>, Aeronautical Publication; or
- b) by phone: (21) 2117-7294, 2117-7295 and 2117-7219 (fax).

7.3 The cases not provided in this publication will be submitted to His Excellency Head of the Subdepartment of Operations of DECEA.

## REFERENCES

BRASIL. Comando da Aeronáutica. Comando-Geral do Pessoal. Confecção, Controle e Numeração de Publicações Oficiais do Comando da Aeronáutica: NSCA 5-1. [Rio de Janeiro], 2011.

BRASIL. Comando da Aeronáutica. Departamento de Controle do Espaço Aéreo. Serviços de Tráfego Aéreo. ICA 100-37. [Rio de Janeiro], 2013.

ICAO. Annex 2 to the Convention on International Civil Aviation: Rules of the Air. [Montreal]: 10ed., July 2005.

## Appendix A – Signals

## 1 DISTRESS AND URGENCY SIGNALS

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.

1.1 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 signalling method consisting of the group SOS (. . . — — — . . . in the Morse Code);
- b) a radiotelephony distress signal consisting of the spoken word MAYDAY, three times in a row;
- c) rockets or shells throwing red lights, fired one at a time at short intervals; and
- d) a parachute flare showing a red light.

NOTE: Article 36 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:

- a) 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;
- b) 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; or
- c) 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.

1.2 URGENCY SIGNALS

1.2.1 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.

1.2.2 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 within sight:

- a) a signal made by radiotelephony or by any other signaling method consisting of the group XXX; or
- b) a radiotelephony urgency signal consisting of the spoken words PAN, PAN, three times in a row.

## 2 VISUAL GROUND SIGNALS

### 2.1 PROHIBITION OF LANDING

A horizontal red square panel with yellow diagonals (Figure 1), when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.



Figure 1

### 2.2 NEED FOR SPECIAL PRECAUTIONS WHILE APPROACHING OR LANDING

A horizontal red square panel with one yellow diagonal (Figure 2) 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 2

### 2.3 USE OF RUNWAYS AND TAXIWAYS

2.3.1 A horizontal White dumb-bell (Figure 3), when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

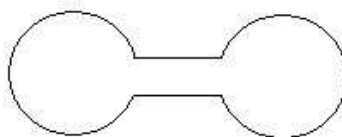


Figure 3

2.3.2 The same horizontal white dumb-bell as in 2.3.1, but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure 4), when displayed in a signal area indicates that aircraft are required to land and take off on runways only, but other manoeuvres need not to be confined to runways and taxiways.

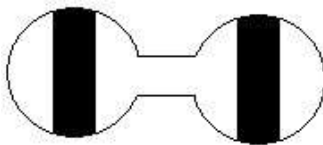


Figure 4

## 2.4 CLOSED RUNWAYS OR TAXIWAYS

Crosses of a single contrasting color, yellow or white (Figure 5), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

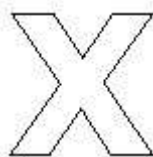


Figure 5

## 2.5 DIRECTIONS FOR LANDING OR TAKE-OFF

2.5.1 A horizontal white or orange landing “T” (Figure 6) 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.

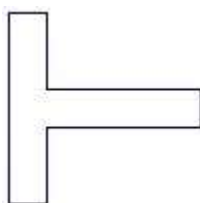


Figure 6

2.5.2 A set of two digits (Figure 7), 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 7

## 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 color (Figure 8) indicates that turns are to be made to the right before landing and after take-off.

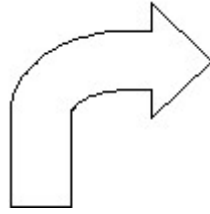


Figure 8

## 2.7 AIS REPORTING OFFICE

The letter “C” displayed vertically in black against a yellow background (Figure 9) indicates the location of the Air Traffic Services Reporting Office.



Figure 9

## 2.8 GLIDER FLIGHTS IN OPERATION

A double white cross displayed horizontally (Figure 10), in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

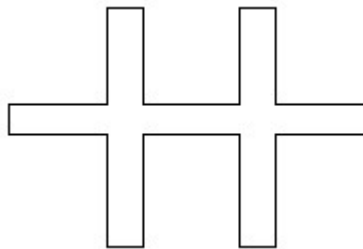


Figure 10

## 3 MARSHALLING SIGNALS

### 3.1 FROM A SIGNALMAN TO AN AIRCRAFT

3.1.1 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.

3.1.2 The meaning of the relevant signals remain the same if bats, illuminated wands or torchlights are held.

3.1.3 The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. N° 1 engine being the port outer engine).

NOTE 1: Signals marked with an asterisk (\*) are designed for use to hovering

helicopters.

NOTE 2: References to wands may also be read to refer to daylight-fluorescent table-tennis bats or gloves (daytime only).

NOTE 3: References to the signalman may also be read to refer to marshaller.

NOTE 4: The signals indicated in the figures 26 to 30 are designed for use to hovering helicopters.

### 3.1.4 SIGNALS DESCRIPTIONS


<p style="text-align: center;"><b>WINGWALKER/GUIDE</b></p> <p style="text-align: center;">Raise the right hand above head level with wand pointing up; move left-hand wand pointing down toward body.</p> <p>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.</p>	
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Figure 11

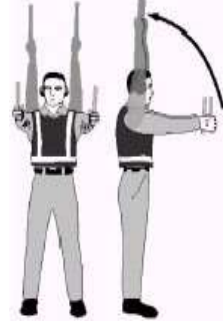
<p style="text-align: center;"><b>IDENTIFY GATE</b></p> <p style="text-align: center;">Raise fully extended arms straight above head with wands pointing up.</p>	
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Figure 12


<p style="text-align: center;"><b>PROCEED TO NEXT SIGNALMAN OR AS DIRECTED BY TOWER/GROUND CONTROL</b></p> <p style="text-align: center;">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.</p>	
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Figure 13



### STRAIGHT AHEAD

Bend extended arms at elbows and move wands up and down from chest height to head.



Figure 14

### 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.

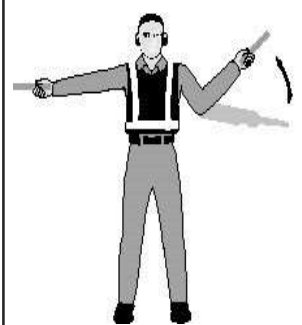


Figure 15/A

### 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.



Figure 15/B

### NORMAL STOP

Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.

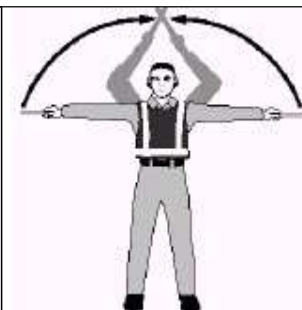


Figure 16/A


<p style="text-align: center;"><b>EMERGENCY STOP</b></p> <p style="text-align: center;">Abruptly extend arms and wands to top of head, crossing wands.</p>	
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Figure 16/B


<p style="text-align: center;"><b>SET BRAKES</b></p> <p style="text-align: center;">Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. <b>Do not</b> move until receipt of “thumbs up” acknowledgement from flight crew.</p>	
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Figure 17/A


<p style="text-align: center;"><b>RELEASE BRAKES</b></p> <p style="text-align: center;">Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. <b>Do not</b> move until receipt of “thumbs up” acknowledgement from flight crew.</p>	
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Figure 17/B


<p style="text-align: center;"><b>CHOCKS INSERTED</b></p> <p style="text-align: center;">With arms and wands fully extended above head, move wands inward in a “jabbing” motion until wands touch. <b>Ensure</b> acknowledgement is received from flight crew.</p>	
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Figure 18/A


<p style="text-align: center;"><b>CHOCKS REMOVED</b></p> <p>With arms and wands fully extended above head, move wands outward in a “jabbing” motion. <b>Do not</b> remove chocks until authorized by flight crew.</p>	
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Figure 18/B


<p style="text-align: center;"><b>START ENGINE(S)</b></p> <p>Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.</p>	
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Figure 19


<p style="text-align: center;"><b>CUT ENGINES</b></p> <p>Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.</p>	
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Figure 20


<p style="text-align: center;"><b>SLOW DOWN</b></p> <p>Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.</p>	
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Figure 21

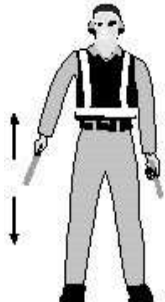
<p style="text-align: center;"><b>SLOW DOWN ENGINE(S) ON INDICATED SIDE</b></p> <p>With arms down and wands toward ground, wave either right or left wand up and down indicating engine(s) on left or right side respectively should be slowed down.</p>	
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Figure 22


<p style="text-align: center;"><b>MOVE BACK</b></p> <p>With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 16 a) or 16 b)</p>	
--	---

Figure 23


<p style="text-align: center;"><b>URNS WHILE BACKING (FOR TAIL TO STARBOARD)</b></p> <p>Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.</p>	
---	---

Figure 24/A


<p style="text-align: center;"><b>URNS WHILE BACKING (FOR TAIL TO PORT)</b></p> <p>Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.</p>	
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Figure 24/B

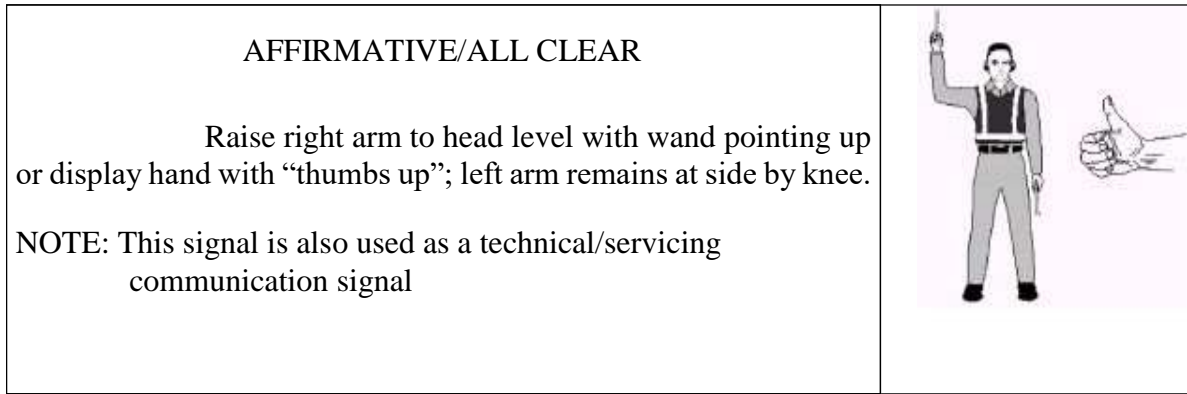


Figure 25

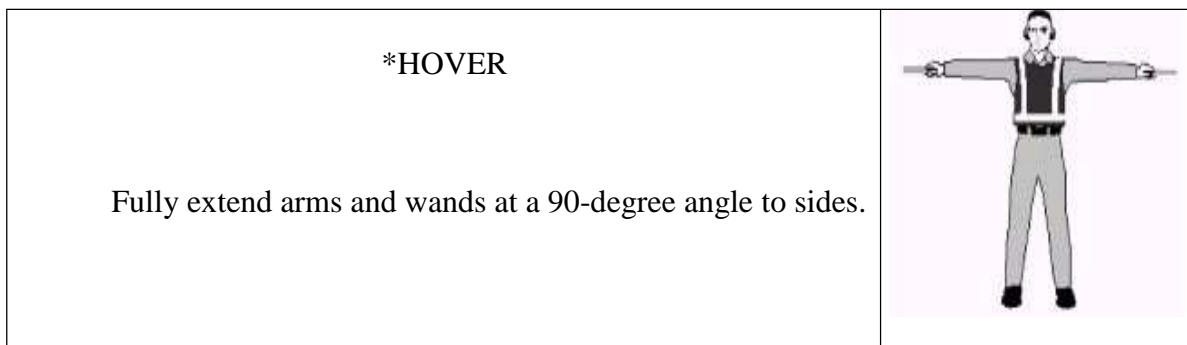


Figure 26

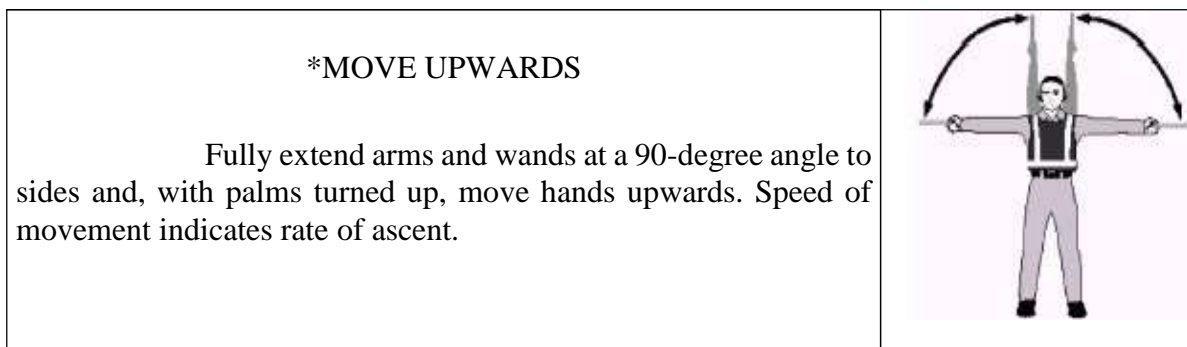


Figure 27

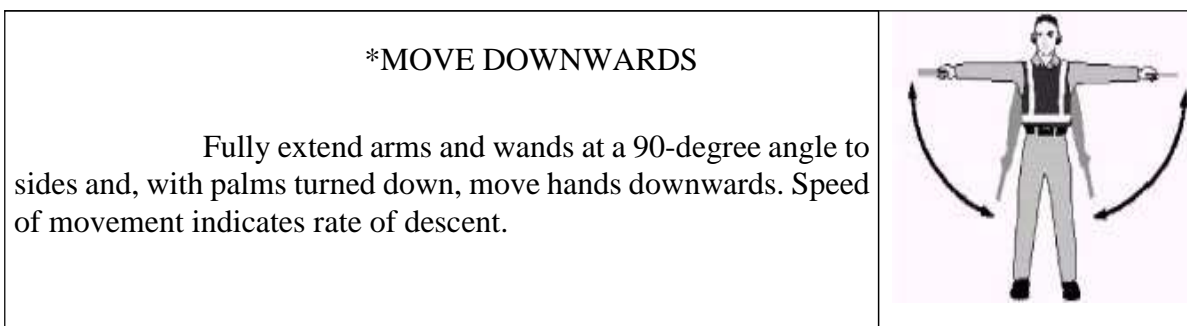


Figure 28

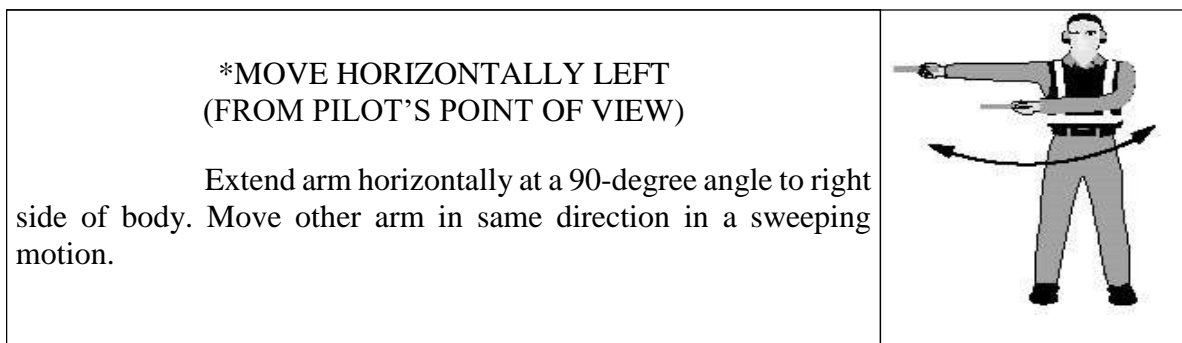


Figure 29/A

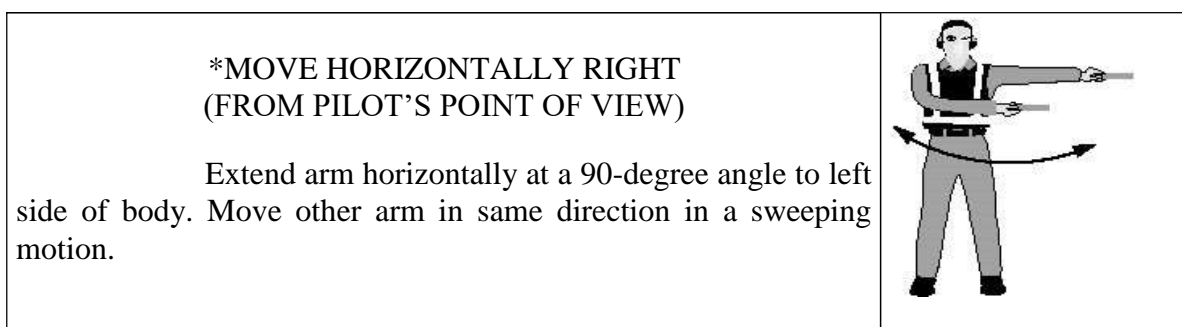


Figure 29/B

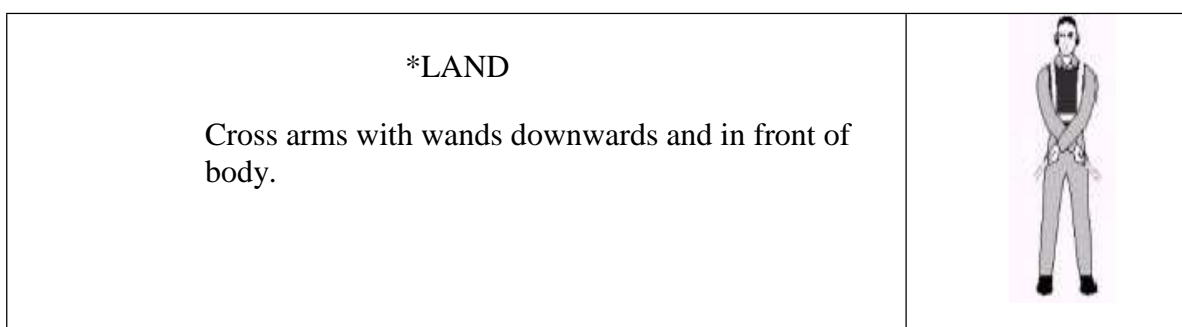


Figure 30

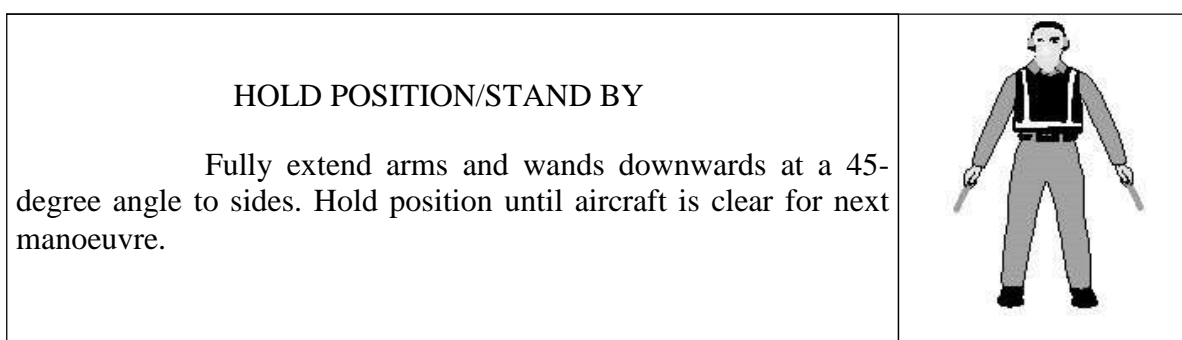


Figure 31


<p style="text-align: center;"><b>DISPATCH AIRCRAFT</b></p> <p>Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.</p>	
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Figure 32


<p style="text-align: center;"><b>DO NOT TOUCH CONTROLS (TECHNICAL/SERVICING COMMUNICATION SIGNAL)</b></p> <p>Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.</p>	
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Figure 33


<p style="text-align: center;"><b>CONNECT GROUND POWER (TECHNICAL/SERVICING COMMUNICATION SIGNAL)</b></p> <p>Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a “T”). At night, illuminated wands can also be used to form the “T” above head</p>	
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Figure 34


<p style="text-align: center;"><b>DISCONNECT POWER (TECHNICAL/SERVICING COMMUNICATION SIGNAL)</b></p> <p>Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a “T”); then move right hand away from the left. <b>Do not</b> disconnect power until authorized by flight crew. At night, illuminated wands can also be used to form the “T” above head.</p>	
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Figure 35

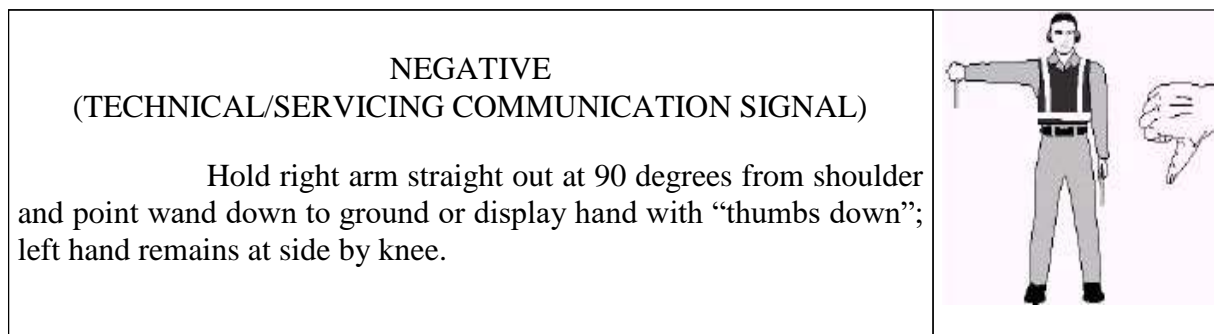


Figure 36

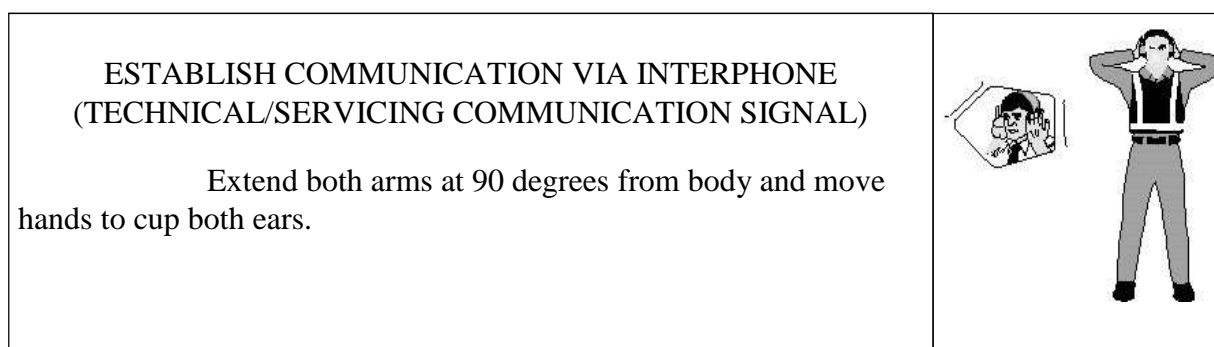


Figure 37

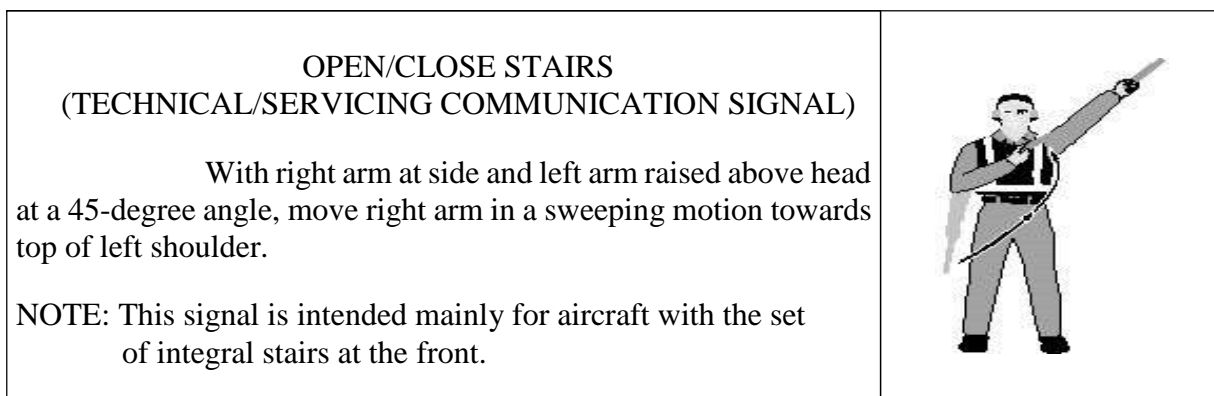


Figure 38

### 3.2 FROM THE PILOT OF AN AIRCRAFT TO A SIGNALMAN

3.2.1 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 the observation by the signalman.

3.2.2 The aircraft engines are numbered in relation to the signalman facing the aircraft, from right to left (i.e. N° 1 engine being the port outer engine).

#### 3.2.3 BRAKES

NOTE: The moment the fist is clenched or the fingers are extended indicates, respectively the moment of brake engagement or release.



### 3.2.3.1 Brakes engaged

Raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.

### 3.2.3.2 Brakes released

Raise arm, with fist clenched, horizontally in front of face, then extend fingers.

### 3.2.4 CHOCKS

#### 3.2.4.1 Insert chocks

Arms extended, palms outwards, move hands inwards to cross in front of face.

#### 3.2.4.2 Remove chocks

Hands crossed in front of face, palms outwards, move arms outwards.

### 3.2.5 READY TO START ENGINE(S)

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

## 3.3 TECHNICAL/SERVICING COMMUNICATION SIGNALS

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

3.3.2 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 this publication 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.

## 4 STANDARD EMERGENCY HAND SIGNALS

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

NOTE: In order to communicate more effectively with the cabin crew, emergency hand signals may be given by ARFF firefighters from other positions.

### 4.1 RECOMMENDED EVACUATION

Evacuation recommended based on ARFF and incident commander's assessment of external situation (Figure 39).

Arm extended from body and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body.

Night — same with wands.



Figure 39

#### 4.2 RECOMMENDED STOP

Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress (Figure 40).

Arms in front of head, crossed at wrists.

Night — same with wands



Figure 40

#### 4.3 EMERGENCY CONTAINED

No outside evidence of dangerous conditions or “all clear.” (Figure 41).

Arms extended outward and down at a 45-degree angle. Arms moved inward below waistline simultaneously until wrists crossed, then extended outward to starting position (umpire's “safe” signal).

Night — same with wands.



Figure 41

#### 4.4 FIRE

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

Night — same with wands

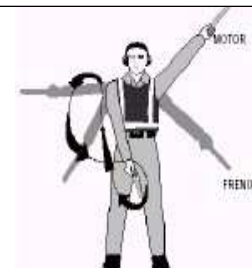


Figure 42

## Appendix B – Unmanned Free Balloons

### 1 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:
  - has a combined mass of 6 kg or more; or
  - includes a package of 3 kg or more; or
  - includes a package of 2 kg or more with an area density of more than 13 g per square centimeter; or
  - 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: 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, resulting in figure 43.

### 2 GENERAL OPERATING RULES

2.1 An unmanned free balloon shall not be operated without appropriate authorization of DECEA.

NOTE: The process in view of the approval shall follow the orientations contained in specific DECEA regulations.

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 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 superpressure 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 and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar.

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

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

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

3.6 A heavy unmanned free balloon shall not be operated between sunset and Sunrise or such other period between sunset and sunrise 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 colored open parachute) more than 15 m long shall not be operated between sunrise and sunset unless the suspension device is colored in alternate bands of high conspicuity colors or has colored pennants attached.

#### 4 FLIGHT 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 PRE-FLIGHT NOTIFICATION

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

5.1.1 Notification of the intended flight shall include such of the following information as may be required by the appropriate ATS 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; and

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).

5.12 Any changes in the pre-launch information notified in accordance with 5.1.1 above shall be forwarded to the ATS unit concerned not less than 6 hours before the estimated time of launch, or in the case of solar or cosmic disturbance investigations involving a critical time element, not less than 30 minutes before the estimated time of the commencement of the operation.

## 5.2 Notification of launch

Immediately after a medium or heavy unmanned free balloon is launched, the operator shall notify the appropriate ATS unit of the following:

- a) balloon flight identification;
- b) launch site;
- c) actual time of launch;
- d) estimated time at which 18.000 m (60.000 ft) pressure-altitude will be passed, or the estimated time at which the cruising level will be

reached if at or below 18.000 m (60.000 ft), and the estimated location; and

- e) any changes to the information previously notified in accordance with 5.1.1 g) and h).

### 5.3 Notification of cancellation

The operator shall notify the appropriate ATS 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 ATS. Unless ATS 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 ATS. Unless ATS 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 ATS unit. This notification shall include the last recorded position. The appropriate ATS 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; and
- d) the forecast time and location of round impact.

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

Figure 43 – Classification of unmanned free balloons

CHARACTERISTICS		PAYLOAD MASS (KILOGRAMS)					
		1	2	3	4	5	6 or more
ROPE OR OTHER SUSPENSION 230 NEWTONS OR MORE		HEAVY					
INDIVIDUAL PAYLOAD PACKAGE	AREA DENSITY more than 13 g/cm <sup>2</sup>						
<div style="border: 1px dashed black; padding: 5px; width: fit-content;">                         AREA DENSITY                          CALCULATION  <math display="block">\frac{\text{MASS (g)}}{\text{Area of smallest surface (cm}^2\text{)}}</math> </div>	AREA DENSITY less than 13 g/cm <sup>2</sup>	LIGHT					
COMBINED MASS (If Suspension OR Area density OR Mass of individual package are not factors)							



## Appendix C – Unlawful Interference

1. 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:

1.1 If the pilot-in-command cannot proceed to an aerodrome in accordance with the rules in Chapter 4, 4.7.2, 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.

1.2 When an aircraft is 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; or if no applicable procedures have been established, proceed at a level which differs from the cruising levels normally used for IFR flight by:
  - 150 m (500 ft) in an area where a vertical separation minimum of 300 m (1.000 ft) is applied; or
  - 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 4.8 of Chapter 4.

## Appendix D – Aircraft Interception

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 this Annex;
  - b) notify, if possible, the appropriate air traffic services unit;
  - c) attempt to establish radiocommunication 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; and
  - 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.
2. If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signs, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.
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.
4. 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 tables 3 and 4, transmitting each phrase twice.

NOTE 1: In the second column, syllables to be emphasized are underlined.

NOTE 2: The call sign required to be given is that used in radiotelephony communications with ATS units and corresponding to the aircraft identification in the Flight Plan.

NOTE 3: Circumstances may not always permit, nor make desirable, the use of the phrase “HIJACK”.

Table 2

PHRASES FOR USE BY INTERCEPTING AIRCRAFT		
Phrase	Pronunciation	Meaning
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?
FOLLOW	<u>FOL</u> -LO	Follow me.
DESCEND	DEE- <u>SEND</u>	Descend for landing.
YOU LAND	YOU <u>LAAND</u>	Land at this aerodrome.
PROCEED	PRO- <u>SEED</u>	You may proceed.

Table 3

PHRASES FOR USE BY INTERCEPTED AIRCRAFT		
Phrase	Pronunciation	Meaning
CALL SIGN (call sign)	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
WILCO	<u>VILL</u> -CO	Understood, will comply.
CAN NOT	<u>KANN</u> NOT	Unable to comply.
REPEAT	REE- <u>PEET</u>	Repeat your instructions.
AM LOST	<u>AM LOST</u>	Position unknown.
MAYDAY	MAYDAY	I am in distress.
HIJACK	<u>HI-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.

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

5.1 Signals initiated by intercepting aircraft and responses by intercepted aircraft are described in Table 4.

Table 4

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
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>NOTE 1 - Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</p> <p>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 racetrack patterns and to rock the aircraft each time it passes the intercepted aircraft.</p>	<p>You have been intercepted. Follow me.</p>	<p><b>AIRPLANES:</b>  <b>DAY or NIGHT</b>  — Rocking aircraft, flashing navigational lights at irregular intervals and following.</p> <p><b>HELICOPTERS:</b>  <b>DAY or NIGHT</b>  — Rocking aircraft, flashing navigational lights at irregular intervals and following.</p>	<p>Understood, will comply.</p>

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
2	DAY or NIGHT — An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT — Rocking the aircraft	Understood, will comply.
3	DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.	Land at this aerodrome.	DAY or NIGHT — Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply.

5.2 The signals initiated by the intercepted aircraft and responses by intercepting aircraft are described in Table 6.

Table 6

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
4	DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to	Aerodrome you have designated is inadequate.	DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 Signals prescribed for intercepting aircraft.	Understood, follow me.

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
5	circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.  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.	If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.  DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood, you may proceed.  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.

## 6. INTERCEPTION METHODS

6.1 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 crossing the aircraft's flight path or to perform any other manoeuvre in such manner that the wake turbulence may be hazardous, particularly if the intercepted aircraft is a light aircraft.

6.2 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.

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

- a) 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.

- b) 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; and
- c) 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.

64 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 later aircraft to see the visual signs given.

65 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given. If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series 1 signal in Table 4, are unsuccessful, other methods of signaling 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.

66 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.

## 7. GUIDANCE OF AN INTERCEPTED AIRCRAFT

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

7.2 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 VMC and that the manoeuvres demanded of the intercepted aircraft do not add to already existing hazards on the event that the operation efficiency of the aircraft is impaired.

7.3 In the exceptional case where an intercepted civil aircraft is required to land in the territory overflown, care must be also 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.

7.4 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.

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

## 8. AIR-TO-AIR VISUAL SIGNALS

The visual signals to be used by intercepting and intercepted aircraft are those set forth in item 5 of this Appendix. 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.

## 9 RADIOCOMMUNICATION BETWEEN THE INTERCEPT CONTROL UNIT OR THE INTERCEPTING AIRCRAFT AND THE INTERCEPTED AIRCRAFT

When an interception is being made, the interception 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 authority, or to establish contact through the appropriate ATS unit(s).

#### 10. 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 ATS unit during all phases of an interception of an aircraft which is, or might be, a civil aircraft, in order that the ATS unit is kept fully informed of the developments and of the action required of the intercepted aircraft.

## Appendix E – Tables of Cruising Levels

1. Except the provided in 2 and 3 below, the cruising levels to be observed, complying with this instruction, are in the Table 7.

Table 7

MAGNETIC TRACK											
FROM 000° TO 179°						FROM 180° TO 359°					
FL	IFR FLIGHTS		FL	VFR FLIGHTS		FL	IFR FLIGHTS		FL	VFR FLIGHTS	
	ALTITUDE			ALTITUDE			ALTITUDE			ALTITUDE	
	meters	feet		meters	feet		meters	feet		meters	feet
30	900	3000	35	1050	3500	20	600	2000			
50	1500	5000	55	1700	5500	40	1200	4000	45	1350	4500
70	2150	7000	75	2300	7500	60	1850	6000	65	2000	6500
90	2750	9000	95	2900	9500	80	2450	8000	85	2600	8500
110	3350	11000	115	3500	11500	100	3050	10000	105	3200	10500
130	3950	13000	135	4100	13500	120	3650	12000	125	3800	12500
150	4550	15000				140	4250	14000	145	4400	14500
170	5200	17000				160	4900	16000			
190	5800	19000				180	5500	18000			
210	6400	21000				200	6100	20000			
230	7000	23000				220	6700	22000			
250	7600	25000				240	7300	24000			
270	8250	27000				260	7900	26000			
290	8850	29000				280	8550	28000			
330	10050	33000				310	9450	31000			
370	11300	37000				350	10650	35000			
410	12500	41000				390	11900	39000			
450	13700	45000				430	13100	43000			
490	14950	49000				470	14350	47000			
etc.	etc.	etc.				510	15550	51000			
						etc.	etc.	etc.			

2. The RVSM cruising levels are in the Table 8.

3. When suspended the RVSM procedures, the procedures provided by Table 9 will be applied.

Table 8	
MAGNETIC TRACK	
FROM 000° TO 179°	FROM 180° TO 359°
FL290	FL300
FL310	FL320
FL330	FL340
FL350	FL360
FL370	FL380
FL390	FL400
FL410	

Table 9	
MAGNETIC TRACK	
FROM 000° TO 179°	FROM 180° TO 359°
FL290	
FL350	FL320
FL410	FL380