
مرکز آموزشهای هوایی هما
HOMA AVIATION TRAINING CENTER

ICAO Annex 2

Ali Erfanian

International Standards

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Annex 2
to the Convention on
International Civil Aviation

Rules of the Air

Ali Erfanian

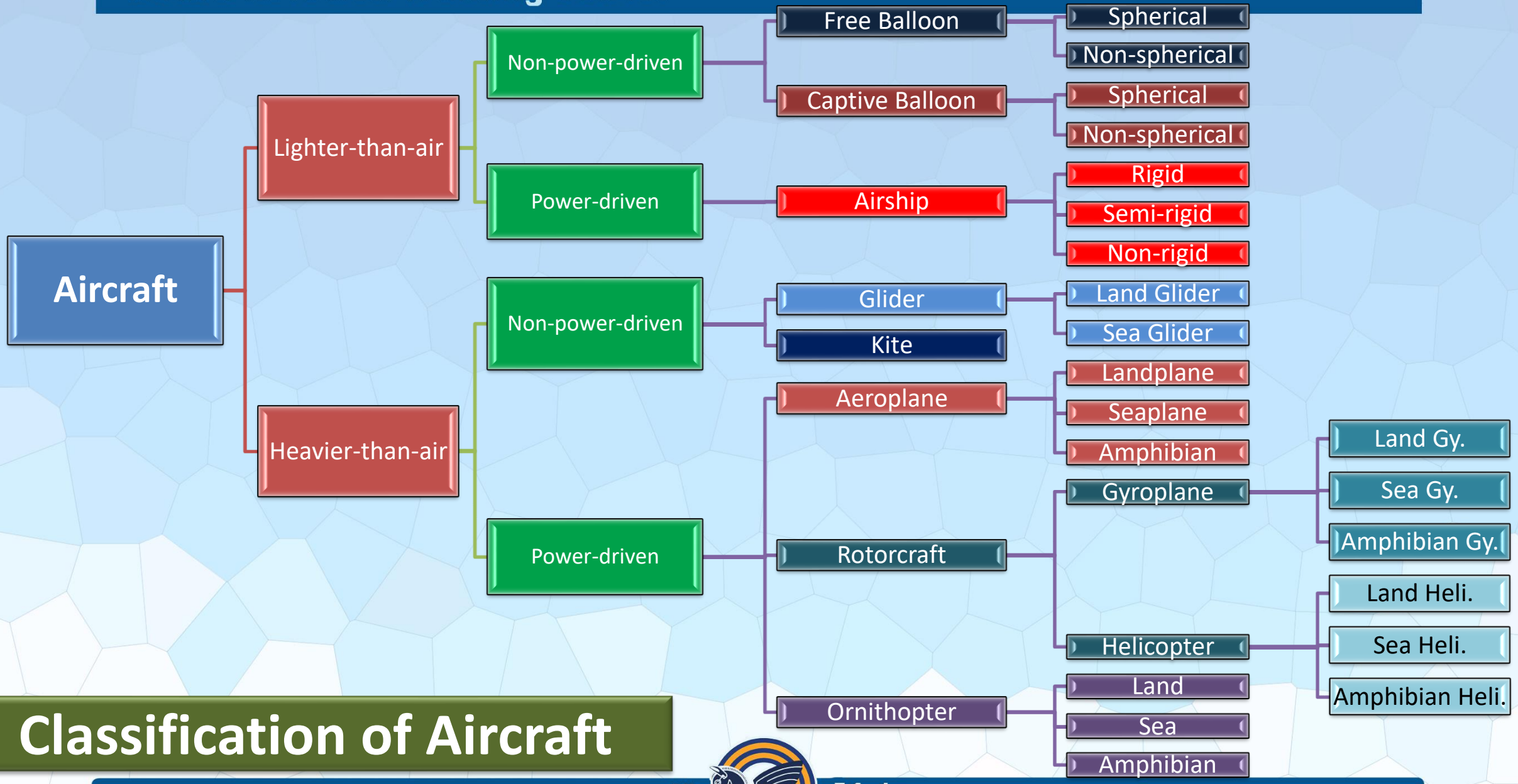
CHAPTER 2.
APPLICABILITY OF THE RULES OF THE AIR

CHAPTER 2. APPLICABILITY OF THE RULES OF THE AIR

2.1 Territorial application of the rules of the air

2.1.1 The rules of the air shall apply to aircraft bearing the ***nationality*** and ***registration marks*** of a Contracting State, wherever they may be, to the extent that they do not conflict with the rules ***published by the State*** having jurisdiction over the territory overflown.
*Note.— Over the **high seas**, therefore, these rules apply without exception.*

Aircraft. 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.



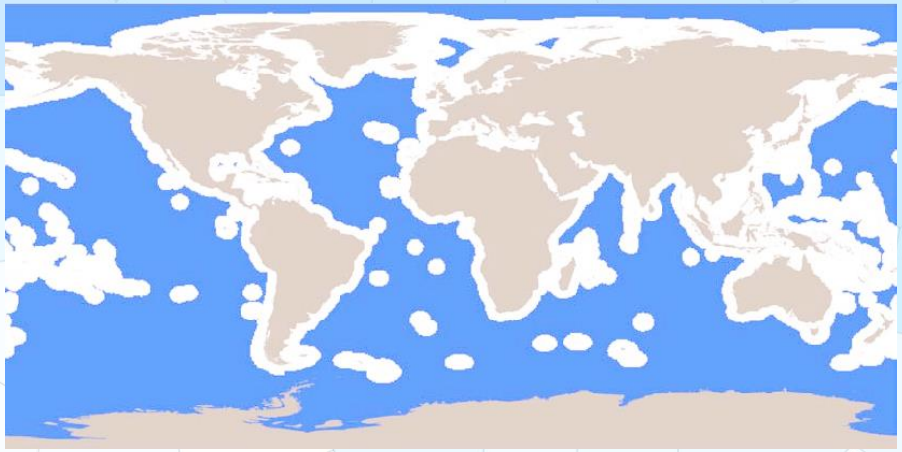
Classification of Aircraft

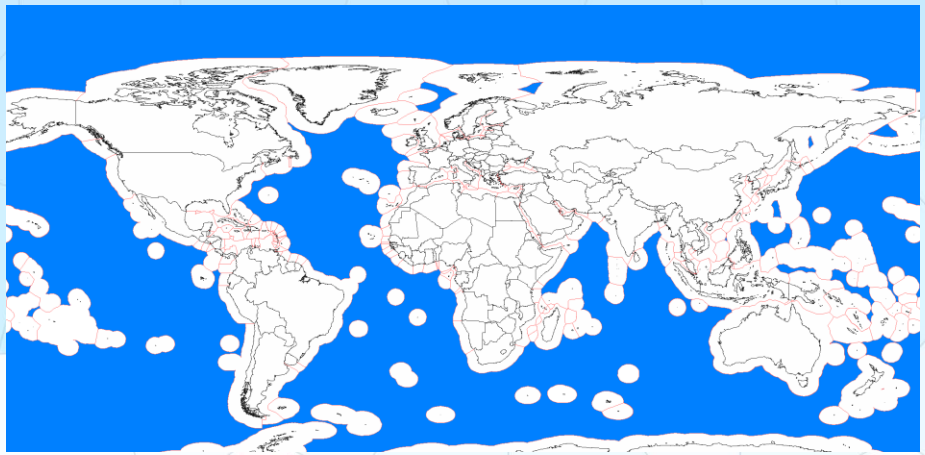
CHAPTER 2. APPLICABILITY OF THE RULES OF THE AIR

2.1.1

Over those parts of the ***high seas*** where a Contracting State has accepted, pursuant to a regional air navigation agreement, the responsibility of providing *air traffic services*, the "appropriate ATS authority" referred to in this Annex is the relevant authority designated by the State responsible for providing those services.

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






Air Traffic Management (ATM)
Air Traffic Service (ATS)
Air Traffic Flow Management (ATFM)
Airspace Management (ASM)
Air Traffic Control Service (ATC)
Air Traffic Advisory Service
Flight Information Service
Alerting Service
Aerodrome Control Service
Approach Control Service
Area Control Service
CD
GND
TWR

Definitions

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

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).

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

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

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.

Definitions

Air traffic control service. A service provided for the purpose of:
a) preventing collisions:
1) between aircraft, and
2) on the manoeuvring area between aircraft and obstructions, and
b) expediting and maintaining an orderly flow of air traffic.

Area control service. Air traffic control service for controlled flights in control areas.

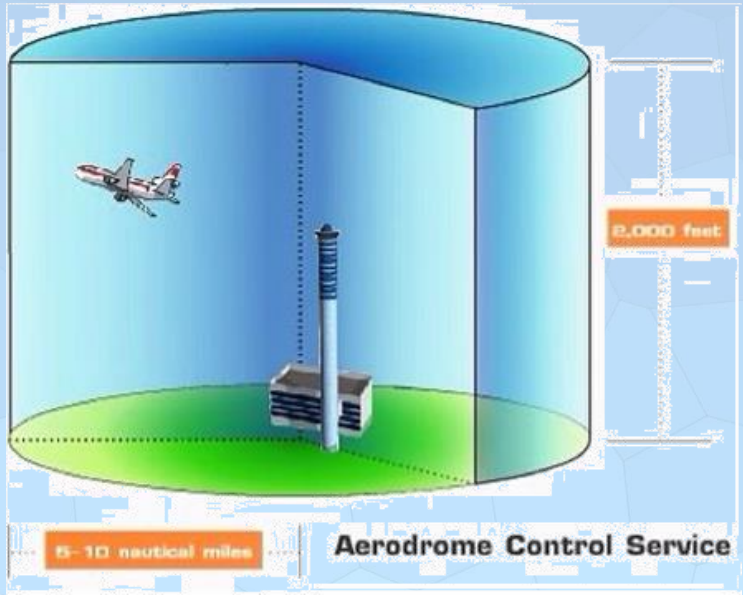
Approach control service. Air traffic control service for arriving or departing controlled flights.

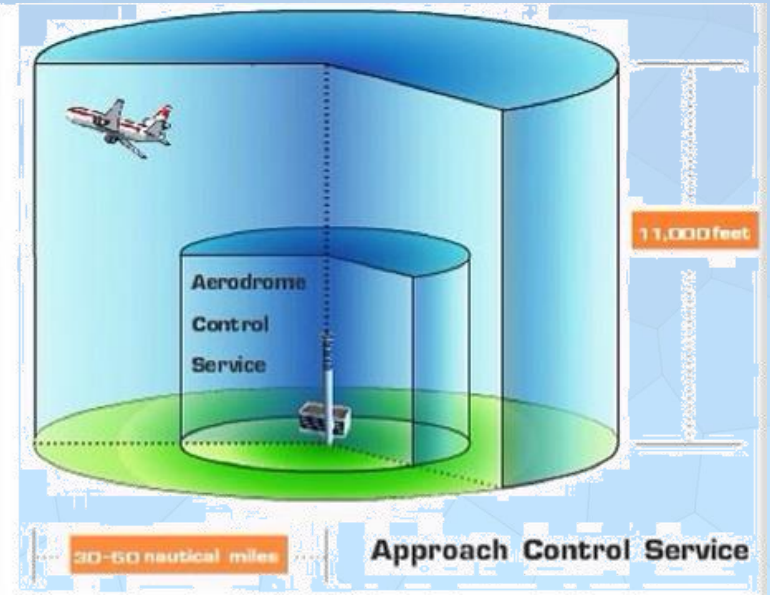
Aerodrome control service. Air traffic control service for aerodrome traffic.

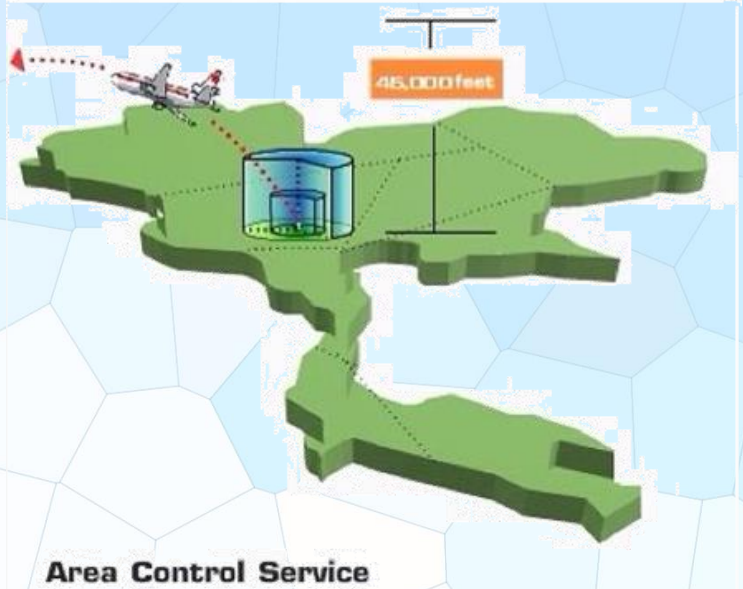
Advisory airspace. An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.

IFR. The symbol used to designate the instrument flight rules.

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.







Aerodrome control service
Approach control service
Area control service


World's tallest ATC towers
132.2 m
110 m
83 m
83 m
58 m
57 m
Bangkok
Abu Dhabi
Stockholm
Mumbai
Kutaisi
Edinburgh

Definitions

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

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

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

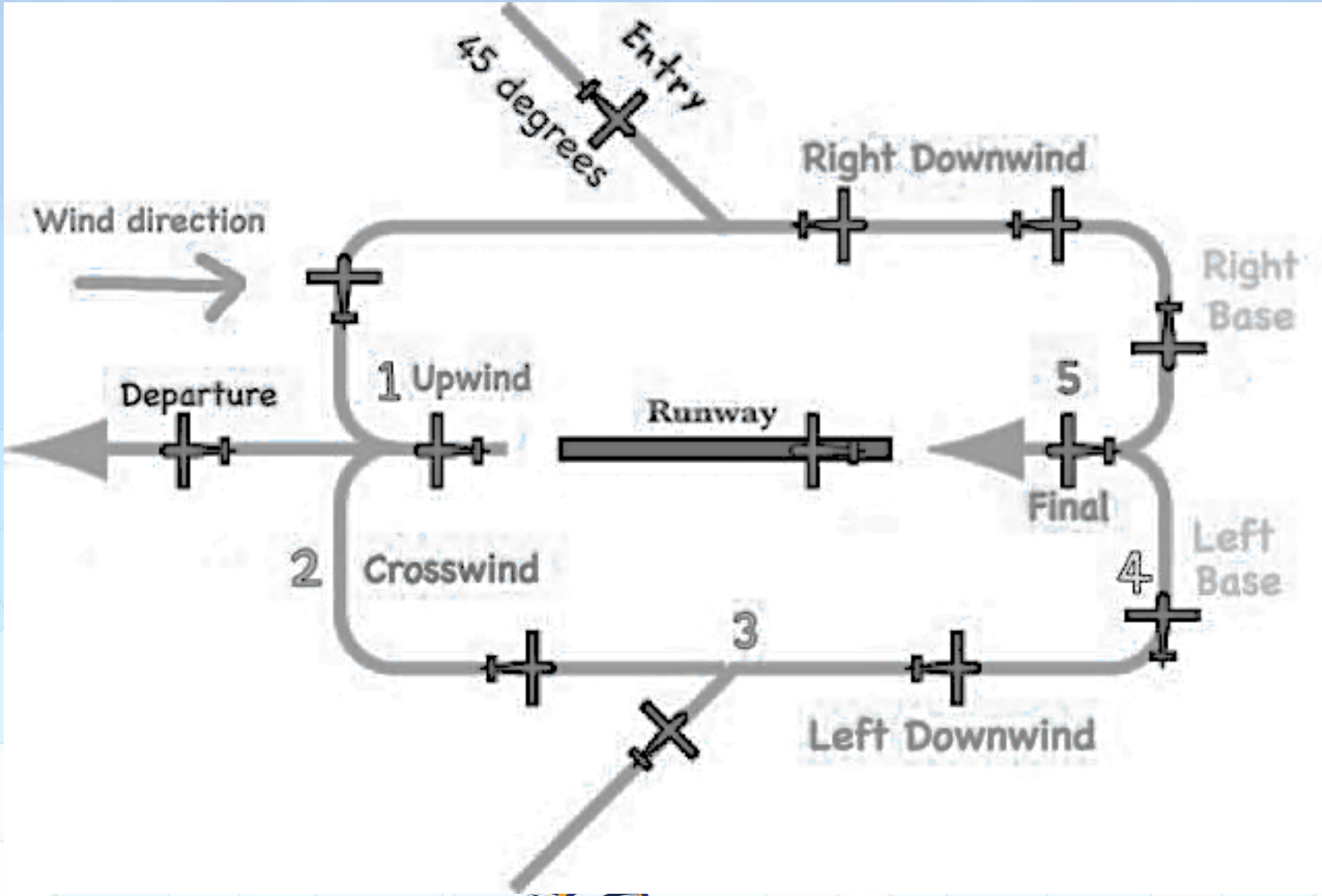
Controlled flight. Any flight which is subject to an air traffic control clearance.

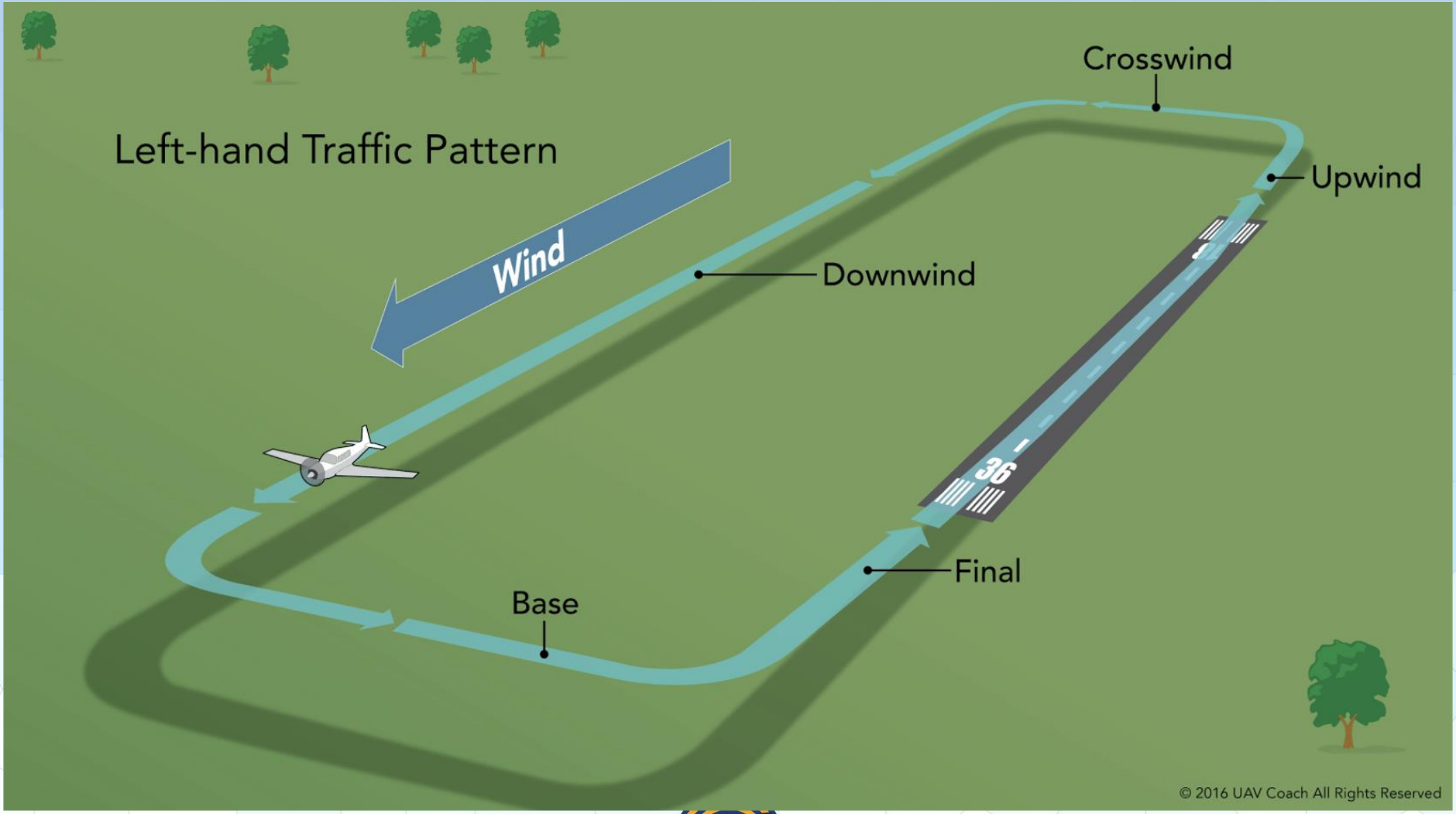
Control area. A controlled airspace extending upwards from a specified limit above the earth.

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 Traffic Circuit




Left-hand Traffic Pattern
Wind
Crosswind
Upwind
Downwind
Base
Final
36
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Definitions

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

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.

Taxiing. Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

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

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.

Definitions

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.

Controlled airspace. An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.

Note.— Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D and E as described in Annex 11, 2.6.

Air traffic services airspaces. Airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.

Note.— ATS airspaces are classified as Class A to G.

Definitions

Air traffic control unit. A generic term meaning variously, area control centre, approach control unit or aerodrome control tower.

Flight information centre. A unit established to provide flight information service and alerting 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.

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

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

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

Definitions

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

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

Appropriate ATS authority. The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned.

CHAPTER 2. APPLICABILITY OF THE RULES OF THE AIR

2.2 Compliance with 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**.

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

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).

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

Definitions

VMC. The symbol used to designate visual meteorological conditions.

VFR. The symbol used to designate the visual flight rules.

VFR flight. A flight conducted in accordance with the visual flight rules.

Ceiling. The height above the ground or water of the base of the lowest layer of cloud below 6 000 metres (20 000 feet) covering more than half the sky.

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;

b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

Flight visibility. The visibility forward from the cockpit of an aircraft in flight.

Ground visibility. The visibility at an aerodrome as reported by an accredited (=approved) observer or by automatic systems.

CHAPTER 2. APPLICABILITY OF THE RULES OF THE AIR

2.3 Responsibility for compliance with the rules of the air

2.3.1 Responsibility of pilot-in-command

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

Definitions

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.

Operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Note.— In the context of remotely piloted aircraft, an aircraft operation includes the remotely piloted aircraft system.

Remotely piloted aircraft (RPA). An unmanned aircraft which is piloted from a remote pilot station.

Remotely piloted aircraft system (RPAS). A remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other components as specified in the type design.

Remote pilot station. The component of the remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft.

Remote pilot. A person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time.

CHAPTER 2. APPLICABILITY OF THE RULES OF THE AIR

2.3 Responsibility for compliance with the rules of the air

2.3.2 Pre-flight action

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

R 2. APPLICABILITY RULES OF THE AIR

2.4 Authority of pilot-in-command of an aircraft

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

2.5 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.

Safety-sensitive personnel. Persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers.

Problematic use of 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.

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

CHAPTER 3.
GENERAL RULES

CHAPTER 3. GENERAL RULES

3.1 Protection of persons and property

3.1.1 Negligent or reckless operation of aircraft

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

3.1.2 Minimum heights

Except when necessary for ***take-off*** or ***landing***, or except by ***permission from the appropriate authority***, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons, unless at such a height as will permit, **in the event of an emergency arising**, a landing to be made without **undue hazard to persons or property on the surface**.

Appropriate authority.

a) Regarding flight over the high seas: The relevant authority of the State of Registry.

b) Regarding flight **other than over the high seas (= territory of a state):** The relevant authority of the State having **sovereignty** over the territory being overflown.

CHAPTER 3. GENERAL RULES

3.1.3 Cruising levels

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

a) flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude;

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

Cruising level. A level maintained during a **significant portion** of a flight.

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

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

Altitude. The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

Definition

Flight level. A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

Note 1.— A pressure type altimeter calibrated in accordance with the Standard Atmosphere:

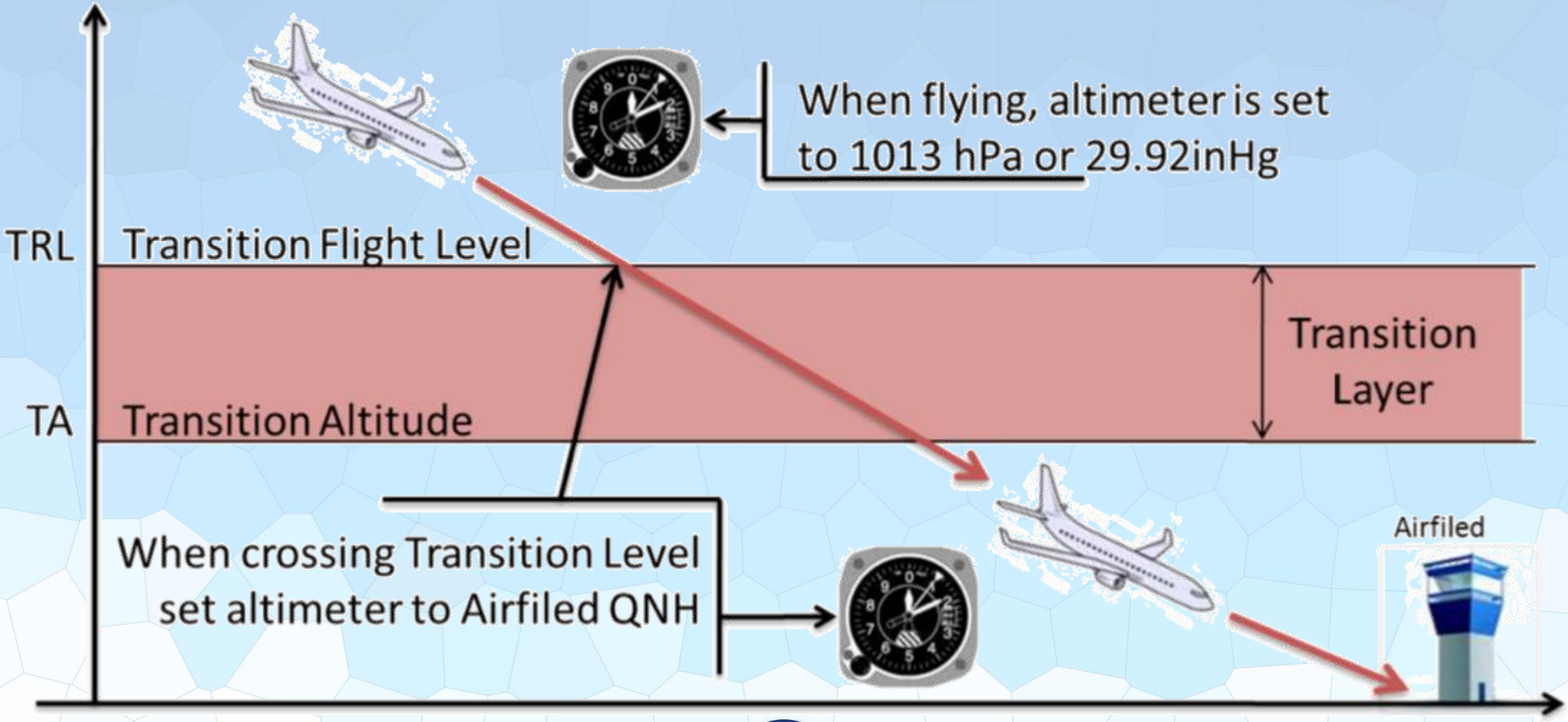
a) when set to a QNH altimeter setting, will indicate altitude;

b) when set to a QFE altimeter setting, will indicate height above the QFE reference datum;

c) when set to a pressure of 1013.2 hPa, may be used to indicate flight levels.

Note 2.— The terms "height" and "altitude", used in Note 1 above, indicate altimetric rather than geometric heights and altitudes.

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


When flying, altimeter is set to 1013 hPa or 29.92inHg
TRL
Transition Flight Level
Transition Layer
TA
Transition Altitude
When crossing Transition Level set altimeter to Airfiled QNH
Airfiled

CHAPTER 3. GENERAL RULES

3.1.4 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**.

3.1.5 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**.

3.1.6 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**.

CHAPTER 3. GENERAL RULES

3.1.7 Acrobatic 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**.

Acrobatic flight. Manoeuvres **intentionally** performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

CHAPTER 3. GENERAL RULES

3.1.8 Formation flights

Aircraft shall not be flown in formation except by **pre-arrangement among the pilots-in-command** of the aircraft taking part in the flight and, for formation flight in controlled airspace, in accordance with the conditions prescribed by the appropriate ATS authority(ies).

CHAPTER 3. GENERAL RULES

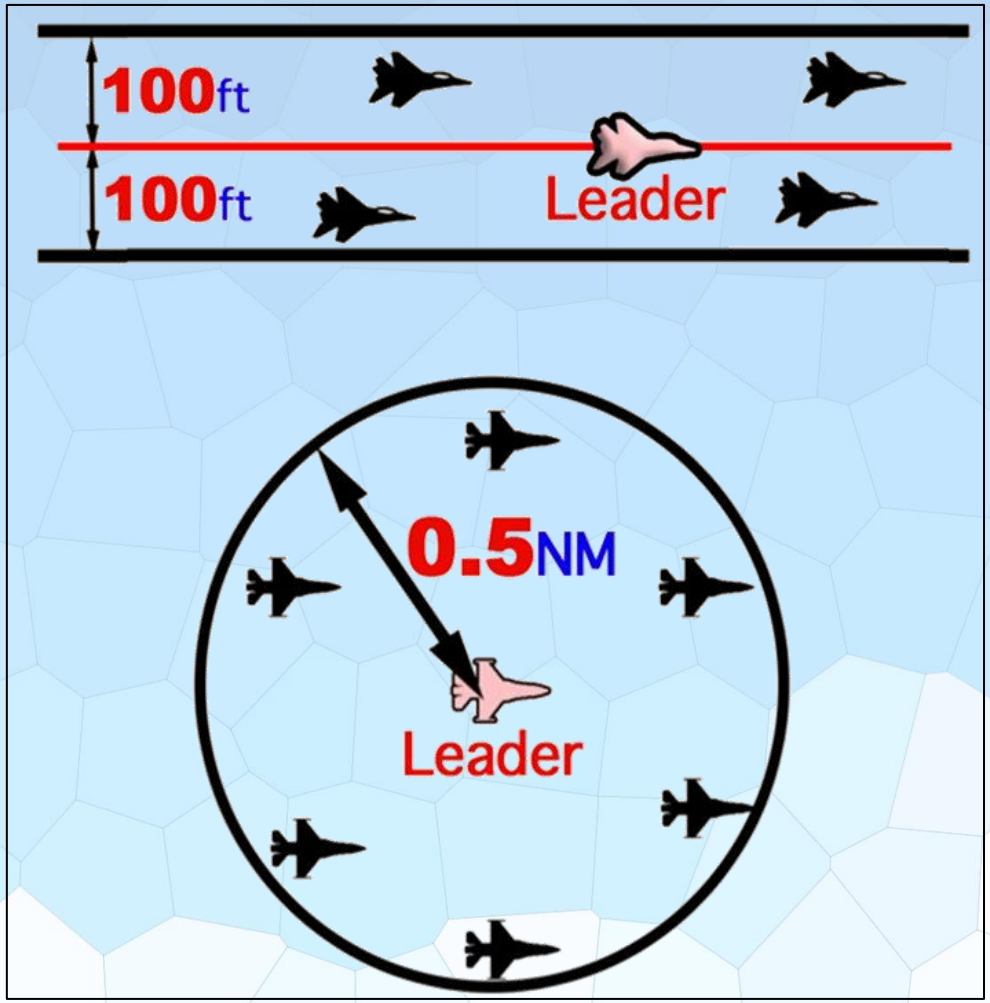
3.1.8 Formation flights

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 ***0.5 NM laterally*** and ***longitudinally*** and ***100 ft vertically from the flight leader*** shall be maintained by each aircraft.



CHAPTER 3. GENERAL RULES

3.1.9 Remotely piloted aircraft

A remotely piloted aircraft shall be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 4.

RPA observer. A trained and competent person designated by the operator who, by visual observation of the remotely piloted aircraft, assists the remote pilot in the safe conduct of the flight.

CHAPTER 3. GENERAL RULES

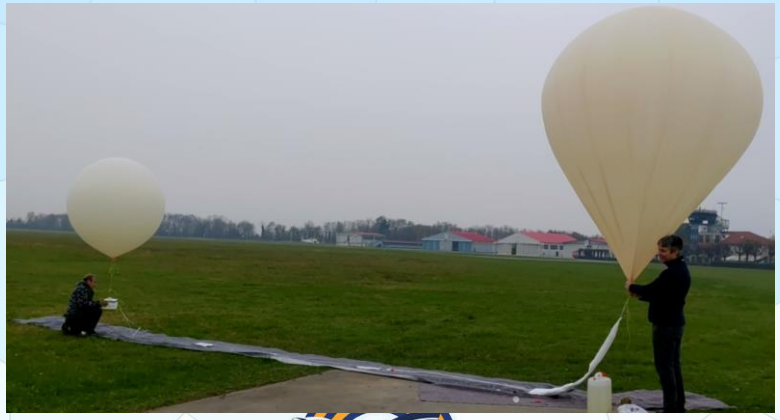
3.1.10 Unmanned free balloons

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 5.

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

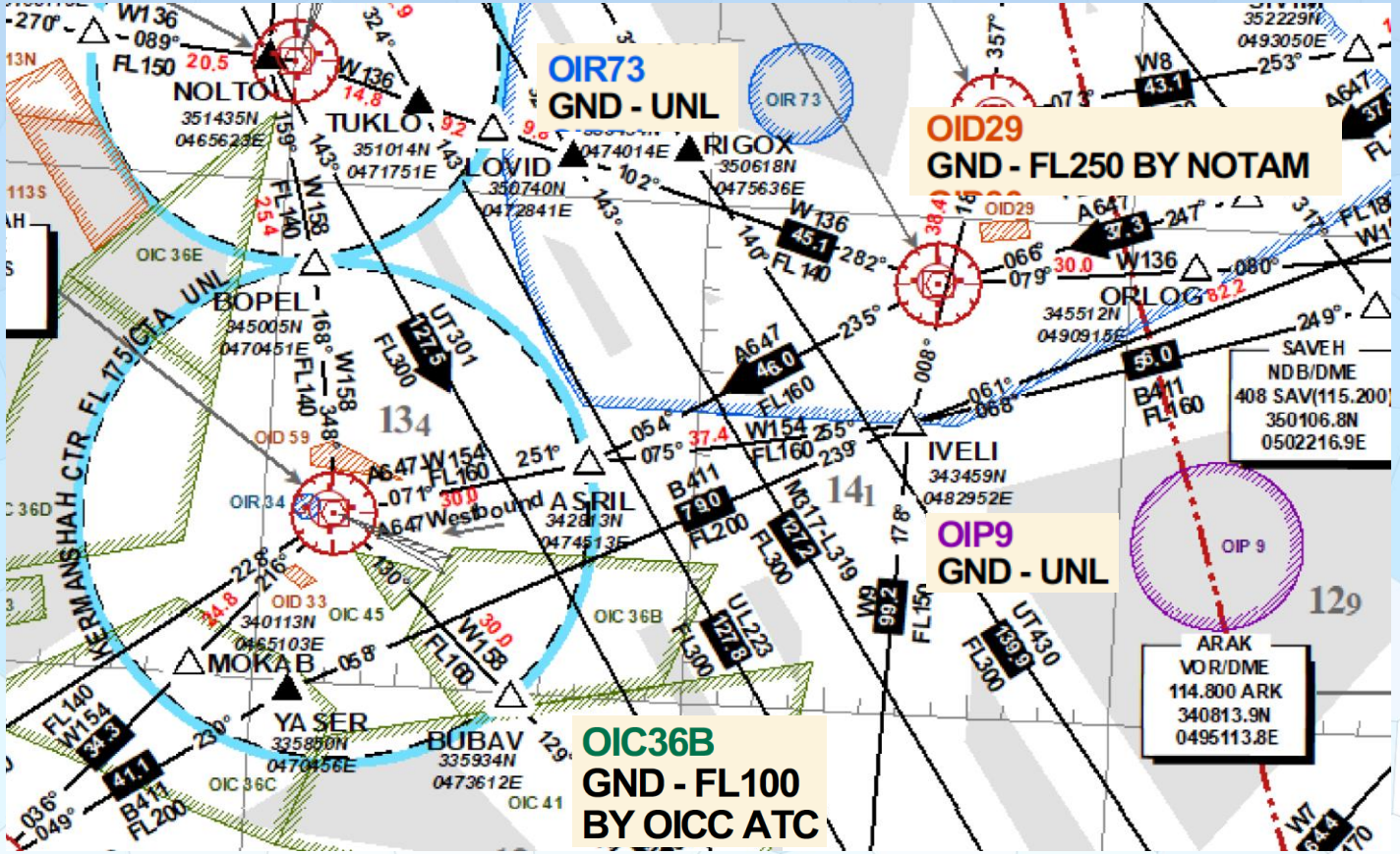
*Note.— Unmanned free balloons are classified as **heavy**, **medium** or **light** in accordance with specifications contained in Appendix 5.*



CHAPTER 3. GENERAL RULES

3.1.11 Prohibited areas and restricted areas

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



Definitions

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

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.

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.

Caution area: An airspace of defined dimensions within which uncontrolled and manoeuvering aircraft may be encountered, so it is necessary for the pilots "to use caution" when entering such airspace for avoidance of probable danger. Pilots of participating aircraft as well as pilots transiting the area are responsible for collision avoidance and pilots transiting Caution areas should coordinate with ATS units prior entering such areas. (AIP ENR 5.1)

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

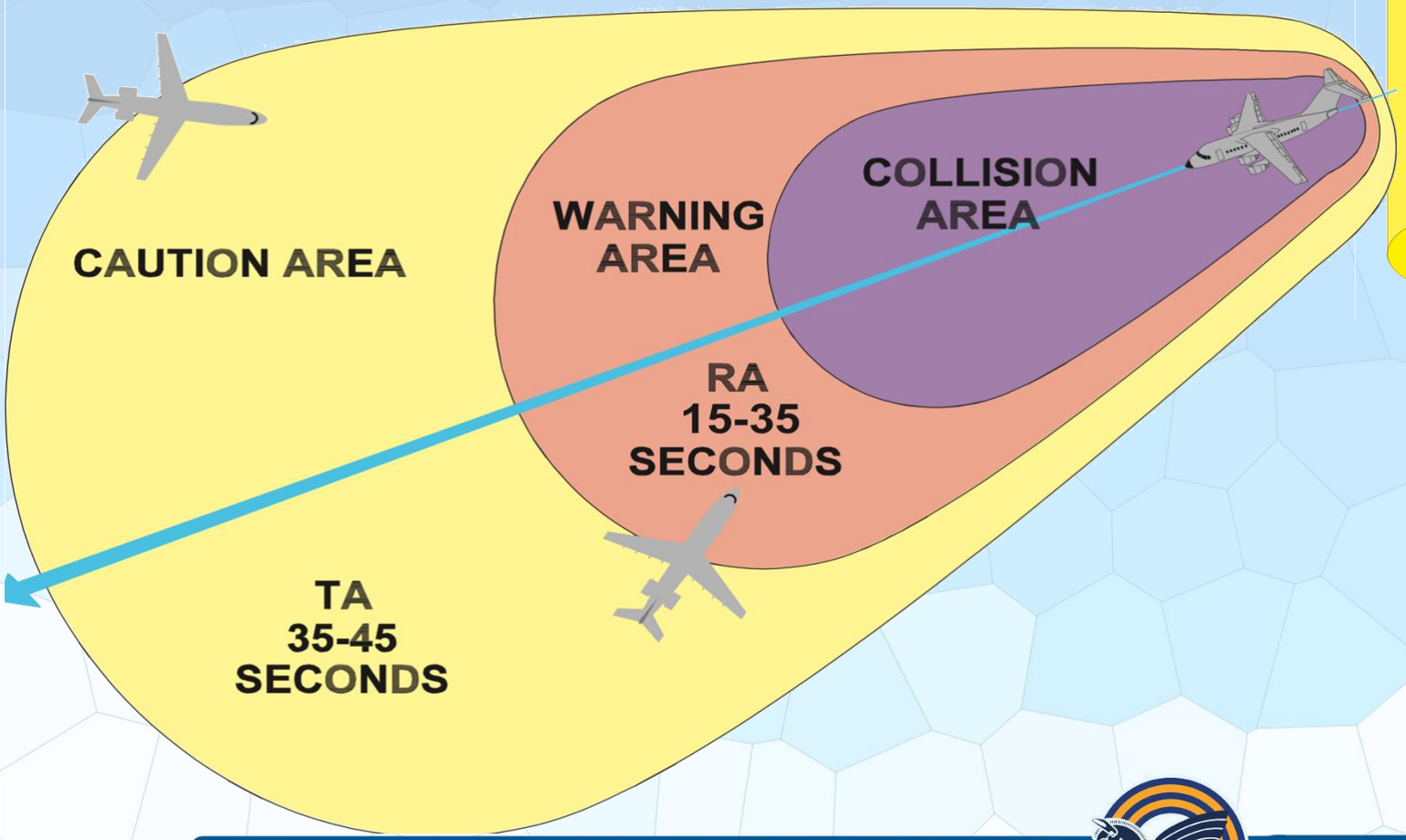
Nothing in these rules shall ***relieve*** the pilot-in-command of an aircraft from the responsibility of taking such action, including ***collision avoidance manoeuvres*** based on resolution advisories provided by ***ACAS*** equipment, as will best avert collision.

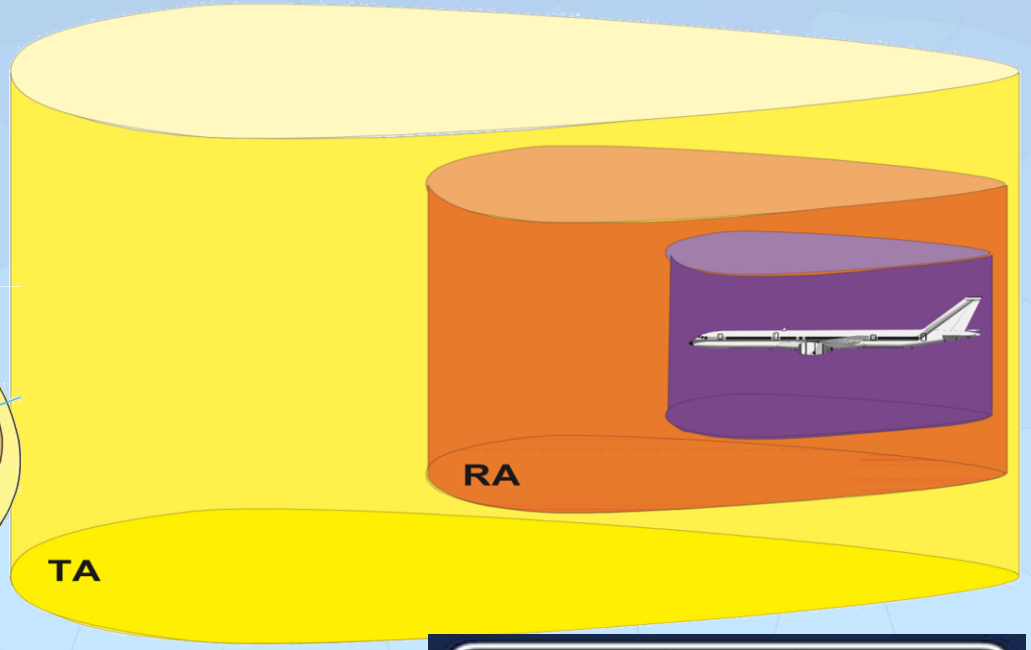
Note 1.— It is important that vigilance for the purpose of detecting potential collisions be exercised on board an aircraft, regardless of the type of flight or the class of airspace in which the aircraft is operating, and while operating on the movement area of an aerodrome.

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. SSR transponders referred to above are those operating in **Mode C or Mode S.** (PANS-ATM)

3.2.1 Proximity

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


CAUTION AREA
WARNING AREA
COLLISION AREA
RA
15-35
SECONDS
TA
35-45
SECONDS


RA
TA


1
2
4
6
.5
0
.5
1
2
4
+02

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

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

3.2.2.1 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***.

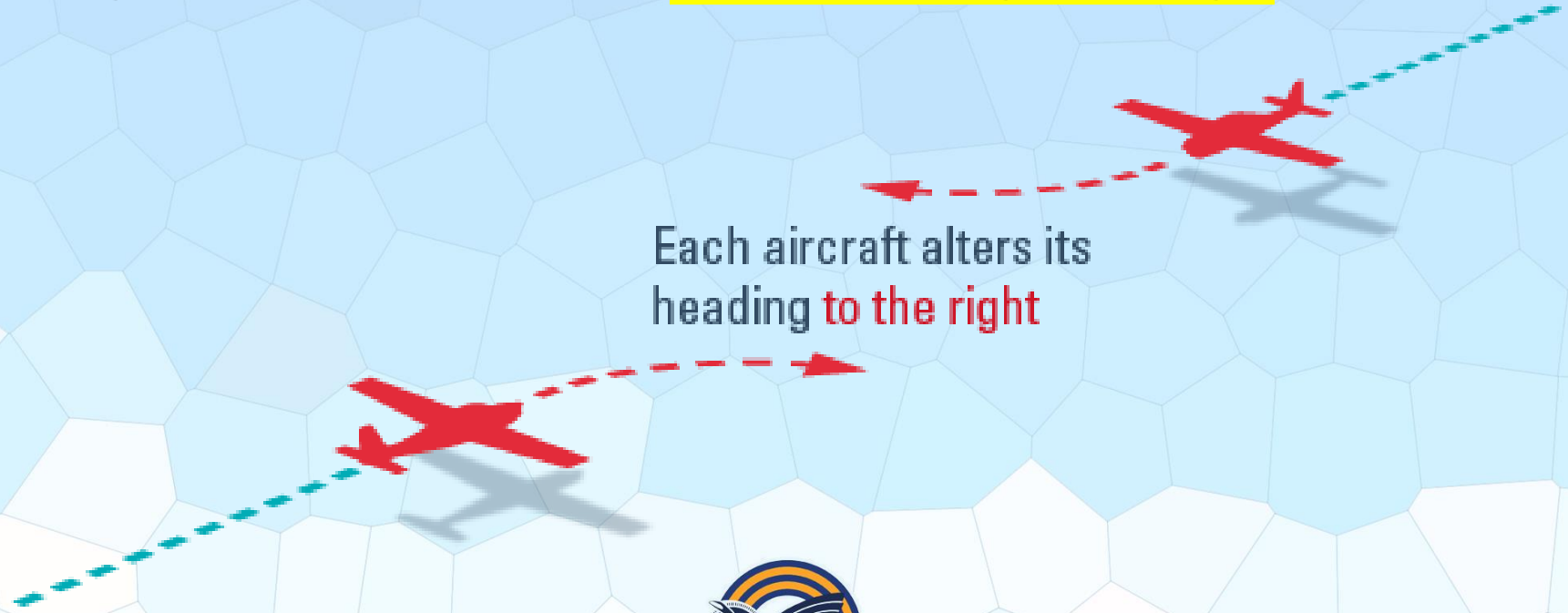
Heading. The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

3.2.2.2 ***Approaching head-on.*** When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to the right.



CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

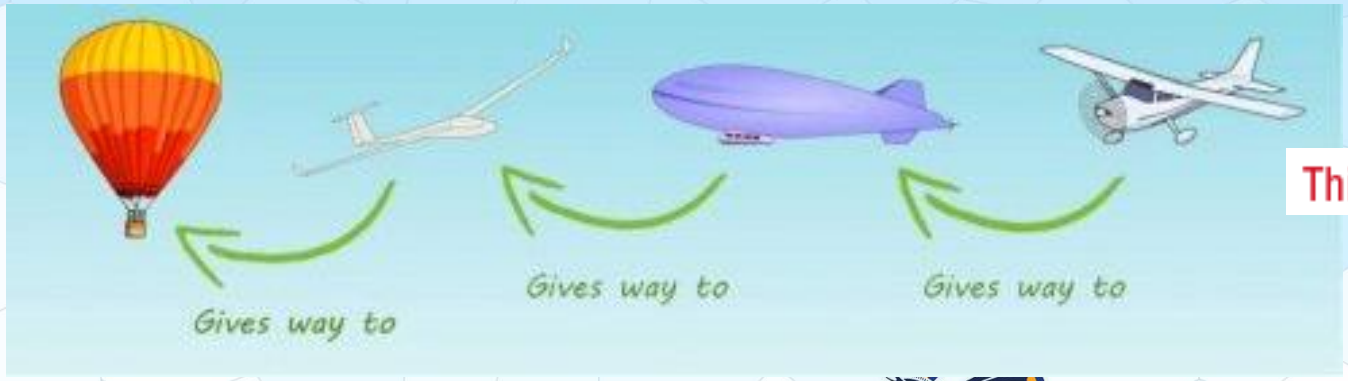
3.2.2.3 ***Converging.*** When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way, except as follows:

a) power-driven heavier-than-air aircraft shall give way to airships, gliders and balloons;

b) airships shall give way to gliders and balloons;

c) gliders shall give way to balloons;

d) power-driven aircraft shall give way to aircraft which are seen to be **towing** other aircraft or objects.



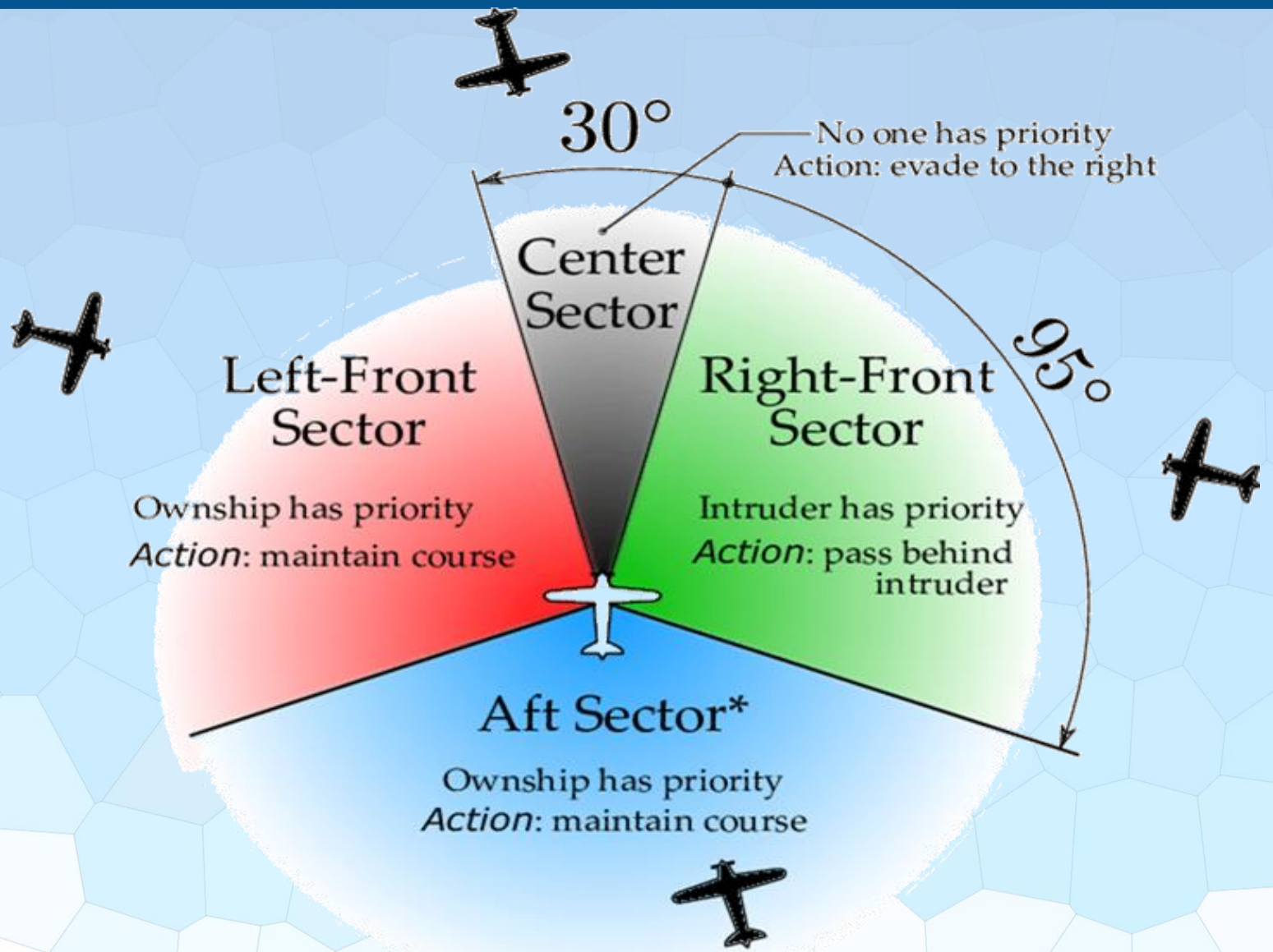
CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

3.2.2.4 ***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, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights.

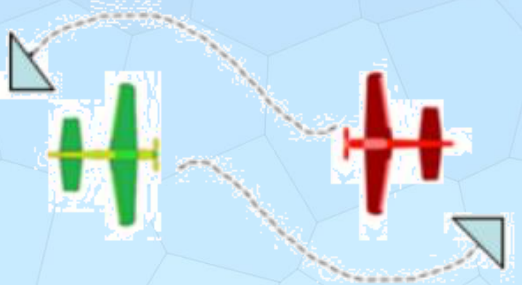
An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, ***shall keep out of the way of the other aircraft*** by ***altering its heading to the right***, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear.


30°
No one has priority
Action: evade to the right
Center Sector
95°
Left-Front Sector
Ownship has priority
Action: maintain course
Right-Front Sector
Intruder has priority
Action: pass behind intruder
Aft Sector*
Ownship has priority
Action: maintain course

RIGHT OF WAY - AIRBORNE

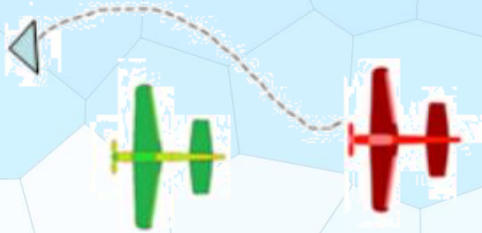
(Rules of the Air Regulations 2007, regulations 9-11)

CONVERGING
The aircraft with the other on its right shall give way



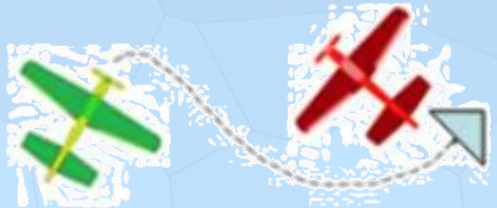
APPROACHING HEAD ON
Both aircraft shall turn to the right

OVERTAKING
The aircraft being overtaken has right of way. The overtaking aircraft shall pass clear to the right



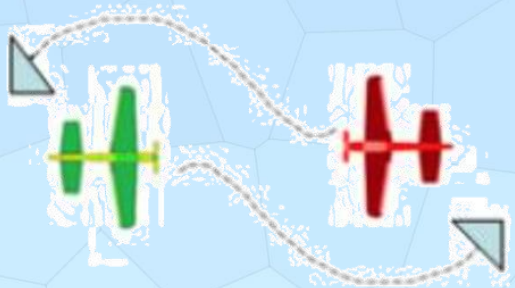
RIGHT OF WAY – ON THE GROUND

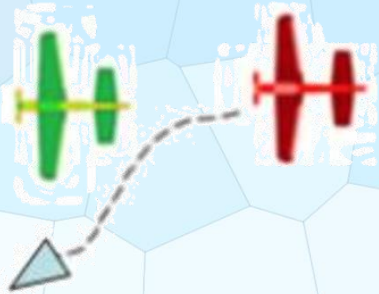
(Rules of the Air Regulations 2007, regulation 42)



CONVERGING
The aircraft with the other on its right shall give way

APPROACHING HEAD ON
Both aircraft shall turn to the right





OVERTAKING
The aircraft being overtaken has right of way. The overtaking aircraft shall pass clear to the left

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

3.2.2.5 Landing

3.2.2.5.1 An aircraft in flight, or operating on the ground or water, shall give way to aircraft landing or in the final stages of an approach to land.

3.2.2.5.2 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 latter shall not take advantage of this rule to cut in in front of another which is in the final stages of an approach to land, or to overtake that aircraft. Nevertheless, power-driven heavier-than-air aircraft shall give way to gliders.

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

3.2.2.5 Landing

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

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

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

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.2 Right-of-way

3.2.2.7 Surface movement of aircraft

3.2.2.7.1 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;

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.

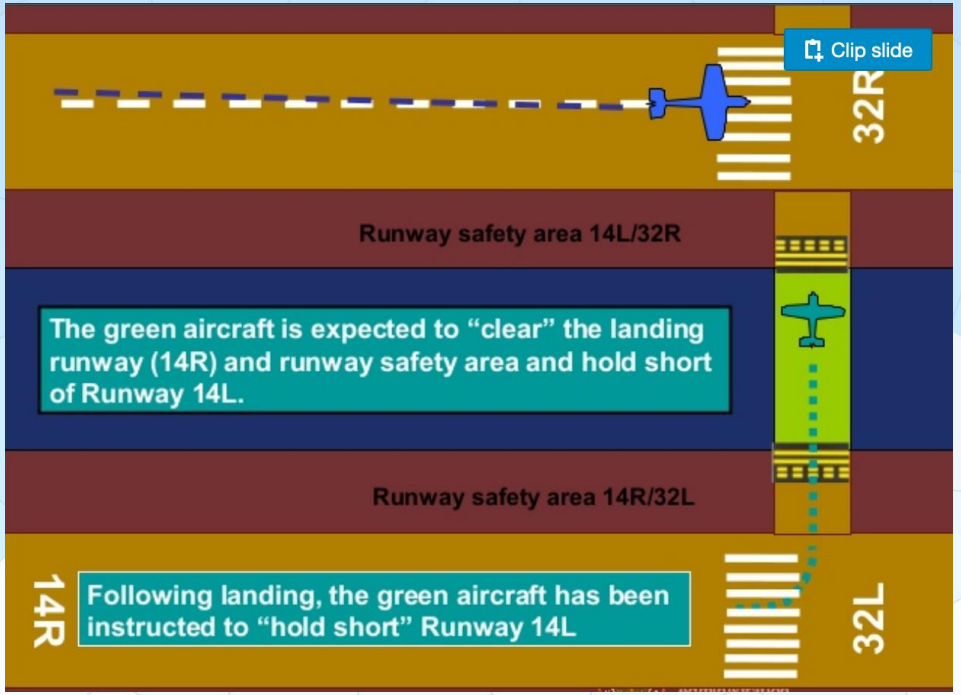
CHAPTER 3. GENERAL RULES

3.2.2 Right-of-way

3.2.2.7 Surface movement of aircraft

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

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

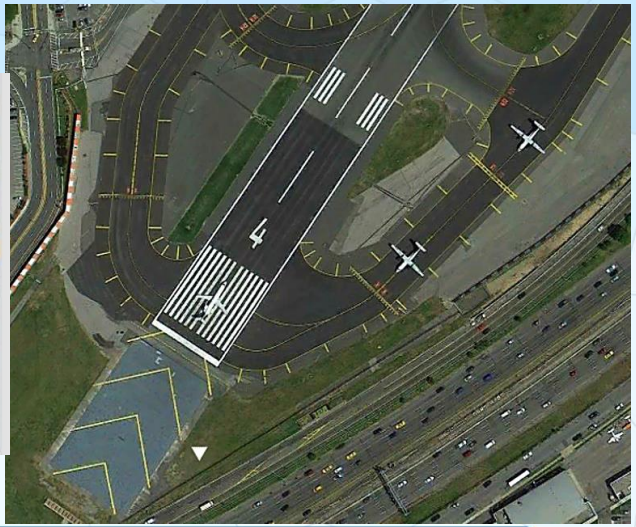


Definitions

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

Runway-holding position. A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/ MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

Note.— In radiotelephony phraseologies, the expression “holding point” is used to designate the runway-holding position.



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Absence of Runway-holding position

- Runway length **900 m or more**:

50 m from runway edge

- Runway length less than 900 m :

30 m from runway edge

CHAPTER 3. GENERAL RULES

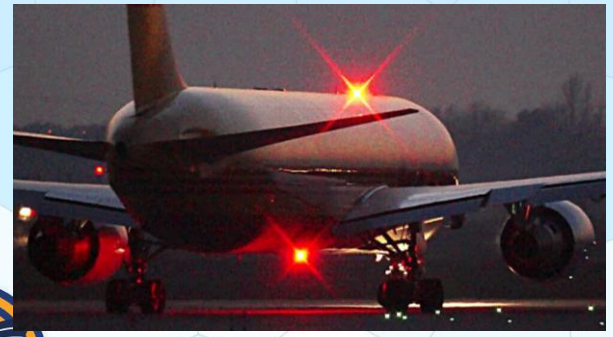
3.2.3 Lights to be displayed by aircraft

3.2.3.1 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.

Note.— Lights fitted for other purposes, such as landing lights and airframe floodlights, may be used in addition to the anti-collision lights to enhance aircraft conspicuity [*easily seen or noticed*].



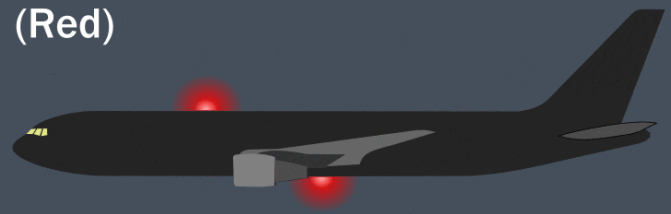
Logo Lights

- Mounted on horizontal stabilizer
- Sometimes mounted on wingtips

Anti-Collision Lights (White)

- On each wingtip
- Sometimes on tail
- Often called strobes

Anti-Collision Lights (Red)



- Top and bottom of aircraft
- Often called rotating beacons

aerosavvy

Landing lights

Navigation lights

Logo Lights

- Mounted on horizontal stabilizer
- Sometimes mounted on wingtips

Alternating Landing Light System (ALLS)

Wing Inspection Lights

- Illuminate wings
- Used for inspection
- Increase aircraft visibility

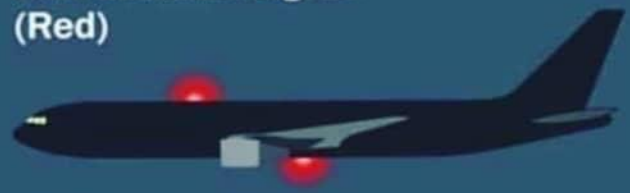
Landing Lights

- Runway illumination
- On landing gear, fuselage or wings

Anti-Collision Lights (White)

- On each wingtip
- Sometimes on tail
- Often called strobes

Anti-Collision Lights (Red)



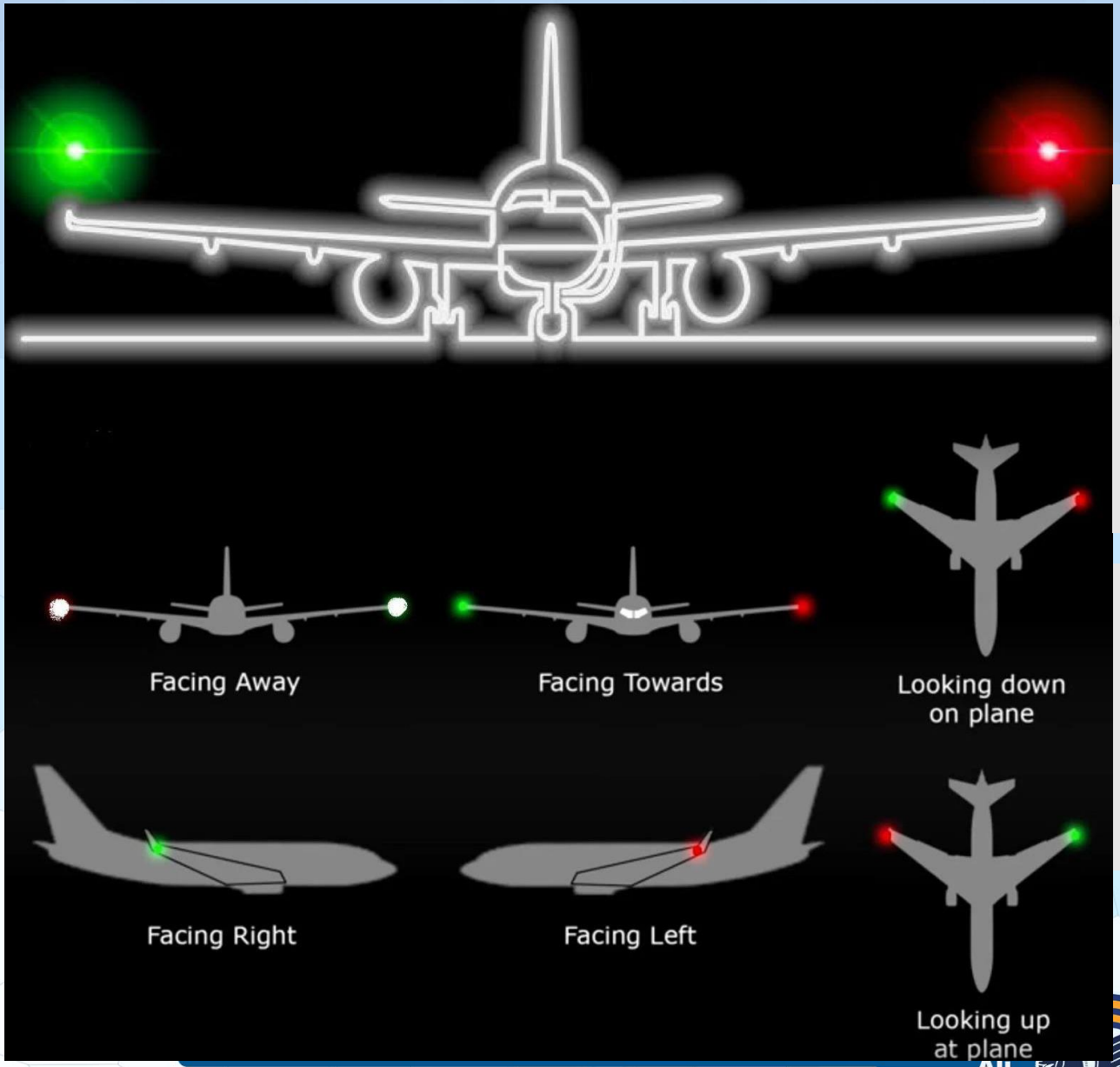
- Top and bottom of aircraft
- Often called rotating beacons

Position Lights

- Also called Navigation Lights
- Forward Facing:
  Left: Red
  Right: Green
- Rear Facing:
  White

Runway Turnoff & Taxi Lights

- Not as bright as landing lights
- Illuminate runway exits & taxiways



"Green to green all is serene"

"Green to red you could be dead"

CHAPTER 3. GENERAL RULES

3.2.3 Lights to be displayed by aircraft

3.2.3.2 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 (e.g. NAV lights);

c) all aircraft operating on the movement area of an aerodrome shall display lights intended to attract attention to the aircraft (Red anti-collision lights); and

d) all aircraft on the movement area of an aerodrome whose ***engines are running*** shall display lights which indicate that fact (Red anti-collision lights).

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.3 Lights to be displayed by aircraft

3.2.3.3 All aircraft in flight and fitted with anti-collision lights to ***attract attention*** to the aircraft, shall display such lights also outside: [*from sunset to sunrise or during any other period which may be prescribed by the appropriate authority*].

3.2.3.4 All aircraft:

a) operating on the movement area of an aerodrome and fitted with anti-collision lights to attract attention to the aircraft; or

b) whose engines are running on the movement area of an aerodrome,

shall display such lights also outside: [*from sunset to sunrise or during any other period which may be prescribed by the appropriate authority*].

CHAPTER 3. GENERAL RULES

3.2 Avoidance of collisions

3.2.3 Lights to be displayed by aircraft

EXEMPTION

3.2.3.5 A ***pilot*** shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of
3.2.3.1, (*from sunset to sunrise*)
3.2.3.2, (*on the movement area*)
3.2.3.3 (*in flight*), and
3.2.3.4 (*on the movement area*)
if they do or are likely to:

a) adversely affect the satisfactory performance of duties; or

b) subject an outside observer to harmful dazzle.

CHAPTER 3. GENERAL RULES

3.2.4 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.

CHAPTER 3. GENERAL RULES

3.2.5 Operation on and in the vicinity of an aerodrome

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

a) observe other aerodrome traffic for the purpose of avoiding collision;

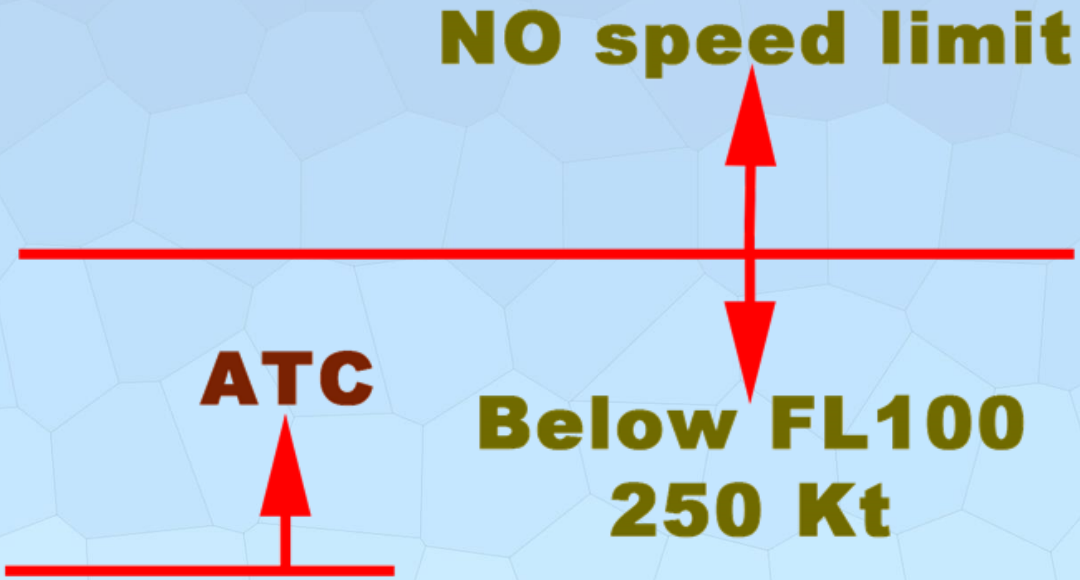
b) conform with or avoid the pattern of traffic formed by other aircraft in operation;

c) make all turns to the left, when approaching for a landing and after taking off, unless otherwise instructed;

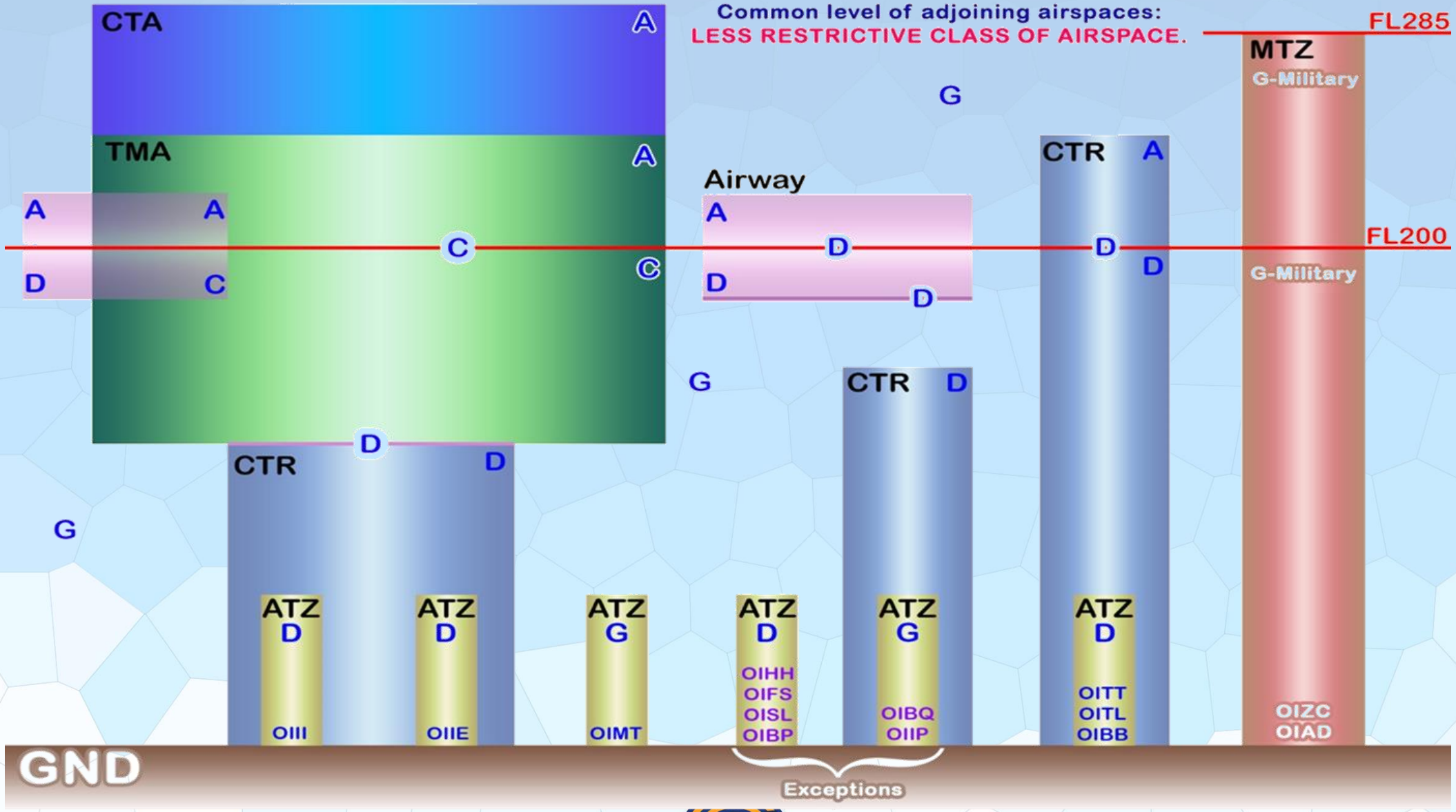
d) land and take off into the wind unless safety, the runway configuration, or air traffic considerations determine that a different direction is preferable.

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

A	IFR	IFR:ATC
B	IFR ↔ VFR	IFR:ATC VFR:ATC
C	IFR ↔ VFR	IFR:ATC VFR:ATC
D	IFR — VFR	IFR:ATC VFR:ATC
E	IFR — VFR	IFR:ATC VFR:FIS
F	IFR[A] — VFR	IFR:Advisory VFR:FIS
G	IFR — VFR	IFR:FIS VFR:FIS



Traffic Avoidance Advice


Common level of adjoining airspaces:
LESS RESTRICTIVE CLASS OF AIRSPACE.
FL285
FL200
CTA
A
TMA
A
A
A
C
C
D
C
G
Airway
A
D
D
D
G
CTR
A
D
D
MTZ
G-Military
G-Military
CTR
D
D
D
G
CTR
D
D
ATZ
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OIII
ATZ
D
OIIE
ATZ
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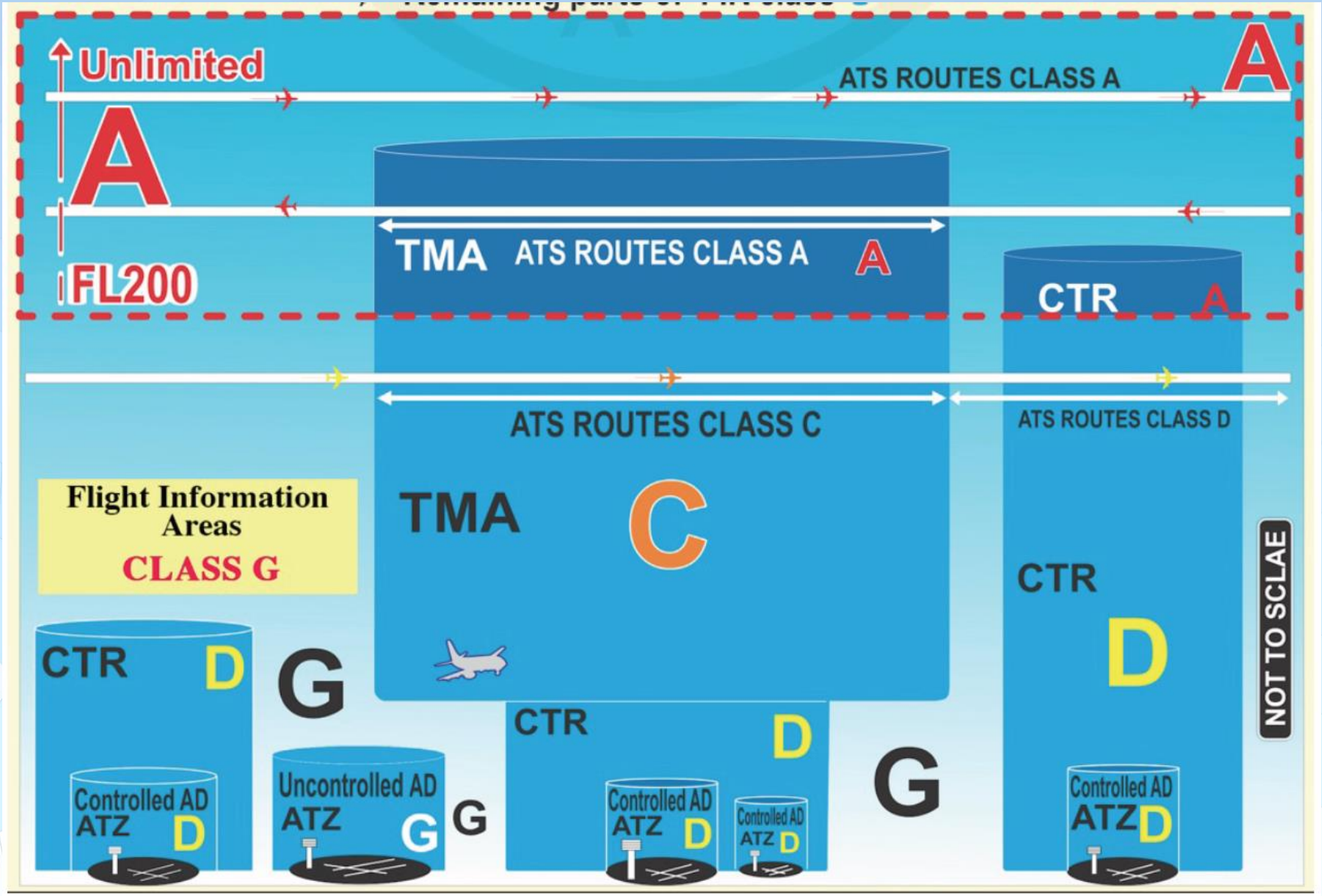
ATZ
D
OIHH
OIFS
OISL
OIBP
ATZ
G
OIBQ
OIIP
ATZ
D
OITT
OITL
OIBB
OIZC
OIAD
GND
Exceptions

Airspace Classification in Iran

- Airways above FL200 are class A, at FL200 and below are class D.
- CTAs above FL200 are class A, at FL 200 and below are class D.
- TMAs above FL200 are class A, at FL200 and below are class C.
- CTRs above FL200 are class A, at FL200 and are class D.
- ATZs are either class D or G as specified in AIP part 3 AD.
- Airspace outsides of airways, TMAs and CTRs are class G.

B, E, F are NOT USED in Iran


Unlimited
A
FL200
ATS ROUTES CLASS A
A
TMA
ATS ROUTES CLASS A
A
CTR
A
ATS ROUTES CLASS C
ATS ROUTES CLASS D
Flight Information Areas
CLASS G
TMA
C
CTR
D
G
CTR
D
Controlled AD
ATZ
D
Uncontrolled AD
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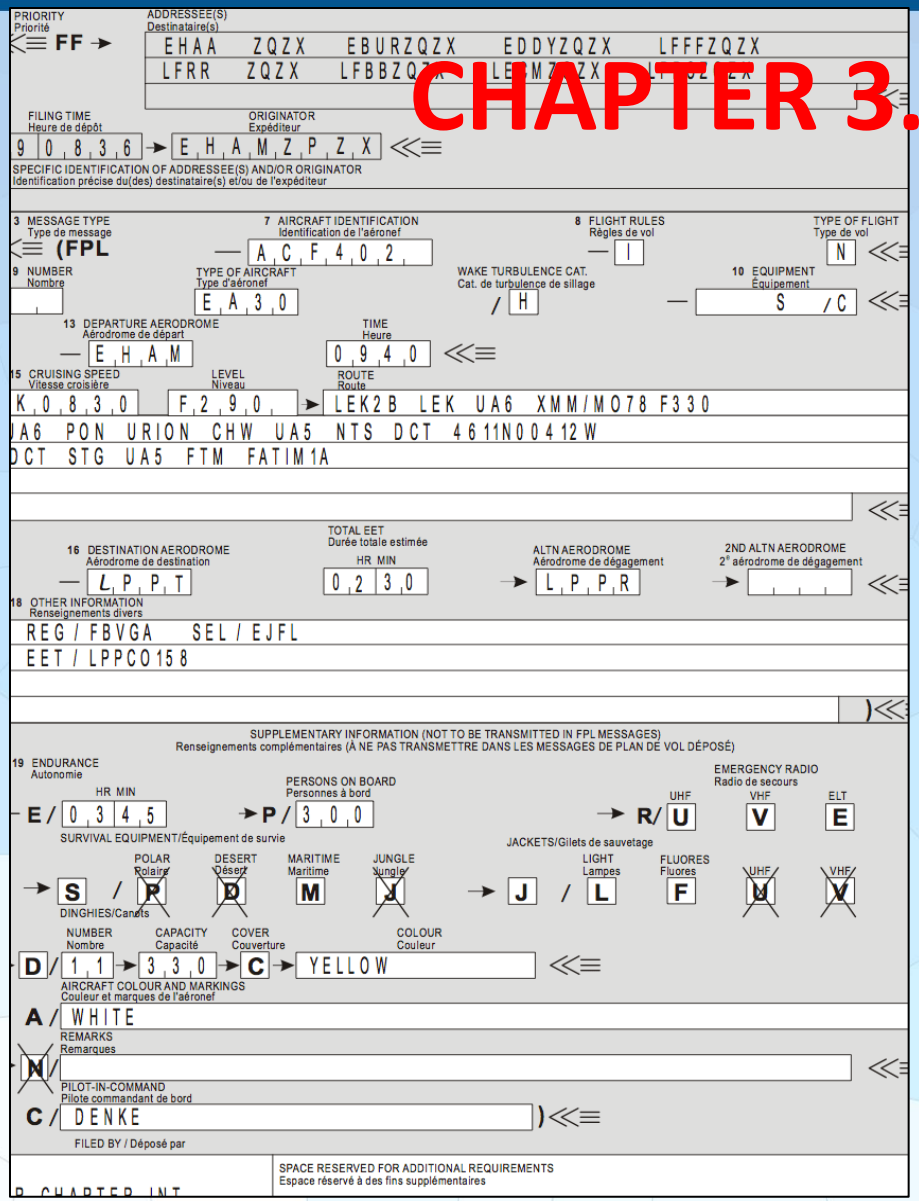
CHAPTER 3. GENERAL RULES


PRIORITY Priorité: FF
ADDRESSEE(S) Destinataire(s): EHAA ZQZX EBURZQZX EDDYZQZX LFFFZQZX
LFRR ZQZX LFBBZQZX LE[illegible]ZQZX
FILING TIME Heure de dépôt: 0836
ORIGINATOR Expéditeur: EHAMZPZX
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR
Identification précise du(des) destinataire(s) et/ou de l'expéditeur
3 MESSAGE TYPE Type de message: (FPL
7 AIRCRAFT IDENTIFICATION Identification de l'aéronef: ACF402
8 FLIGHT RULES Règles de vol: I
TYPE OF FLIGHT Type de vol: N
9 NUMBER Nombre:
TYPE OF AIRCRAFT Type d'aéronef: EA30
WAKE TURBULENCE CAT. Cat. de turbulence de sillage: /H
10 EQUIPMENT Équipement: S /C
13 DEPARTURE AERODROME Aérodrome de départ: EHAM
TIME Heure: 0940
15 CRUISING SPEED Vitesse croisière: K0830
LEVEL Niveau: F290
ROUTE Route: LEK2B LEK UA6 XMM/M078 F330
UA6 PON URION CHW UA5 NTS DCT 4611N00412W
DCT STG UA5 FTM FATIM1A
16 DESTINATION AERODROME Aérodrome de destination: LPPT
TOTAL EET Durée totale estimée HR MIN: 0230
ALTN AERODROME Aérodrome de dégagement: LPPR
2ND ALTN AERODROME 2e aérodrome de dégagement:
18 OTHER INFORMATION Renseignements divers
REG/FBVGA SEL/EJFL
EET/LPPC0158
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)
Renseignements complémentaires (À NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL DÉPOSÉ)
19 ENDURANCE Autonomie HR MIN: E/0345
PERSONS ON BOARD Personnes à bord: P/300
EMERGENCY RADIO Radio de secours: R/U UHF V VHF E ELT
SURVIVAL EQUIPMENT/Équipement de survie: S/ POLAR Polaire P DESERT Désert D MARITIME Maritime M JUNGLE Jungle J
DINGHIES/Canots
JACKETS/Gilets de sauvetage: J/ LIGHT Lampes L FLUORES Fluores F UHF U VHF V
NUMBER Nombre: D/11
CAPACITY Capacité: 330
COVER Couverture: C
COLOUR Couleur: YELLOW
AIRCRAFT COLOUR AND MARKINGS Couleur et marques de l'aéronef: A/WHITE
REMARKS Remarques: N/
PILOT-IN-COMMAND Pilote commandant de bord: C/DENKE
FILED BY / Déposé par
SPACE RESERVED FOR ADDITIONAL REQUIREMENTS Espace réservé à des fins supplémentaires

3.3 Flight plans

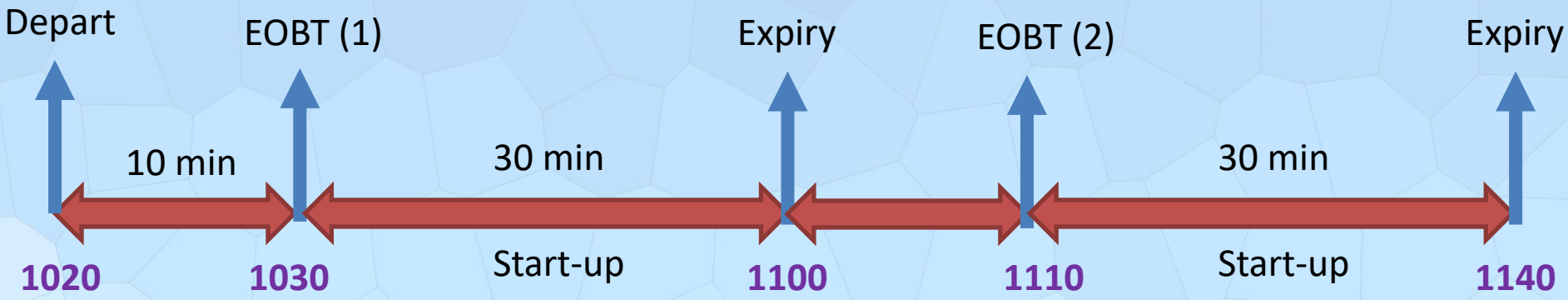
3.3.1 Submission of a flight plan

3.3.1.1 Information relative to an intended flight or portion of a flight, to be provided to air traffic services units, shall be in the form of a flight plan.

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

Flight Plan Criteria in Iran

Individual Flight Plan (FPL) | **Repetitive Flight Plan (RPL)** | **Current Flight Plan (CPL)**



Another DLA is acceptable only if the flight plan is filed on **efpl.airport.ir**

Start-up —10 min→ **Push back** / **Taxi** —1 min→ **Commence Movement**

Example: **1000** Start-up → **1010** Taxi → **1015** Line-up → **1020** Take-off

RPL Notes
At least 10 flights: • 10 consecutive days; or • Same days of consecutive weeks
Only for **IFR** flights
Only for **Domestic** flights

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.1 Submission of a flight plan

3.3.1.2 A flight plan shall be submitted prior to operating:

a) any flight or portion thereof to be provided with air traffic control service;

b) any IFR flight within advisory airspace;

c) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate the provision of ***flight information, alerting and search and rescue services***;

d) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate coordination with appropriate ***military units*** or with air traffic services units in ***adjacent States*** in order to avoid the possible need for interception for the purpose of identification;

e) any flight across ***international borders***.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.1 Submission of a flight plan

Note.— The term "flight plan" is used to mean variously, full information on all items comprised in the flight plan description, covering the whole route of a flight, or limited information required when the purpose is to obtain a clearance for a minor portion of a flight such as to cross an airway, to take off from, or to land at a controlled aerodrome.

Airway. A control area or portion thereof established in the form of a corridor.
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.
Control zone. A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.1 Submission of a flight plan

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

Air-ground control radio station. An aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area.

Repetitive flight plan (RPL). 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.

Operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Note.— In the context of remotely piloted aircraft, an aircraft operation includes the remotely piloted aircraft system.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.1 Submission of a flight plan

3.3.1.4 Unless otherwise prescribed by the appropriate ATS authority, a flight plan for a flight to be provided with air traffic control service or air traffic advisory service shall be submitted at least ***sixty minutes before departure***, or, if submitted during flight, at a time which will ensure its receipt by the appropriate air traffic services unit at least ***ten minutes before*** the aircraft is estimated to reach:

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

b) the point of crossing an airway or advisory route.

Advisory airspace. An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.

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

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.2 Contents of a flight plan

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

— Aircraft identification
— Flight rules and type of flight
— Number and type(s) of aircraft and wake turbulence category
— Equipment
— Departure aerodrome (see Note 1)
— Estimated off-block time (see Note 2)
— Cruising speed(s)
— Cruising level(s)
— Route to be followed
— Destination aerodrome and total estimated elapsed time
— Alternate aerodrome(s)
— Fuel endurance
— Total number of persons on board
— Emergency and survival equipment
— Other information.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.2 Contents of a flight plan

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

*Note 2.— For flight plans submitted during flight, the information to be provided in respect of **this item (Estimated off-block time)** will be the time over the first point of the route to which the flight plan relates.*

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

Estimated off-block time. The estimated time at which the aircraft will commence movement associated with departure.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.3 Completion of a flight plan

3.3.3.1 Whatever the purpose for which it is submitted, a flight plan shall contain information, as applicable, on relevant items up to and including "Alternate aerodrome(s)" regarding the whole route or the portion thereof for which the flight plan is submitted.

3.3.3.2 It shall, in addition, contain information, as applicable, on all other items when so prescribed by the appropriate ATS authority or when otherwise deemed necessary by the person submitting the flight plan.

Definition

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*** where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate aerodromes include the following:

Take-off alternate. An alternate aerodrome at which an aircraft would be able to land should (=if) this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

En-route alternate. An alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en route.

Destination alternate. An alternate aerodrome at which an aircraft would be able to land should (=if) 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.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.4 Changes to a flight plan

Subject to the provisions of **3.6.2.2 (Deviations from the current flight plan),** all changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported as soon as practicable to the appropriate air traffic services unit. For other VFR flights, ***significant changes*** to a flight plan shall be reported as soon as practicable to the appropriate air traffic services unit.

*Note.— 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.*

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

To which flight plan shall an aircraft shall adhere itself?

A) Current flight plan

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.5 Closing a flight plan

3.3.5.1 Unless otherwise prescribed by the appropriate ATS authority, a report of arrival shall be made ***in person***, by ***radiotelephony*** or via ***data link*** at the earliest possible moment after landing, to the appropriate air traffic services unit at the arrival aerodrome, by any flight for which a ***flight plan*** has been submitted covering the ***entire*** flight or the remaining portion of a flight ***to the destination*** aerodrome.

3.3.5.2 When a flight plan has been submitted only in respect of a portion of a flight, other than the remaining portion of a flight to destination, it shall, when required, be closed by an appropriate report to the relevant air traffic services unit.

Radiotelephony. A form of radiocommunication primarily intended for the exchange of information in the form of speech.

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.5 Closing a flight plan

3.3.5.3 When ***no air traffic services unit exists*** at the arrival aerodrome, the arrival report, when required, shall be made as soon as practicable after landing and by the ***quickest means available*** to the ***nearest air traffic services unit***.

3.3.5.4 When **communication facilities** at the arrival aerodrome are known to be ***inadequate*** and alternate arrangements for the handling of arrival reports on the ground are not available, the following action shall be taken. Immediately ***prior to landing*** the aircraft shall, if practicable, transmit to the appropriate air traffic services unit, a message comparable to an arrival report, where such a report is required. Normally, this transmission shall be made to the **aeronautical station** serving the air traffic services unit in charge of the ***flight information region*** in which the aircraft is operated.

Flight information region (FIR).

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

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.

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

CHAPTER 3. GENERAL RULES

3.3 Flight plans

3.3.5 Closing a flight plan

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

a) aircraft identification;

b) departure aerodrome;

c) destination aerodrome (only in the case of a diversionary landing);

d) arrival aerodrome;

e) time of arrival.

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

CHAPTER 3. GENERAL RULES

3.4 Signals

3.4.1 Upon observing or receiving any of the signals given in Appendix 1, aircraft shall take such action as may be required by the interpretation of the signal given in that Appendix.
3.4.2 The signals of Appendix 1 shall, when used, have the meaning indicated therein. They shall be used only for the purpose indicated and no other signals likely to be confused with them shall be used.
3.4.3 A signalman shall be responsible for providing standard marshalling(=guiding) signals to aircraft in a clear and precise manner using the signals shown in Appendix 1.

CHAPTER 3. GENERAL RULES

3.4 Signals

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

3.4.5 The signalman shall wear a distinctive fluorescent identification vest to allow the flight crew to identify that he or she is the person responsible for the marshalling operation.

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

CHAPTER 3. GENERAL RULES

3.5 Time

3.5.1 Coordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.
3.5.2 A time check shall be obtained ***prior to operating a controlled flight*** and at such other times during the flight as may be necessary.

Note.— Such time check is normally obtained from an air traffic services unit unless other arrangements have been made by the operator or by the appropriate ATS authority.

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.1 Air traffic control clearances

3.6.1.1 An air traffic control clearance shall be obtained **prior to operating a controlled flight**, or a ***portion*** of a flight as a controlled flight. Such clearance shall be requested through the submission of a flight plan to an air traffic control unit.

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

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

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.1 Air traffic control clearances

3.6.1.2 Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.

3.6.1.3 ***Potential reclearance in flight***. If prior to departure it is anticipated that depending on ***fuel endurance*** and subject to ***reclearance in flight (RIF)***, 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.

E.g. Item 18 of Flight Plan: **RIF/LAM G666 LVA W147 OIBK.**

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

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.2 Adherence to current flight plan

3.6.2.1 Except as provided for in 3.6.2.4 (*Weather deterioration below the VMC*), an aircraft shall adhere to the current flight plan or the applicable portion of an current flight plan for a controlled flight within the tolerances defined in paragraphs 3.6.2.1.1 to 3.6.2.2 unless a request for a change has been made and clearance obtained from the appropriate air traffic control unit, or unless an emergency situation arises which necessitates immediate action by the aircraft, in which event as soon as circumstances permit, after such emergency authority is exercised, the appropriate ***air traffic services unit shall be notified*** of the action taken and that this action has been taken under emergency authority.

CHAPTER 3. GENERAL RULES

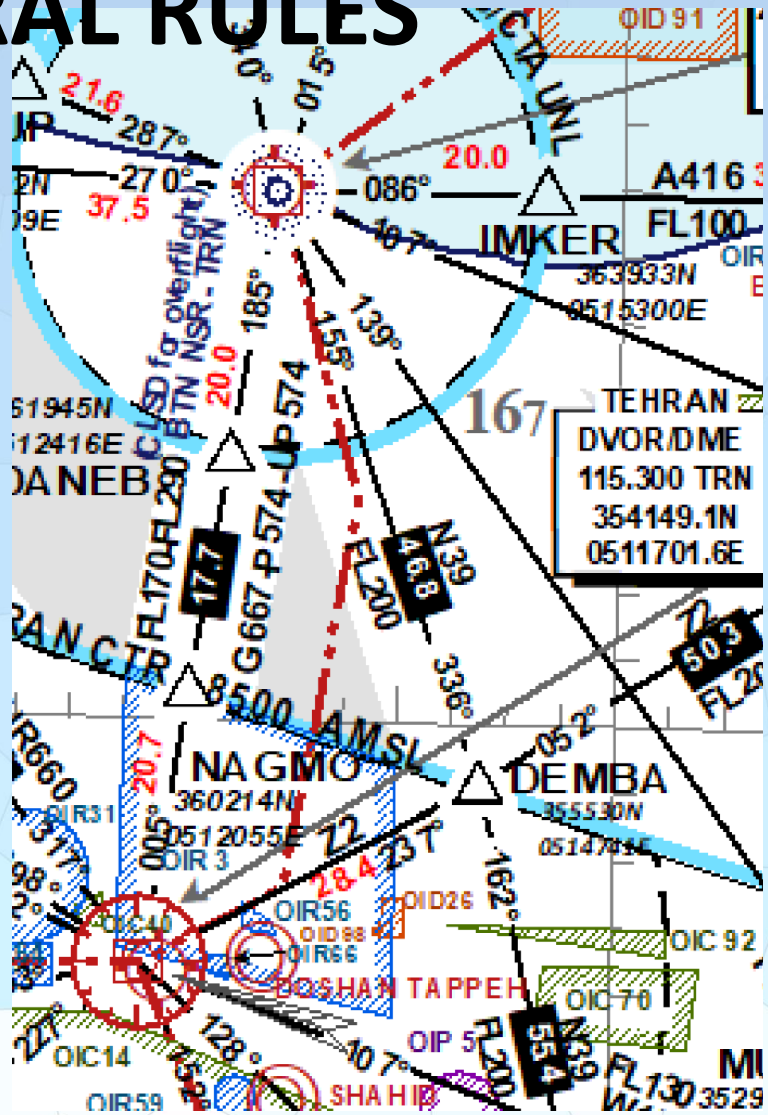
3.6 Air traffic control service

3.6.2 Adherence to current flight plan

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

a) when on an established ATS route, operate along the defined centre line of that route; or

b) when on any other route, operate directly between the navigation facilities and/or points defining that route.



CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

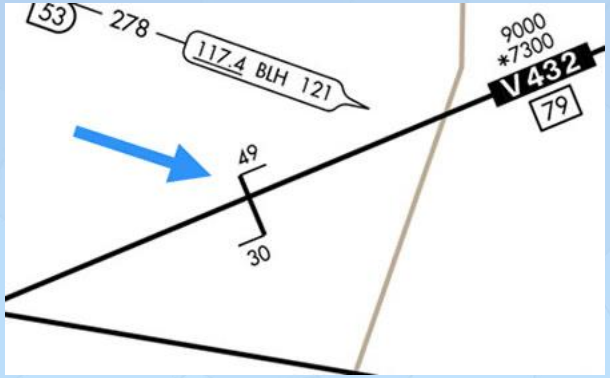
3.6.2 Adherence to current flight plan

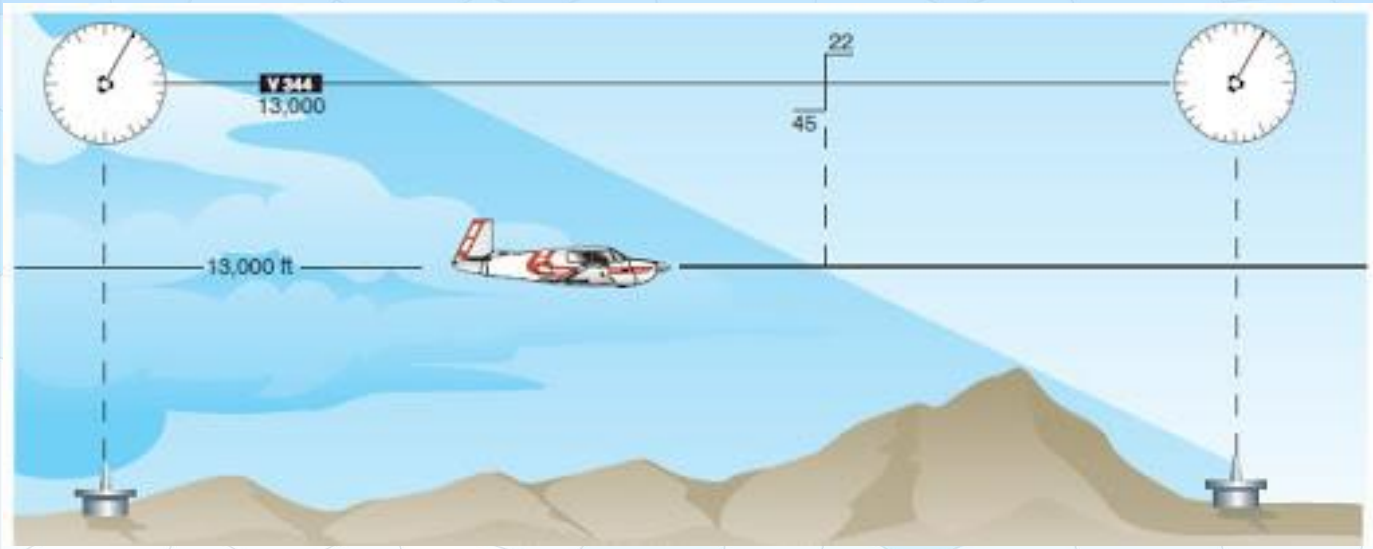
3.6.2.1.2 Subject to the overriding requirement in 3.6.2.1.1, an aircraft operating along an ATS route segment defined by reference to ***very high frequency omnidirectional radio ranges (VOR)*** shall change over for its primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the changeover point, where established.

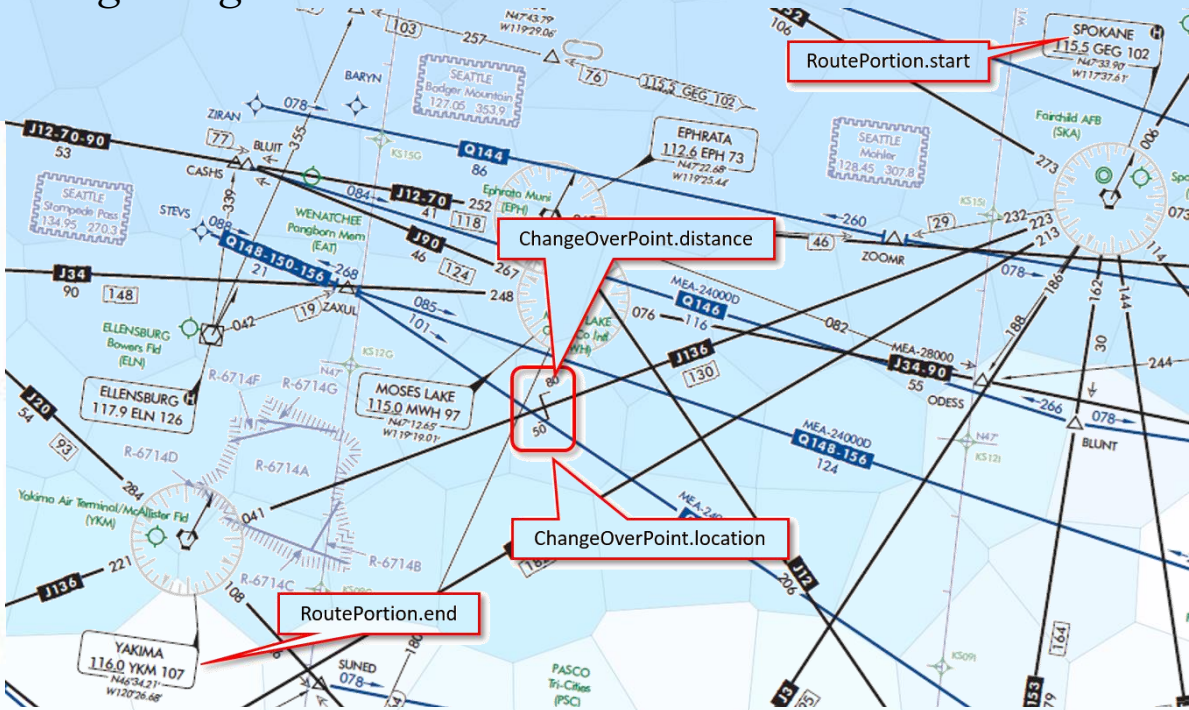
3.6.2.1.3 Deviation from the requirements in 3.6.2.1.1 shall be notified to the appropriate air traffic services unit.

Changeover 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.— Changeover 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.







DEFINITIONS

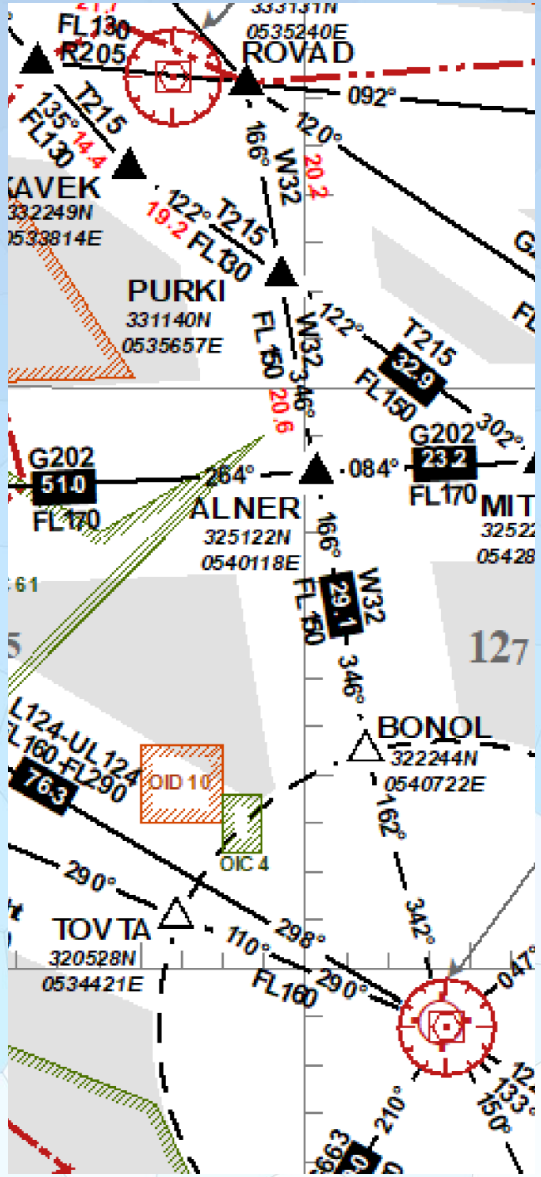
ATS route. A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

*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**.*

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.*



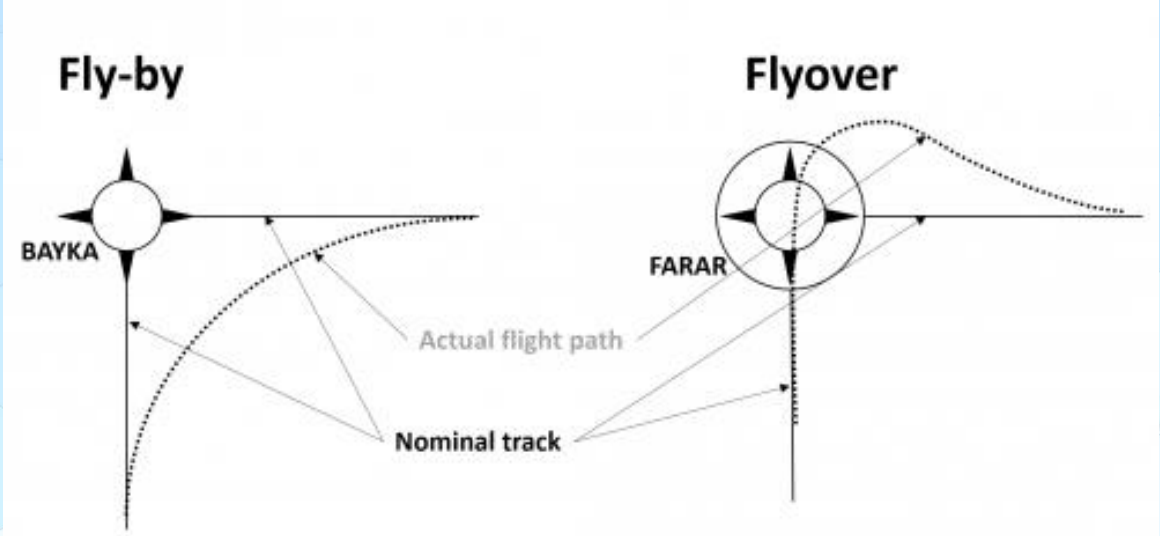
DEFINITIONS

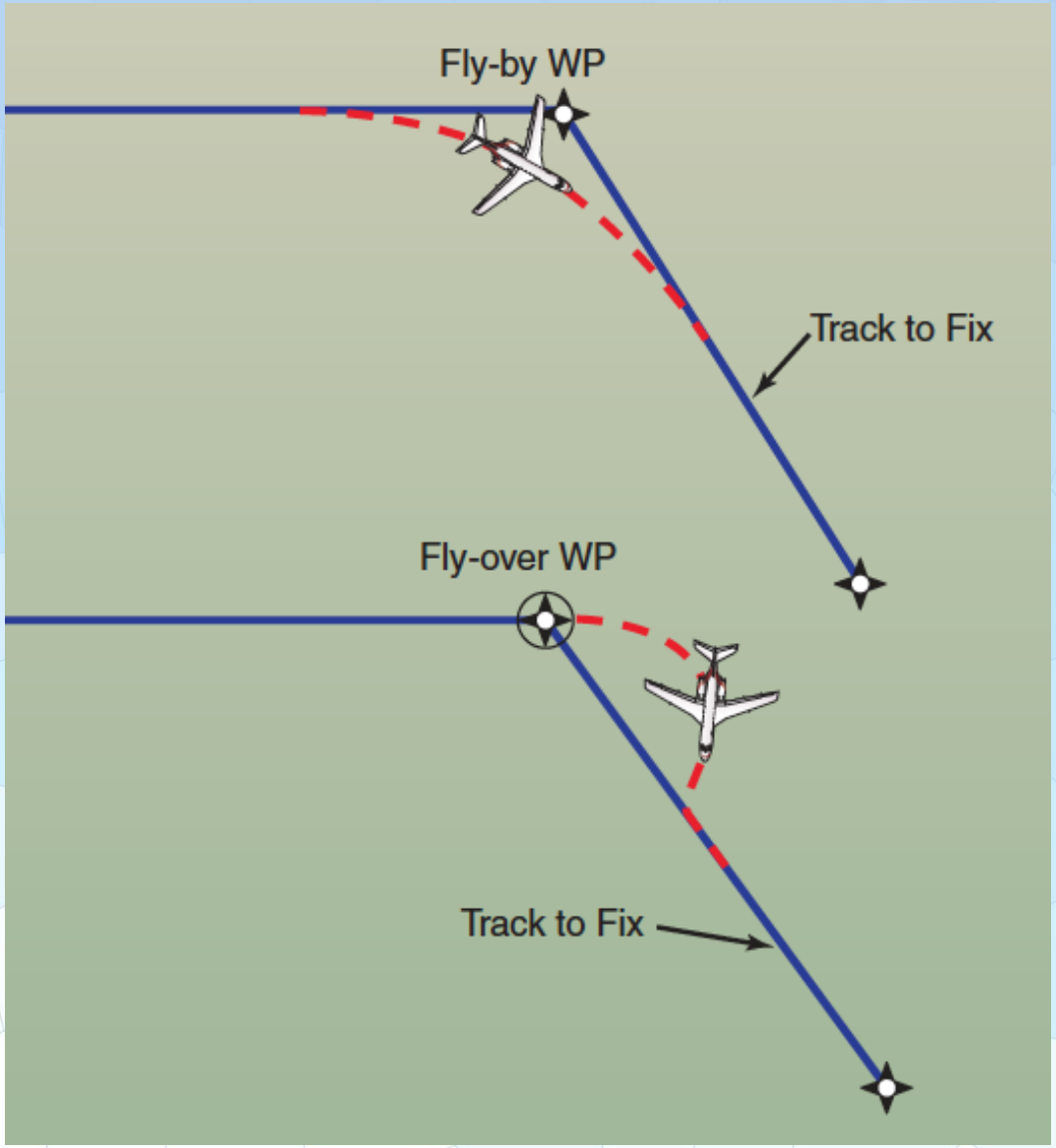
Waypoint. A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

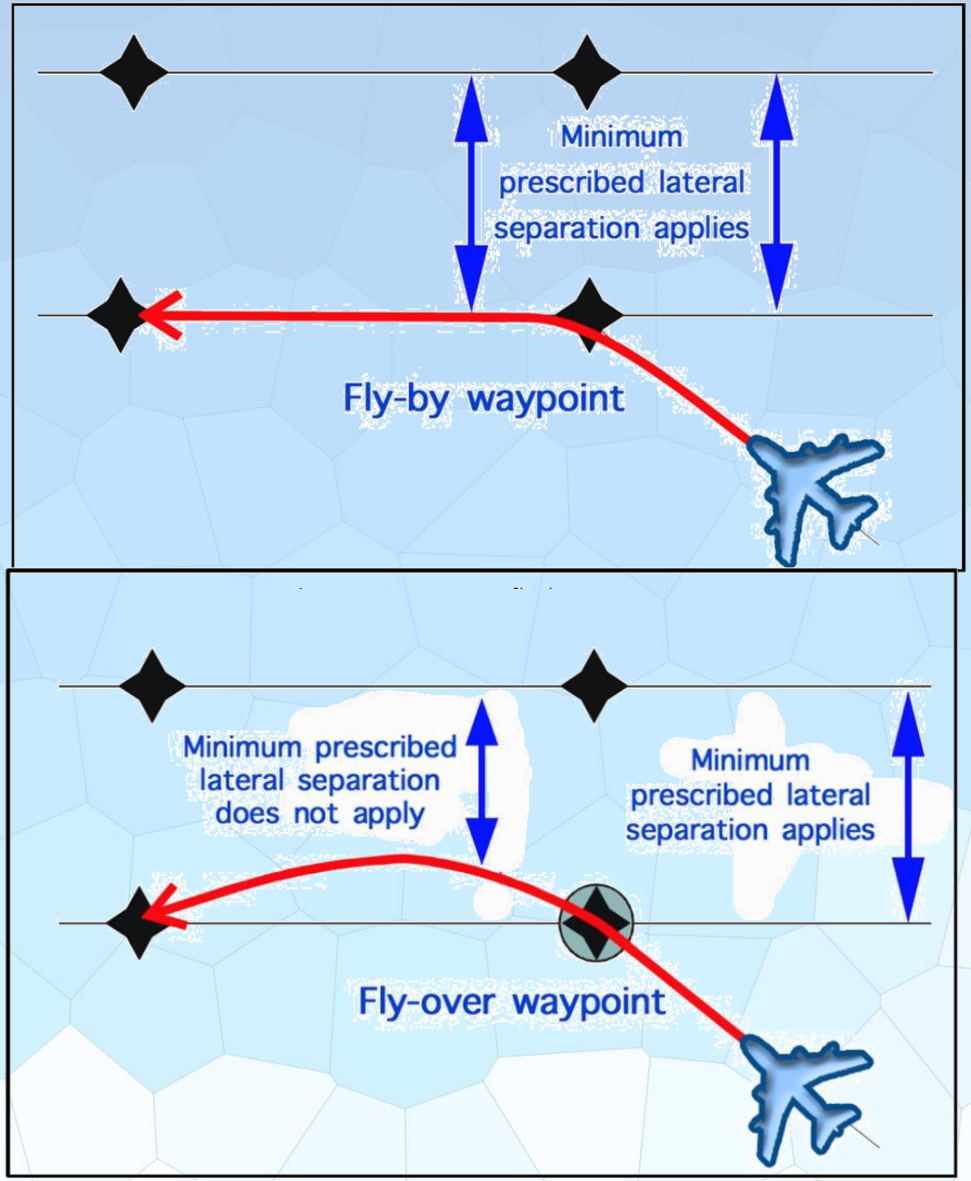
Fly-by waypoint. *A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or*

Flyover waypoint. *A waypoint at which a turn is initiated in order to join the next segment of a route or procedure.*

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).




Fly-by WP
Track to Fix
Fly-over WP
Track to Fix


Minimum
prescribed lateral
separation applies
Fly-by waypoint
Minimum prescribed
lateral separation
does not apply
Minimum
prescribed lateral
separation applies
Fly-over waypoint

CHAPTER 3. GENERAL RULES

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

a) Deviation from track: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.

b) Deviation from ATC assigned Mach number/***indicated*** airspeed: the appropriate air traffic services unit shall be informed immediately.

c) Deviation from Mach number/***true*** airspeed: if the sustained Mach number/true airspeed at cruising level varies by plus or minus Mach 0.02 or more, or plus or minus 10kt true airspeed or more from the current flight plan, the appropriate air traffic services unit shall be so informed.

d) Change in time estimate: except where ADS-C is activated and serviceable in airspace where ADS-C services are provided, if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, changes in excess of 2 minutes from that previously notified to air traffic services, or such other period of time as is prescribed by the appropriate ATS authority or on the basis of regional air navigation agreements, the flight crew shall notify the appropriate air traffic services unit as soon as possible.

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.2 Adherence to current flight plan

3.6.2.2.1 When ADS-C services are provided and ADS-C is activated, the air traffic services unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.

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.

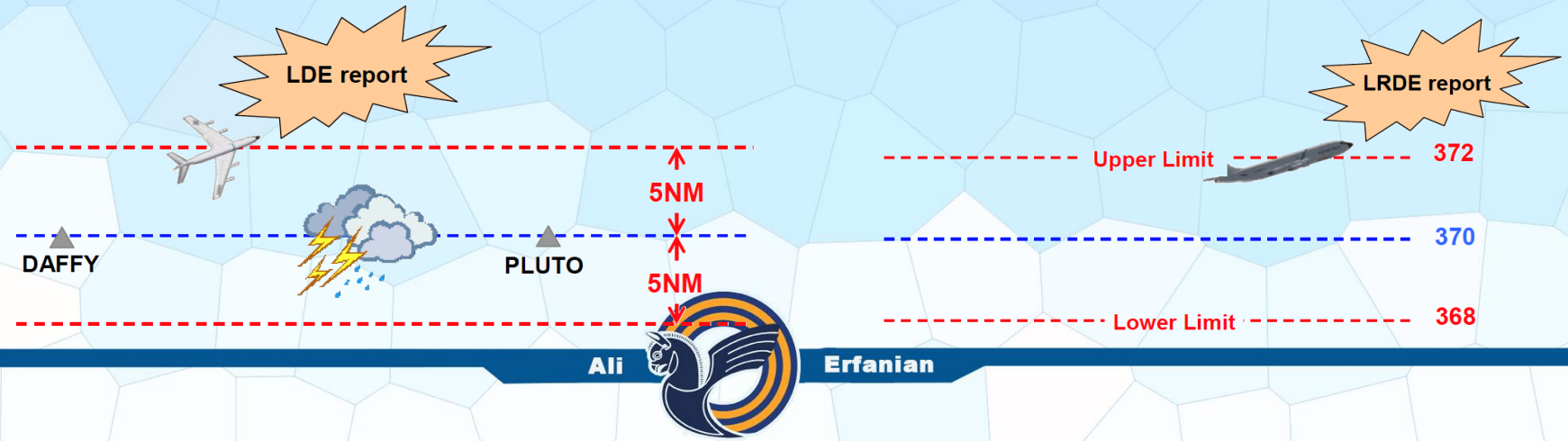
Note.— The abbreviated term "ADS contract" is commonly used to refer to ADS ***event*** contract, ADS ***demand*** contract, ADS ***periodic*** contract or an ***emergency*** mode.

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.

ADS contracts

- **Periodic contract**
  - time interval (between 1 second and 4,096 seconds)
  - optional ADS-C groups
- **Demand contract** (request a single ADS-C periodic report)
- **Event contract**
  - Waypoint change event (WCE). e.g. direct routing/lateral offset
  - Level range deviation event (LRDE). define lower & upper limits
  - Lateral deviation event (LDE). define a lateral deviation threshold (e.g.5NM)
  - Vertical rate change event (VRE). Positive (climb)/negative (descent)



CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.2 Adherence to current flight plan

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

a) *Change of cruising level*: aircraft identification; requested new cruising level and cruising Mach number/true airspeed at this level; revised time estimates (when applicable) at subsequent reporting points or flight information region boundaries.

b) *Change of Mach number/true airspeed*: aircraft identification; requested Mach number/true airspeed.

c) *Change of route:*

1) Destination unchanged: aircraft identification; flight rules; description of new route of flight including related flight plan data beginning with the position from which requested change of route is to commence; revised time estimates; any other pertinent information.

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.2 Adherence to current flight plan

3.6.2.4 ***Weather deterioration below the VMC.*** When it becomes evident that flight in VMC in accordance with its current flight plan will not be practicable, a VFR flight operated as a ***controlled flight*** shall:

a) request an amended clearance enabling the aircraft to continue in VMC to destination or to an alternative aerodrome, or to leave the airspace within which an ATC clearance is required; or

b) if no clearance in accordance with a) can be obtained, continue to operate in VMC and notify the appropriate ATC unit of the action being taken either to leave the airspace concerned or to land at the nearest suitable aerodrome; or

c) if operated within a control zone, request authorization to operate as a ***special VFR*** flight; or

d) request clearance to operate in accordance with the ***instrument flight rules***.

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.3 Position reports

3.6.3.1 Unless exempted by the appropriate ATS authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated ***compulsory reporting point***, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the appropriate ATS authority or specified by the appropriate air traffic services unit.

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

CHAPTER 3. GENERAL RULES

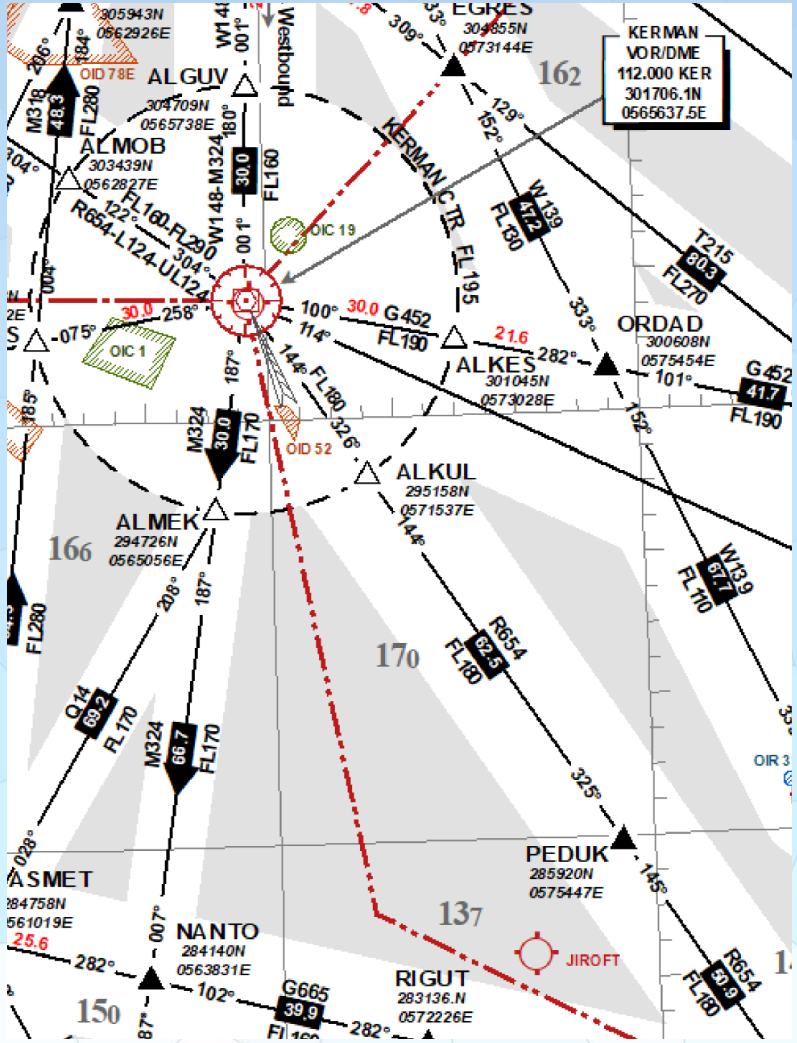
3.6 Air traffic control service

3.6.4 Termination of control

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

LEAVING CONTROLLED AIRSPACE (or CONTROL ZONE) [VIA (significant point or route)] AT (level) (or CLIMBING, or DESCENDING);

Leaving Controlled airspace via PEDUK at FL180 descending to FL130.



CHAPTER 3. GENERAL RULES

3.6 Air traffic control service
3.6.5 Communications

3.6.5.1 An aircraft operated as a controlled flight shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and establish two-way communication as necessary with, the appropriate air traffic control unit, except as may be prescribed by the appropriate ATS authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

Note 1.— SELCAL or similar automatic signaling devices satisfy the requirement to maintain an air-ground voice communication watch.

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service
3.6.5 Communications

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

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.5 Communications

3.6.5.2.1 If in visual meteorological conditions, the aircraft shall:

a) continue to fly in visual meteorological conditions; land at the nearest suitable aerodrome; and report its arrival by the most expeditious means to the appropriate air traffic services unit;

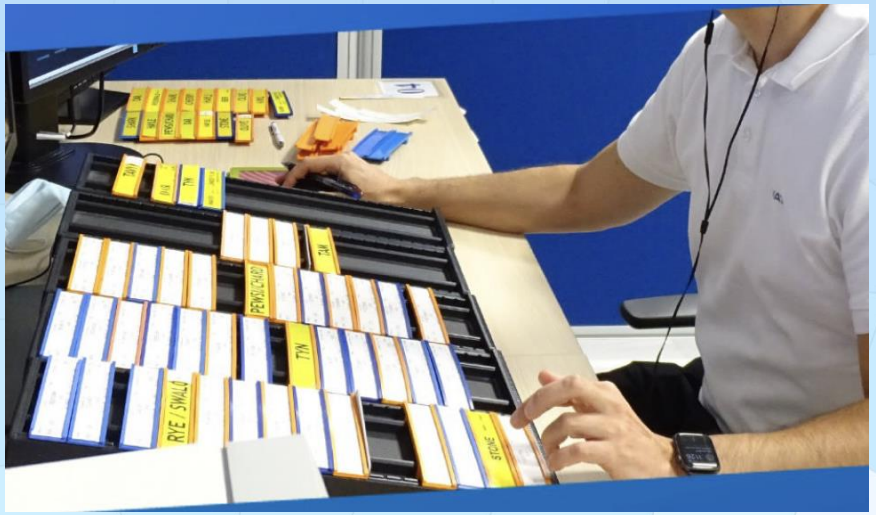
b) if considered advisable, complete an IFR flight in accordance with 3.6.5.2.2.

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service
3.6.5 Communications

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

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



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

The rest in the next slide

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service
3.6.5 Communications

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

b) in airspace where radar is used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of ***7 minutes*** following:

1) the time the last assigned level or minimum flight altitude is reached; or

2) the time the transponder is set to Code 7600; or

3) the aircraft's failure to report its position over a compulsory reporting point;

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

The rest in the next slide

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.5 Communications

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

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) proceed according to the ***current flight plan route*** to the appropriate designated navigation aid or fix serving the destination aerodrome and, when required to ensure compliance with e) below, hold over this aid or fix until commencement of descent;

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within thecoverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

The rest in the next slide

CHAPTER 3. GENERAL RULES

3.6 Air traffic control service

3.6.5 Communications

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

e) commence descent from the navigation aid or fix specified in d) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival resulting from the current flight plan;

f) complete a normal instrument approach procedure as specified for the designated navigation aid or fix; and

g) land, if possible, ***within 30 minutes*** after the estimated time of arrival specified in e) or the last acknowledged expected approach time, whichever is ***later***.

Definition

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.

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 (=IAF), 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.

Definition

Instrument approach procedure. 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:

Non-precision approach (NPA) procedure. An instrument approach procedure designed for ***2D*** instrument approach operations.

Approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations.

Precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations.

Definition

Instrument approach operations. An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note.— Lateral and vertical navigation guidance refers to the guidance provided either by:

a) a ground-based radio navigation aid; or

b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

CHAPTER 3. GENERAL RULES

3.7 Unlawful interference

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

3.7.2 If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the appropriate authority unless considerations aboard the aircraft dictate otherwise.

ATTACHMENT B. UNLAWFUL INTERFERENCE

1. General

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

ATTACHMENT B. UNLAWFUL INTERFERENCE

2. Procedures

2.1 If the pilot-in-command cannot proceed to an aerodrome in accordance with the rules in Chapter 3, 3.7.2 (land as soon as practicable at the nearest suitable aerodrome), 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.

ATTACHMENT B. UNLAWFUL INTERFERENCE

2. Procedures

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

a) attempt to ***broadcast warnings*** on the VHF channel in use or the VHF emergency frequency, and other appropriate channels, unless considerations aboard the aircraft dictate otherwise. Other equipment such as on-board ***transponders*** and ***data links*** should also be used when it is advantageous to do so and circumstances permit; and

b) proceed in accordance with applicable special procedures for in-flight contingencies, where such procedures have been established and promulgated in the Regional Supplementary Procedures (Doc 7030); or

ATTACHMENT B. UNLAWFUL INTERFERENCE

2. Procedures

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

c) if no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for IFR flight by:

1) 150 m (500 ft) in an area where a vertical separation minimum of 300 m (1 000 ft) is applied; or

2) 300 m (1 000 ft) in an area where a vertical separation minimum of 600 m (2 000 ft) is applied.

AIP: 3. SSR Transponder operation procedure

3.1 Should an aircraft in flight be subject to unlawful interference, the pilot-in-command shall endeavour to set the transponder to Mode A, Code 7500 to give indication of the situation unless circumstances warrant the use of Code 7700.

CHAPTER 3. GENERAL RULES

3.8 Interception

3.8.1 Interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Contracting States in compliance with the Convention on International Civil Aviation, and in particular **Article 3(d)** under which Contracting States undertake, when issuing regulations for their State aircraft, to have due regard for the ***safety of navigation of civil aircraft***. Accordingly, in drafting appropriate regulations and administrative directives due regard shall behad to the provisions of Appendix 1, Section 2 and Appendix 2, Section 1.

CHAPTER 3. GENERAL RULES

3.8 Interception

Note.— Recognizing that it is essential for the safety of flight that any visual signals employed in the event of an interception which should be undertaken only as a last resort be correctly employed and understood by civil and military aircraft throughout the world, the Council of the ICAO, when adopting the visual signals in Appendix 1 to this Annex, urged Contracting States to ensure that they be strictly adhered to by their State aircraft.

As interceptions of civil aircraft are, in all cases, potentially hazardous, the Council has also formulated special recommendations which Contracting States are urged to apply in a uniform manner. These special recommendations are contained in Attachment A.

CHAPTER 3. GENERAL RULES

3.8 Interception

3.8.2 The pilot-in-command of a civil aircraft, when intercepted, shall comply with the Standards in Appendix 2, Sections 2 and 3, interpreting and responding to visual signals as specified in Appendix 1, Section 2.

Appendix 1

2. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

2.1 Signals initiated by intercepting aircraft and responses by intercepted aircraft

INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1— Rocking aircraft and flashing navigational lights at irregular intervals from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft and, after acknowledgement, a slow level turn, normally to the left.	You have been intercepted. Follow me.	Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.

Appendix 1

2. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

2.1 Signals initiated by intercepting aircraft and responses by intercepted aircraft

INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
2— 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.	Rocking the aircraft.	Understood, will comply.

Appendix 1

2. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

2.1 Signals initiated by intercepting aircraft and responses by intercepted aircraft

INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
3— Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use.	Land at this aerodrome.	Lowering landing gear, showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use, landing is considered safe, proceeding to land.	Understood, will comply.

Appendix 1

2. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

2.2 Signals initiated by intercepted aircraft and responses by intercepting aircraft

INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4— Raising landing gear and flashing landing lights while passing over runway in use at a height exceeding 1000ft but not exceeding 2000ft above the aerodrome level, and continuing to circle runway in use.	Aerodrome you have designated is inadequate.	To take intercepted aircraft to an alternate aerodrome, use the Series 1 signals for intercepting aircraft. To release the intercepted aircraft, use the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.

Appendix 1

2. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

2.2 Signals initiated by intercepted aircraft and responses by intercepting aircraft

103- Which signal may be initiated by, an intercepted aircraft which is in distress?

A) Irregular flashing landing lights

B) Irregular flashing navigation lights

C) Regular flashing all lights

D) Irregular flashing all available lights

INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
5— Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights. 6—Irregular flashing of all available lights.	In distress.	Use Series 2 signals prescribed for intercepting aircraft.	Understood,

Appendix 2

INTERCEPTION OF CIVIL AIRCRAFT

1. Principles to be observed by States

1.1 To achieve the uniformity in regulations which is necessary for the safety of navigation of civil aircraft, due regard shall be had by Contracting States to the following principles when developing regulations and administrative directives:

a) interception of civil aircraft will be undertaken only as a last resort;

b) if undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome;

c) practice interception of civil aircraft will not be undertaken;

d) navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and

e) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

Appendix 2

INTERCEPTION OF CIVIL AIRCRAFT

1. Principles to be observed by States

*Note.— "Every State must refrain from resorting to the use of **weapons** against civil aircraft in flight".*

1.3 Contracting States shall ensure that provision is made for the use of secondary surveillance radar or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.

> ***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.

Appendix 2

2. Action by intercepted aircraft

2.1 An aircraft which is intercepted by another aircraft shall immediately:

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

b) notify, if possible, the appropriate air traffic services unit;

c) attempt to establish 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**.

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.

Appendix 2

2. Action by intercepted aircraft

2.2 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

2.3 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.

3. Radiocommunication during interception

If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table A2-1 and transmitting each phrase twice:

Appendix 2

Phrases for use by INTERCEPTING aircraft		
Phrase	*Pronunciation*[1]	*Meaning*
CALL SIGN	KOL SA-IN	What is your call sign?
FOLLOW	FOL-LO	Follow me
DESCEND	DEE-SEND	Descend for landing
YOU LAND	YOU LAAND	Land at this aerodrome
PROCEED	PRO-SEED	You may proceed

Phrases for use by INTERCEPTED aircraft		
Phrase	*Pronunciation*[1]	*Meaning*
CALL SIGN (call sign)[2]	KOL SA-IN (call sign)	My call sign is (call sign)
WILCO Will comply	VILL-KO	Understood
CAN NOT	KANN NOTT	Unable to comply
REPEAT	REE-PEET	Repeat your instruction
AM LOST	AM LOSST	Position unknown
MAYDAY	MAYDAY	I am in distress
HIJACK[3]	HI-JACK	I have been hijacked
LAND (place name)	LAAND (place name)	I request to land at (place name)
DESCEND	DEE-SEND	I require descent

ATTACHMENT A.

INTERCEPTION OF CIVIL AIRCRAFT

3.2 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 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.

Pressure-altitude. An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere

ATTACHMENT A.

INTERCEPTION OF CIVIL AIRCRAFT

3.3 Manoeuvres for visual identification

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.

ATTACHMENT A.
INTERCEPTION OF CIVIL AIRCRAFT

3.3 Manoeuvres for visual identification

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.
Upon completion of identification, the intercepting aircraft should withdraw from the vicinity of the intercepted aircraft as outlined in
Phase III.

Phase III

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

ATTACHMENT A.

INTERCEPTION OF CIVIL AIRCRAFT

3.4 Manoeuvres for navigational guidance

3.4.2 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given.

If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series 1 signal in Appendix 1, Section 2, are unsuccessful, other methods of signalling may be used for this purpose, including as a last resort the visual effect of the **reheat/afterburner**, provided that no hazard is created for the intercepted aircraft.

ATTACHMENT A.

INTERCEPTION OF CIVIL AIRCRAFT

4. Guidance of an intercepted aircraft

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

a) the designated aerodrome is ***suitable*** for the safe landing of the aircraft type concerned;

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***.

Aeronautical Information Publication (AIP). A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

ATTACHMENT A.
INTERCEPTION OF CIVIL AIRCRAFT

7. Radiocommunication between the intercept control unit or the intercepting aircraft and the intercepted aircraft

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

a) first attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121.5 MHz, using the call signs "***INTERCEPT CONTROL***", "***INTERCEPTOR*** (call sign)" and "***INTERCEPTED AIRCRAFT***" respectively; and

b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the appropriate ATS authority, or to establish contact through the appropriate ATS unit(s).

CHAPTER 3. GENERAL RULES

3.9 VMC visibility and distance from cloud minima

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

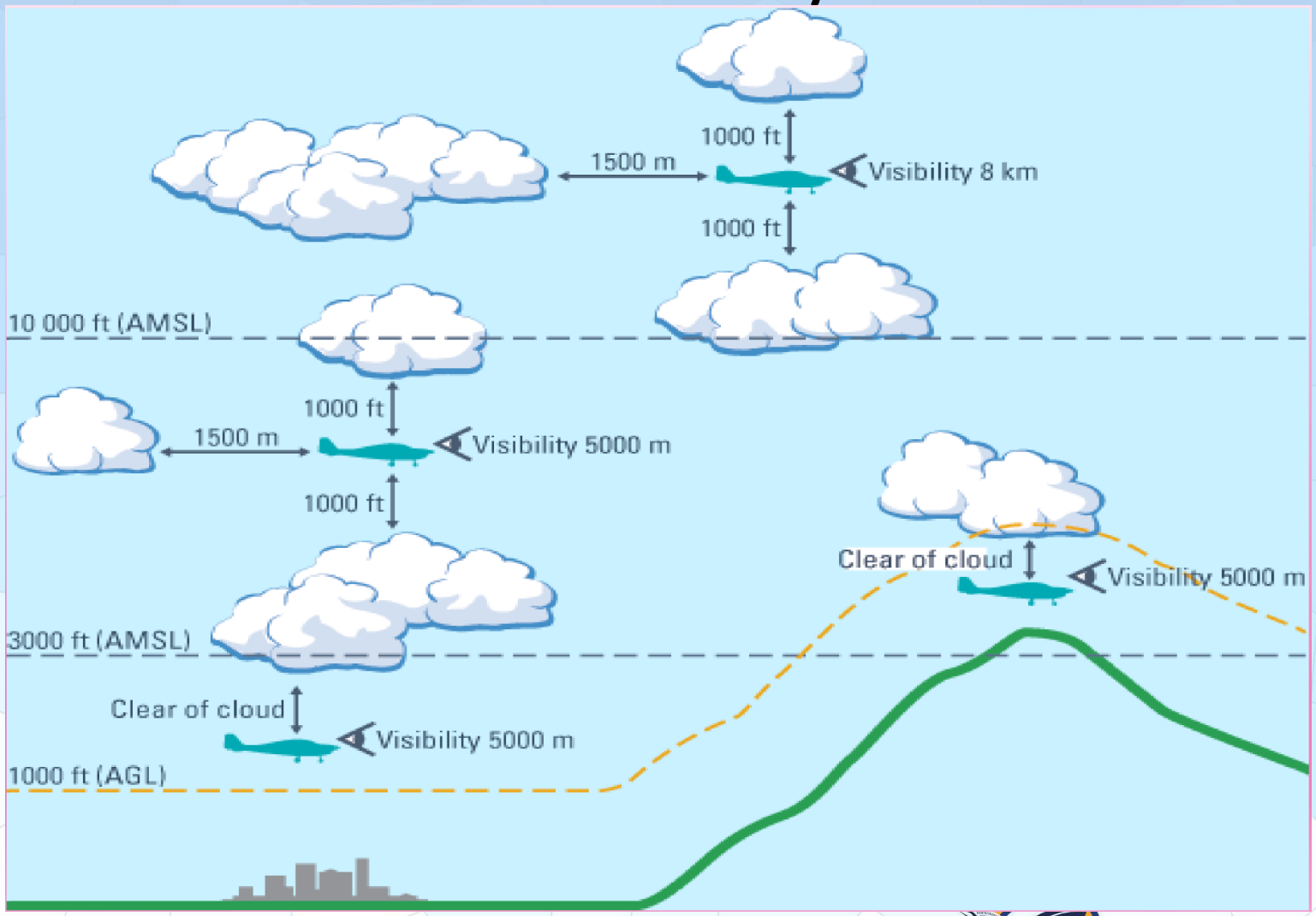
Altitude band	Airspace class	Flight visibility	Distance from cloud
At and above 3 050 m (10 000 ft) AMSL	A*** B C D E F G	8 km	1 500 m horizontally 300 m (1 000 ft) vertically
Below 3 050 m (10 000 ft) AMSL and above 900 m (3 000 ft) AMSL, or above 300 m (1 000 ft) above terrain, whichever is the higher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

Example: An aircraft is at 12000 ft in class F airspace (VFR). The required distance from cloud is 1500 m horizontally and 1000 ft vertically.

Example : A VFR flight when flying inside an ATS airspace classified as B below 3050 m (10000 ft) AMSL, has to maintain 5 km flight visibility, 1500 m horizontal and 300 m vertical from clouds.

CHAPTER 3. GENERAL RULES

3.9 VMC visibility and distance from cloud minima



Example: A flight under VFR in class G airspace at 2000 ft AMSL at 200 kts has to maintain flight visibility of 5 km, clear of cloud and surface in sight.

Example: An aircraft flying above the sea between 4500 feet MSL and 9000 feet MSL outside controlled airspace under VFR, must remain on principle at least 1500 m horizontally, 1000 feet vertically from clouds; 5 km visibility.

Example: At or above 3050 m (10000 ft) AMSL, The VMC minima for a VFR flight inside an ATS airspace classified as B, is 8 km visibility when and 1500 m horizontal and 300 m vertical from clouds.

ENR 1.2 VISUAL FLIGHT RULES

Fixed Wings Aircraft

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

ENR 1.2 VISUAL FLIGHT RULES

Helicopters

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

CHAPTER 4.

VISUAL FLIGHT RULES

CHAPTER 4. VISUAL FLIGHT RULES

4.1 Except when operating as a special VFR flight, VFR flights shall be conducted so that the aircraft is flown in conditions of visibility and distance from clouds equal to or greater than those specified in Table 3-1.

4.2 Except when a clearance is obtained from an air traffic control unit, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or traffic pattern:

a) when the ceiling is less than 1 500 ft; or

b) when the ground visibility is less than 5 km.

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

AIP ENR 1.2-3: SVFR

3.1 In aerodrome which is located within CTR, special VFR flights may be authorized to enter a control zone for the purpose of **landing**, **take off** and depart from a control zone, **cross** a control zone or operate **locally** within a control zone the following provisions:

1) during **daylight**;

2) **ground** visibility, in intended direction of flight is not less than **1500 meters**;

3) the **ceiling** is not less than 180 m (**600 ft**).

4) **requested individually by the Pilot**;

5) traffic conditions permit; and

6) approved by unit providing **approach control service**.

7) fly at a speed of **140 kts IAS or less**;

8) the **flight** visibility is not less than **1 500 m or, for helicopters, not less than 800 m**

3.2 The pilots of VFR flights shall remain at all times in flight conditions, which enable the pilot to determine his flight path and to keep clear of obstacles and cloud with the **surface in sight**.

3.4 **No** special VFR operation shall be authorized in any **aerodrome traffic circuit**.

Phraseologies for SVFR

- a) when the destination is located outside the control zone

(CALL-SIGN) CLEARED SPECIAL VFR UPTO CTR BOUNDARY TOWARD (DESTINATION) VIA [SECTOR]NOT ABOVE (LEVEL) INSIGHT OF SURFACE.

- b) when the destination is located within the control zone

(CALL-SIGN) CLEARED SPECIAL VFR WITHIN CONTROL ZONE TO (DESTINATION) VIA [SECTOR]NOT ABOVE (LEVEL) INSIGHT OF SURFACE.

CLEARED TO ENTER/OUT OF/THROUGH, (name) CTR, MAINTAIN SPECIAL V-F-R CONDITIONS, AT OR BELOW (altitude below 10,000 feet MSL)

CHAPTER 4. VISUAL FLIGHT RULES

4.3 VFR flights between sunset and sunrise, or such other period between sunset and sunrise as may be prescribed by the appropriate ATS authority, shall be operated in accordance with the conditions prescribed by such authority.

4.4 Unless authorized by the appropriate ATS authority, VFR flights shall not be operated:

a) **above FL200**;

b) at **transonic and supersonic speeds.**

4.5 Authorization for VFR flights to operate **above FL 290** shall not be granted in areas where a vertical separation minimum of 300 m (1000 ft) is applied above FL 290.

APPENDIX 3. TABLES OF CRUISING LEVELS

RVSM

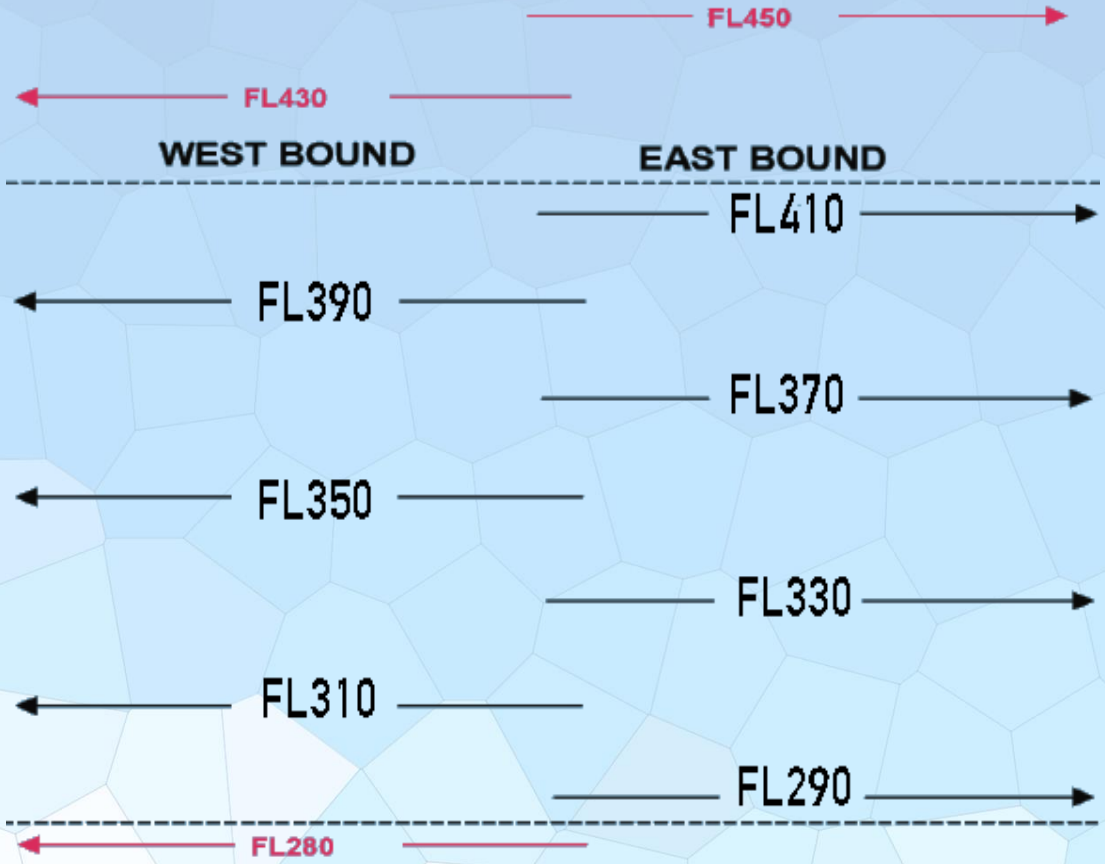
TRACK**											
From 000 degrees to 179 degrees***						From 180 degrees to 359 degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres
010	1 000	300	–	–	–	020	2 000	600	–	–	–
030	3 000	900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

The lowest flight level for VFR is FL35.

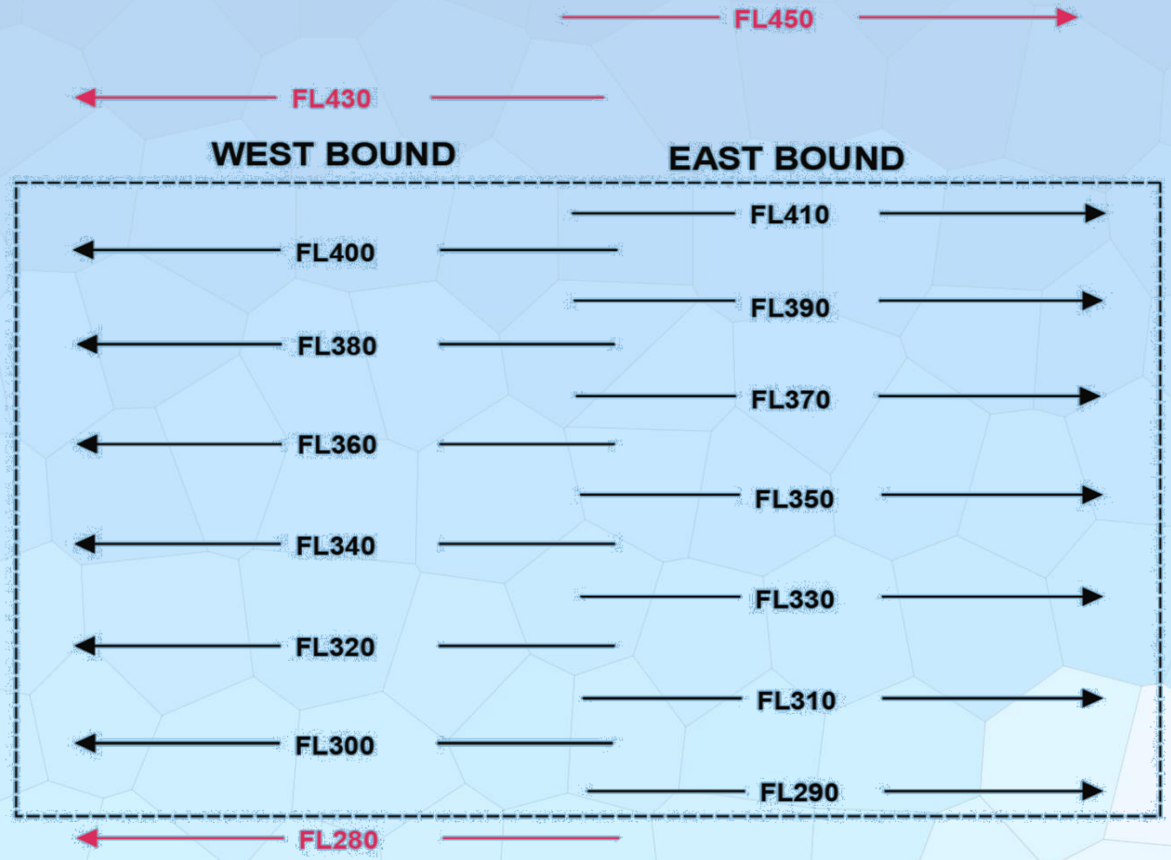
APPENDIX 3. TABLES OF CRUISING LEVELS

Non-RVSM

TRACK*												
From 000 degrees to 179 degrees**						From 180 degrees to 359 degrees**					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres
010	1 000	300	–	–	–	020	2 000	600	–	–	–
030	3 000	900	035	3 500	1 050	040	4 000	1 200	045	4 500	1 350
050	5 000	1 500	055	5 500	1 700	060	6 000	1 850	065	6 500	2 000
070	7 000	2 150	075	7 500	2 300	080	8 000	2 450	085	8 500	2 600
090	9 000	2 750	095	9 500	2 900	100	10 000	3 050	105	10 500	3 200
110	11 000	3 350	115	11 500	3500	120	12 000	3 650	125	12 500	3 800
130	13 000	3 950	135	13 500	4 100	140	14 000	4 250	145	14 500	4 400
150	15 000	4 550	155	15 500	4 700	160	16 000	4 900	165	16 500	5 050
170	17 000	5 200	175	17 500	5 350	180	18 000	5 500	185	18 500	5 650
190	19 000	5 800	195	19 500	5 950	200	20 000	6 100	205	20 500	6 250
210	21 000	6 400	215	21 500	6 550	220	22 000	6 700	225	22 500	6 850
230	23 000	7 000	235	23 500	7 150	240	24 000	7 300	245	24 500	7 450
250	25 000	7 600	255	25 500	7 750	260	26 000	7 900	265	26 500	8 100
270	27 000	8 250	275	27 500	8 400	280	28 000	8 550	285	28 500	8 700
290	29 000	8 850	300	30 000	9 150	310	31 000	9 450	320	32 000	9 750
330	33 000	10 050	340	34 000	10 350	350	35 000	10 650	360	36 000	10 950
370	37 000	11 300	380	38 000	11 600	390	39 000	11 900	400	40 000	12 200
410	41 000	12 500	420	42 000	12 800	430	43 000	13 100	440	44 000	13 400
450	45 000	13 700	460	46 000	14 000	470	47 000	14 350	480	48 000	14 650
490	49 000	14 950	500	50 000	15 250	510	51 000	15 550	520	52 000	15 850
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.



non-RVSM



RVSM

CHAPTER 4. VISUAL FLIGHT RULES

4.6 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 1 000 ft (300 m)*** above the highest obstacle within a ***radius of 600 m*** from the aircraft;

b) elsewhere than as specified in 4.6 a), at a height ***less than 500 ft*** above the ground or water.

4.7 Except where otherwise indicated in air traffic control clearances or specified by the appropriate ATS authority, VFR flights in level cruising flight when operated above 3 000 ft from the ground or water, or a higher datum as specified by the appropriate ATS authority, shall be conducted at a cruising level appropriate to the track as specified in the tables of cruising levels in Appendix 3.

AIP
ISLAMIC REPUBLIC OF IRAN

ENR 1.2-1
WEF 21 APR 22

ENR 1.2 VISUAL FLIGHT RULES

- **Fixed Wings Aircraft:** daylight
  - congested areas: **radius** of 600 m, (1 000 ft)
  - elsewhere: **radius** of 150 m, (500 ft)
- **Fixed Wings Aircraft:** night
  - mountainous areas: 8 km of **estimated position**, (2 000 ft)
  - elsewhere: 8 km of **estimated position**, (1 000 ft)

AIP
ISLAMIC REPUBLIC OF IRAN

ENR 1.2-1
WEF 21 APR 22

ENR 1.2 VISUAL FLIGHT RULES

- **Helicopters:** daylight
  - congested areas: **radius** of 600 m, (1 000 ft) [JUST LIKE FIXED WINGS]
  - Historical buildings and ancient monuments: **radius** of 600 m, (2 000 ft)
  - elsewhere: **radius** of 150 m, (500 ft) [JUST LIKE FIXED WINGS]

- **Helicopters Aircraft:** night
  - mountainous areas: 8 km of **estimated position**, (2 000 ft) [JUST LIKE FIXED WINGS]
  - Historical buildings and ancient monuments: **radius** of 600 m, (2 000 ft)
  - elsewhere: 8 km of **estimated position**, (1 000 ft) [JUST LIKE FIXED WINGS]

CHAPTER 4. VISUAL FLIGHT RULES

4.8 VFR flights shall comply with the provisions of 3.6 (=Air traffic control service):

a) when operated within Classes B, C and D airspace;

b) when forming part of aerodrome traffic at controlled aerodromes; or

c) when operated as special VFR flights.

4.9 A VFR flight operating within or into areas, or along routes, designated by the appropriate ATS authority in accordance with 3.3.1.2 c) or d) *[=FPL sent to avoide interception and to be provided with SAR*] shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and report its position as necessary to, the air traffic services unit providing flight information service.

CHAPTER 4. VISUAL FLIGHT RULES

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

a) if a flight plan was submitted, communicate the necessary changes to be effected to its current flight plan; or

b) when so required by 3.3.1.2, submit a flight plan to the appropriate air traffic services unit and obtain a clearance prior to proceeding IFR when in controlled airspace.

Air Law: 6.63 VFR Flight Plan. A VFR flight plan is to be filed before operating a VFR flight as a controlled flight. To indicate that the flight will be operated under VFR, the letter **"V"** is placed in item 8 of the flight plan form. If a flight is to commence under VFR and at some point en-route change to IFR, the letter **"Z"** is placed in field 8 (**V → I = Z**) [**I → V = Y**] .

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

CHAPTER 5.

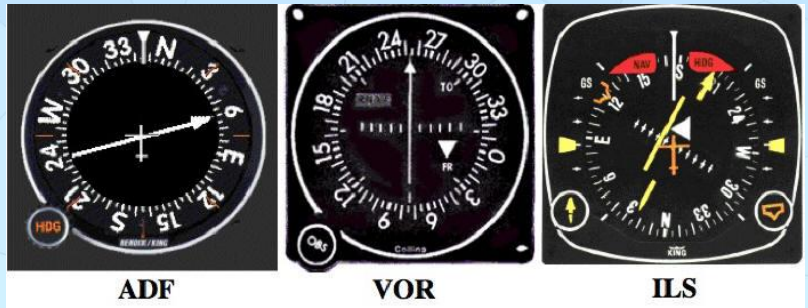
INSTRUMENT FLIGHT RULES

CHAPTER 5. INSTRUMENT FLIGHT RULES

5.1 Rules applicable to all IFR flights

5.1.1 Aircraft equipment

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



ADF VOR ILS

Annex 6

CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

6.9 ALL AEROPLANES OPERATED IN ACCORDANCE WITH IFR [and controlled VFR]

shall be equipped with:

a) a **magnetic compass**;

b) an accurate **timepiece** indicating the time in **hours**, **minutes** and **seconds**;

c) **two** sensitive pressure altimeters with **counter drum-pointer** or equivalent presentation;

d) an **airspeed** indicating system with means of preventing malfunctioning due to either condensation or icing;

e) a **turn and slip indicator**;

f) an **attitude indicator** (artificial horizon);

g) a **heading indicator** (directional gyroscope);

h) a means of indicating whether the **power** supply to the **gyroscopic** instrument is adequate (**Suction Gauge**);

i) a means of indicating in the flight crew compartment the **outside air temperature**;

j) a **rate-of-climb and descent** indicator; and

k) such **additional** instruments or equipment as may be prescribed by the appropriate authority.

CHAPTER 5. INSTRUMENT FLIGHT RULES

5.1 Rules applicable to all IFR flights

5.1.2 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:

a) over high terrain or in mountainous areas, at a level which is at least ***2000ft above*** the highest obstacle located within ***8 km*** of the estimated position of the aircraft;

b) elsewhere than as specified in a), at a level which is at least ***1000ft above*** the highest obstacle located within ***8 km*** of the estimated position of the aircraft.

AIP: 2500 FT above the highest obstacle located within 8 km of the estimated position of the aircraft

CHAPTER 5. INSTRUMENT FLIGHT RULES

5.1 Rules applicable to all IFR flights

5.1.3 Change from IFR flight to VFR flight

5.1.3.1 An aircraft electing to change the conduct of its flight from compliance with the instrument flight rules to compliance with the visual flight rules shall, if a flight plan was submitted, ***notify the appropriate air traffic services unit*** specifically that the IFR flight is cancelled and communicate thereto the changes to be made to its current flight plan.

5.1.3.2 When an aircraft operating under the instrument flight rules is flown in or encounters visual meteorological conditions it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a ***reasonable period of time*** in uninterrupted visual meteorological conditions.

CHAPTER 5. INSTRUMENT FLIGHT RULES

5.2 Rules applicable to IFR flights within controlled airspace

5.2.1 IFR flights shall comply with the provisions of 3.6 (***Air traffic control service***) when operated in controlled airspace.

5.2.2 An IFR flight operating in cruising flight in controlled airspace shall be flown at a cruising level, or, if authorized to employ cruise climb techniques, between two levels or above a level, selected from:

a) the tables of cruising levels in Appendix 3; or

b) a modified table of cruising levels, when so prescribed in accordance with Appendix 3 for flight above FL 410; except that the correlation of levels to track prescribed therein shall not apply whenever otherwise indicated in ***air traffic control clearances*** or specified by the appropriate ATS authority in ***Aeronautical Information Publications***.

Cruising level. A level maintained during a significant portion of a flight.

Cruise climb. An aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.

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

CHAPTER 5. INSTRUMENT FLIGHT RULES

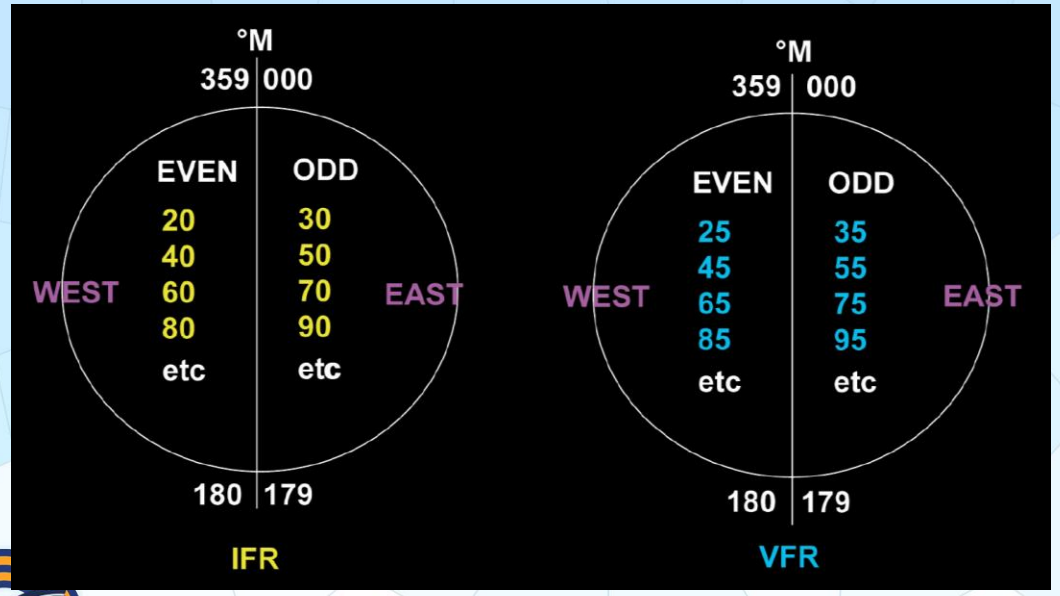
5.3 Rules applicable to IFR flights outside controlled airspace

5.3.1 Cruising levels

An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level ***appropriate to its track*** as specified in:

a) the tables of cruising levels in Appendix 3, except when otherwise specified by the appropriate ATS authority for flight at or below 3000ft above mean sea level; or

b) a modified table of cruising levels, when so prescribed in accordance with Appendix 3 for flight above FL 410.



CHAPTER 5. INSTRUMENT FLIGHT RULES

5.3 Rules applicable to IFR flights outside controlled airspace

5.3.2 Communications

An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the appropriate ATS authority in accordance with 3.3.1.2 c) or d) *[=FPL sent to avoid interception and to be provided with SAR*] shall maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service.

CHAPTER 5. INSTRUMENT FLIGHT RULES

5.3 Rules applicable to IFR flights outside controlled airspace

5.3.3 Position reports

An IFR flight operating outside controlled airspace and required by the appropriate ATS authority to:

— submit a flight plan,

— maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service,

shall report position as specified in 3.6.3 (Position reports) ***for controlled flights***.

AIP ENR 1.3

2.2 Visual approach within controlled airspaces

Visual approach is an approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

2.2.1 A Controlled IFR flight may be cleared to execute a visual approach **after commencing** the instrument approach procedure (from the initial approach fix or where applicable, from the beginning of a defined arrival route (STAR)), provided that:

AIP ENR 1.3

2.2 Visual approach within controlled airspaces

a) The reported weather at aerodrome has a ceiling above the level of the beginning of the initial approach segment for the aircraft so cleared;

b) The reported ground visibility is 3000 meters or more and;

c) The pilot can maintain visual reference to the terrain and ensures that the meteorological conditions are such that with reasonable assurance a visual approach and landing can be completed.

Note1- A request for Visual Approach implies that the pilot can maintain visual reference to the terrain and landing can be completed so ***it is not necessary for the controller to verify it****.*

AIP ENR 1.3

2.2 Visual approach within controlled airspaces

2.2.2 Clearance for an IFR flight to execute a visual approach may be requested by a flight crew or initiated by the controller. In the latter case, the **concurrence** of the flight crew shall be required.

2.2.5 Separation shall be provided between an aircraft cleared to execute a visual approach and other IFR and /or Special VFR aircraft.

- **CLEARED VISUAL APPROACH RUNWAY (number);**
- **ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY (number);**
- **CLEARED VISUAL APPROACH RUNWAY (number), MAINTAIN OWN SEPARATION FROM PRECEDING (aircraft type and wake turbulence category as appropriate) [CAUTION WAKE TURBULENCE];**

AIP ENR 1.3

MISSED APPROACH IN VISUAL APPROACH

- 2.2.7 A visual approach is not an IAP and therefore has no missed approach segment, If a go around is necessary for any reason under the reported **ground visibility** condition of **less than 5 KM**, aircraft operating at controlled airports will be issued an appropriate clearance/instruction by the air traffic controller to join the initial approach fix of the approach procedure which **had already been cleared** or any other fixes as appropriate.
- 2.2.8 In case of a go-around of a flight executing a visual approach under the reported **ground visibility** condition of **5 KM or more**, it may be cleared by air traffic controller to **join the aerodrome traffic circuit** or may receive the ATC clearance/ instructions to join the initial approach fix of the approach procedure which had already been cleared or any other fixes as appropriate.

APPENDIX 1.

SIGNALS

APPENDIX 1. SIGNALS

1. DISTRESS AND URGENCY SIGNALS

1.1 Distress signals

The following signals, used either together or separately, mean that grave [=great & bad] and imminent [=happening very soon] danger threatens, and immediate assistance is requested:

a) a signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (. . .———. . . in the Morse Code);

b) a radiotelephony distress signal consisting of the spoken word MAYDAY;

c) a distress message sent via data link [e.g. CPDLC] which transmits the intent of the word MAYDAY;

d) rockets or shells throwing red lights, fired one at a time at short intervals;

e) a parachute flare showing a red light.

APPENDIX 1. SIGNALS

1. DISTRESS AND URGENCY SIGNALS

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.

APPENDIX 1. SIGNALS

1. DISTRESS AND URGENCY SIGNALS

1.2 Urgency signals

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 or within sight:

- a) a signal made by radiotelegraphy or by any other signalling method consisting of the group XXX;
- b) a radiotelephony urgency signal consisting of the spoken words PAN, PAN;
- c) an urgency message sent via data link which transmits the intent of the words PAN, PAN.

APPENDIX 1. SIGNALS

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

By day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an unauthorized aircraft that it is flying in or about to enter a restricted, prohibited or danger area, and that the aircraft is to take such remedial action as may be necessary.

APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.1 Instructions

Light	From Aerodrome Control to:	
	Aircraft in Flight	Aircraft on the Ground
Steady Green	Cleared to land	Cleared for take-off
Steady Red	Give way to other aircraft and continue circling	Stop
Green flashes	Return for landing and await landing clearance	Cleared to taxi
Red flashes	Aerodrome unsafe, do not land	Taxi clear of the landing area
White flashes	Land at this aerodrome after receiving clearance to land and then proceed to the apron	Return to the starting point on the aerodrome
Red pyrotechnic (flare)	Notwithstanding any previous instructions, do not land for the time being	

APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.1 Instructions

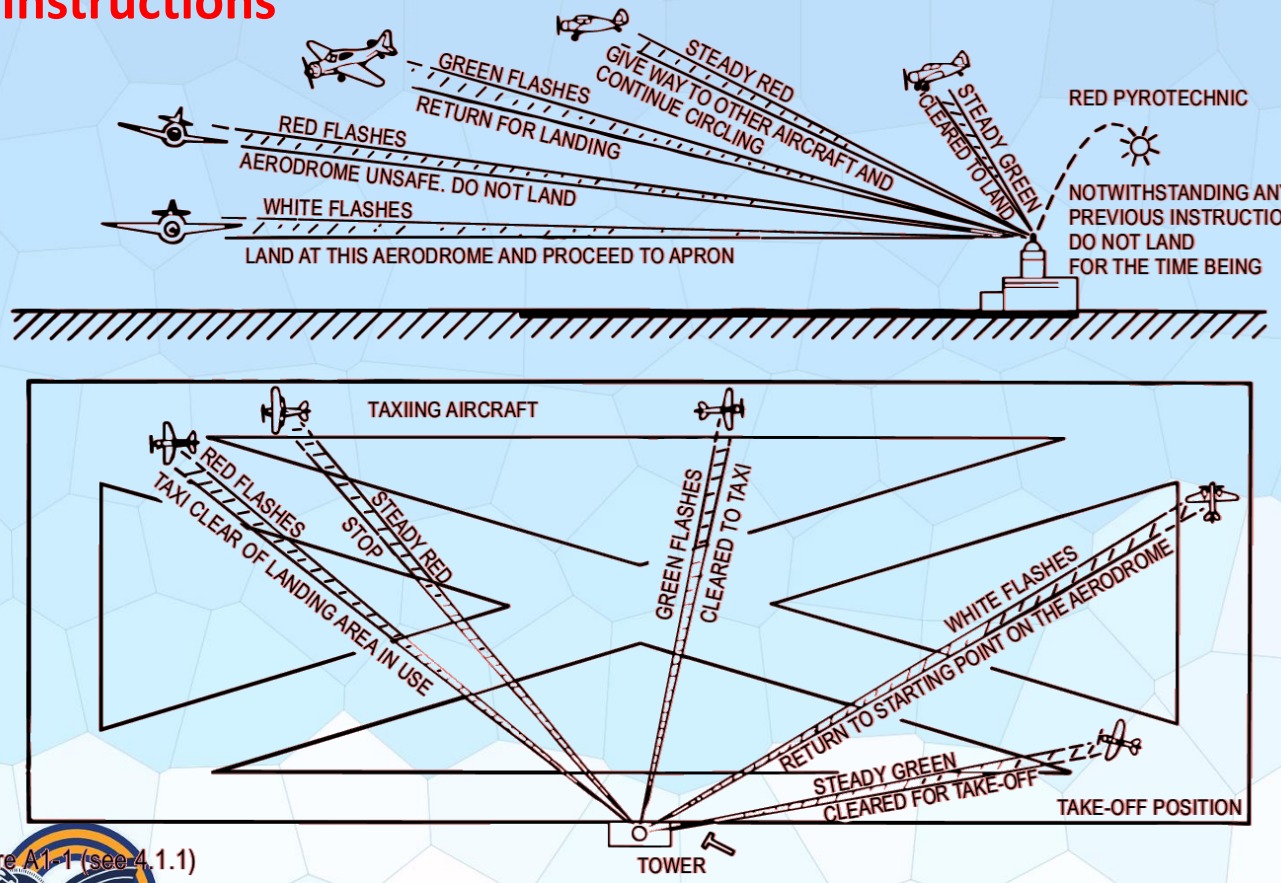


Figure A1-1 (see 4.1.1)

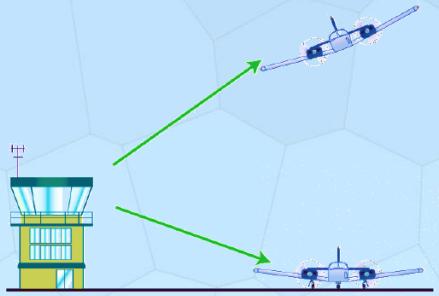
APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

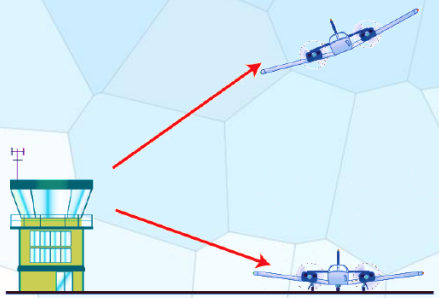
4.1 Light and pyrotechnic signals

4.1.1 Instructions

Signal	Meaning
Steady green.	Cleared to land.
	Cleared to take off.



Signal	Meaning
Steady red.	Give way to other aircraft and continue circling.
	Stop.



APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.1 Instructions

Signal	Meaning
Green flashes.	Return for landing and await landing clearance.
	Cleared to taxi.

Signal	Meaning
Red flashes.	Aerodrome unsafe, do not land.
	Taxi clear of the landing area.

APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.1 Instructions

Signal		Meaning
White flashes.		Land at this aerodrome after receiving clearance to land and then proceed to the apron. Return to the starting point on the aerodrome.
Red pyrotechnic (flare).		Notwithstanding any previous instructions, do not land for the time being.

APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.2 Acknowledgement by an aircraft

a) When in flight:

1) during the hours of daylight:

— by rocking the aircraft's wings;

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

2) during the hours of darkness:

— by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.2 Acknowledgement by an aircraft

b) When on the ground:

1) during the hours of daylight:

— by moving the aircraft's ailerons or rudder;

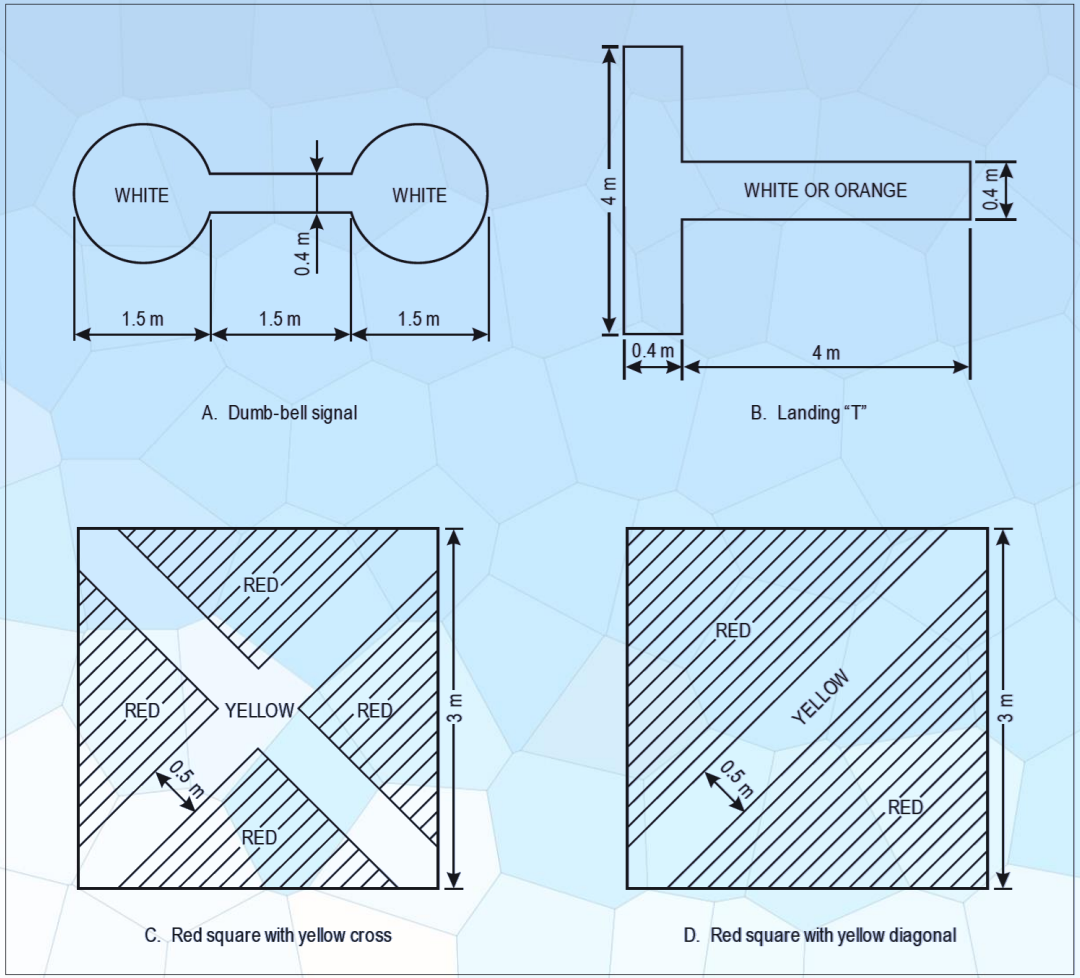
2) during the hours of darkness:

— by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

4.2 Visual ground signals

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

APPENDIX 1. SIGNALS



4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.1 Prohibition of landing

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

APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.2 Need for special precautions while approaching or landing

A horizontal red square panel with one yellow diagonal 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.

APPENDIX 1. SIGNALS

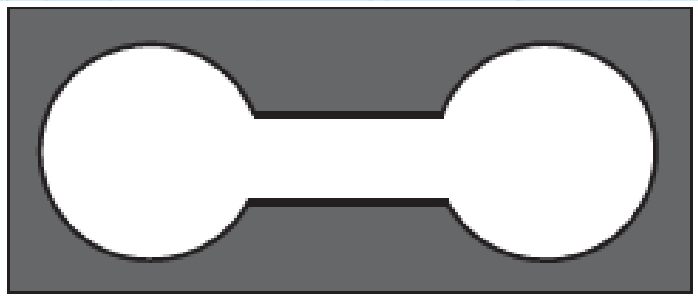
4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.3 Use of runways and taxiways

4.2.3.1 A horizontal white dumb-bell when displayed in a signal area indicates that ***aircraft are required to land, take off and taxi on runways and taxiways only***.

(Air law: Aircraft movement on the ground is confined to paved, metalled or similar hardened surfaces.)

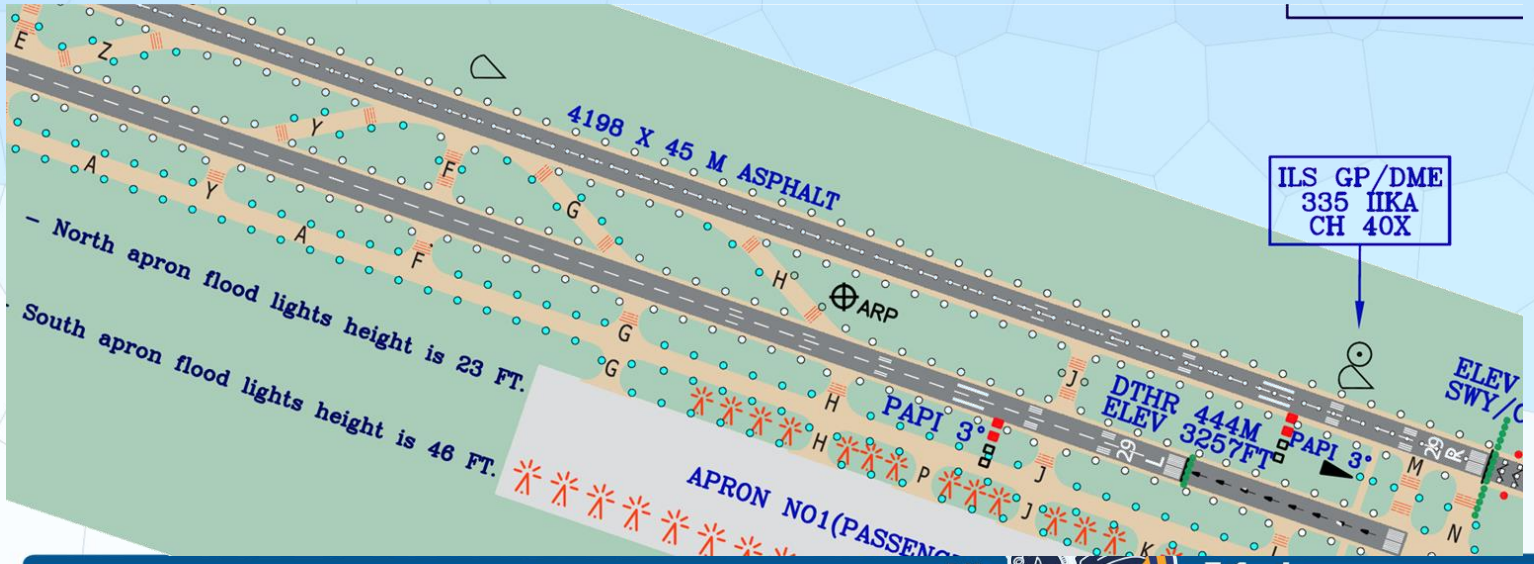


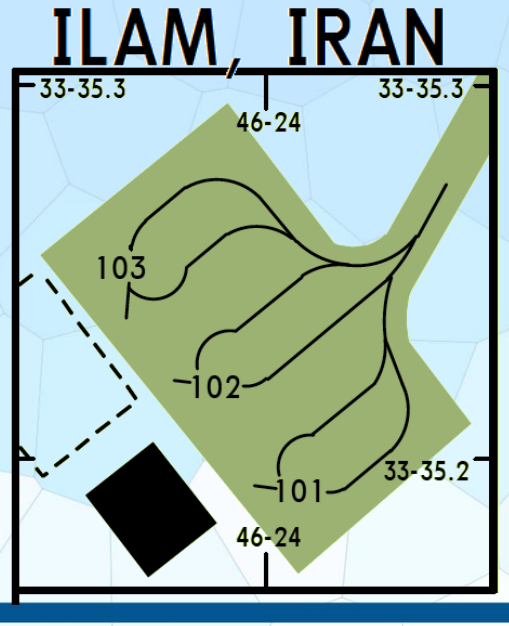
Taxiway. A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

a) Aircraft stand taxilane. 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.

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.





APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

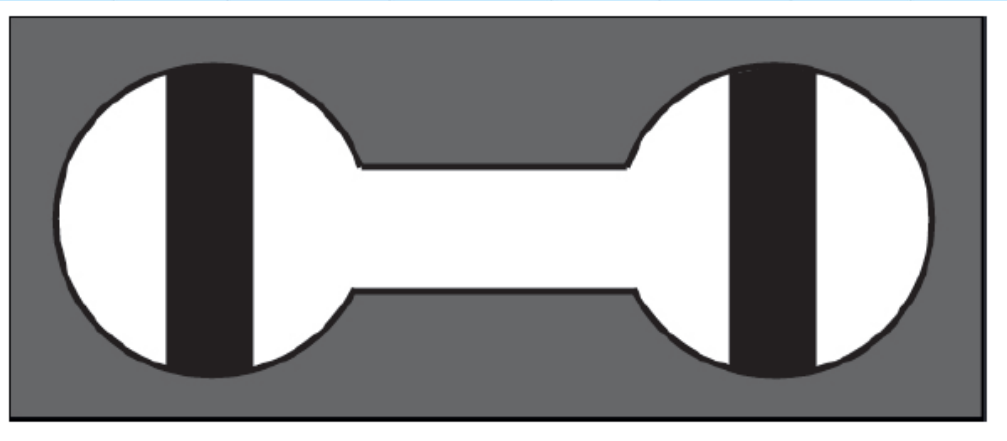
4.2 Visual ground signals

4.2.3 Use of runways and taxiways

4.2.3.2 The same horizontal white dumb-bell as in 4.2.3.1 but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure A1-5) when displayed in a signal area indicates that ***aircraft are required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways***.

Air law:

(take-offs and landings are to be on a runway, but movement on the ground is not confined to pavements.)



APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.4 Closed runways or taxiways

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

APPENDIX 1. SIGNALS

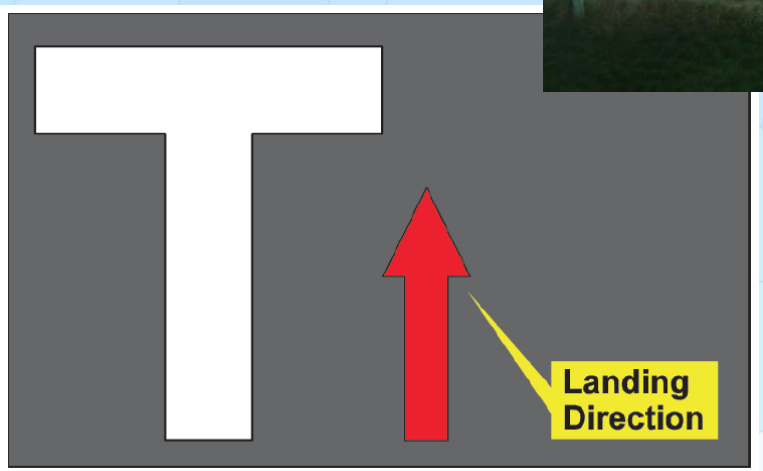
4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.5 Directions for landing or take-off

4.2.5.1 A horizontal white or orange landing T (Figure A1-7) indicates the ***direction to be used by aircraft for landing and take-off***, which shall be in a direction parallel to the shaft of the T towards the cross arm.

Note.— When used at night, the landing T is either illuminated or outlined in white lights.



APPENDIX 1. SIGNALS

4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.5 Directions for landing or take-off

4.2.5.2 A set of two digits (Figure A1-8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.

APPENDIX 1. SIGNALS

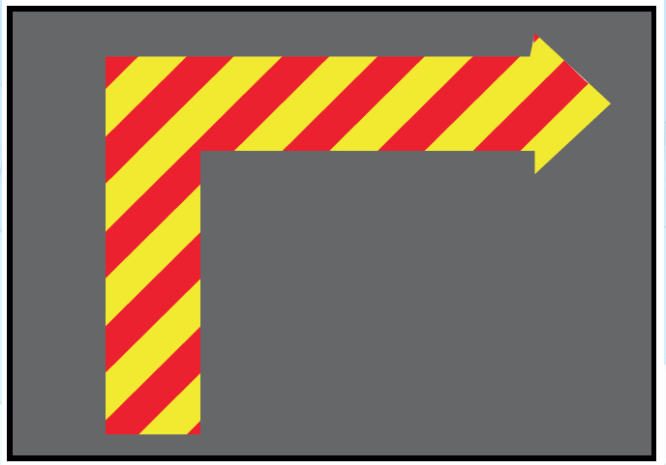
4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.6 Right-hand traffic

When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure A1-9) indicates that turns are to be made to the right before landing and after take-off.

(Air law: A red and yellow striped arrow signifies that a right hand circuit is in force.)



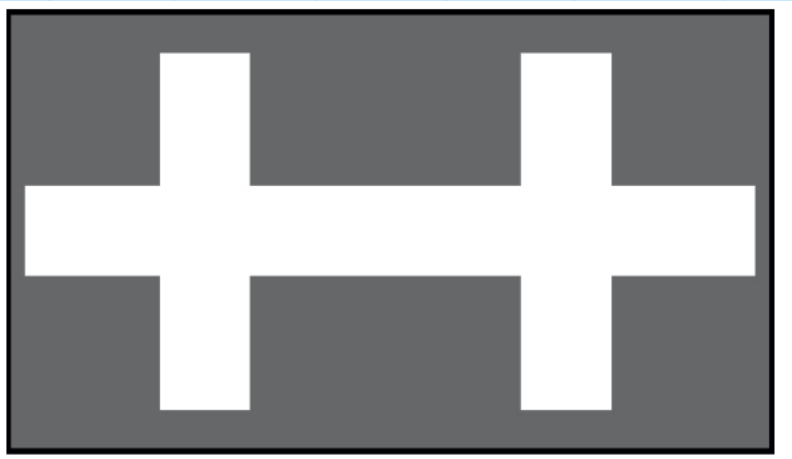
APPENDIX 1. SIGNALS

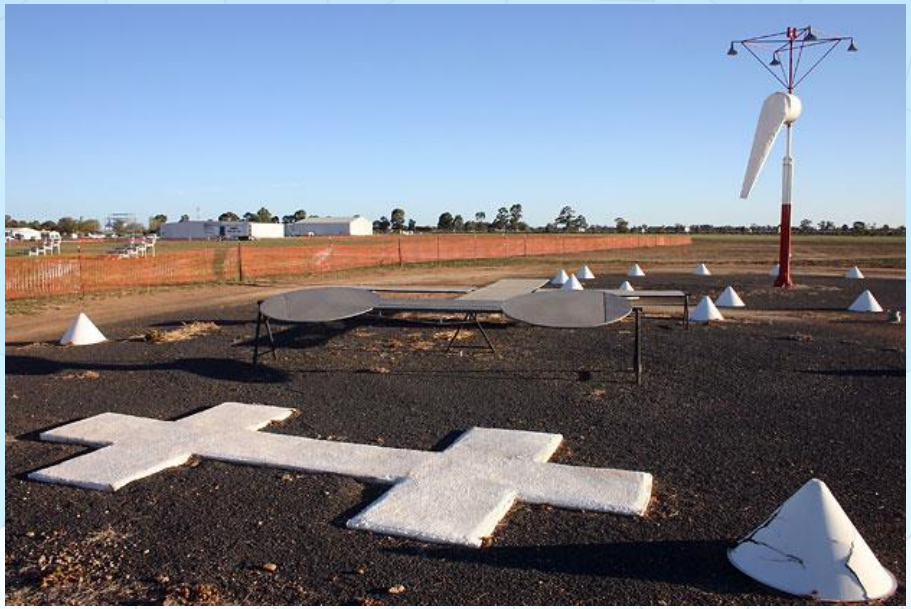
4. SIGNALS FOR AERODROME TRAFFIC

4.2 Visual ground signals

4.2.8 Glider flights in operation

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





APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

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

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

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

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

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

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

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

5.1.1 Prior to using the following signals, the signalman shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with 3.4.1, might otherwise strike.

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

APPENDIX 1. SIGNALS

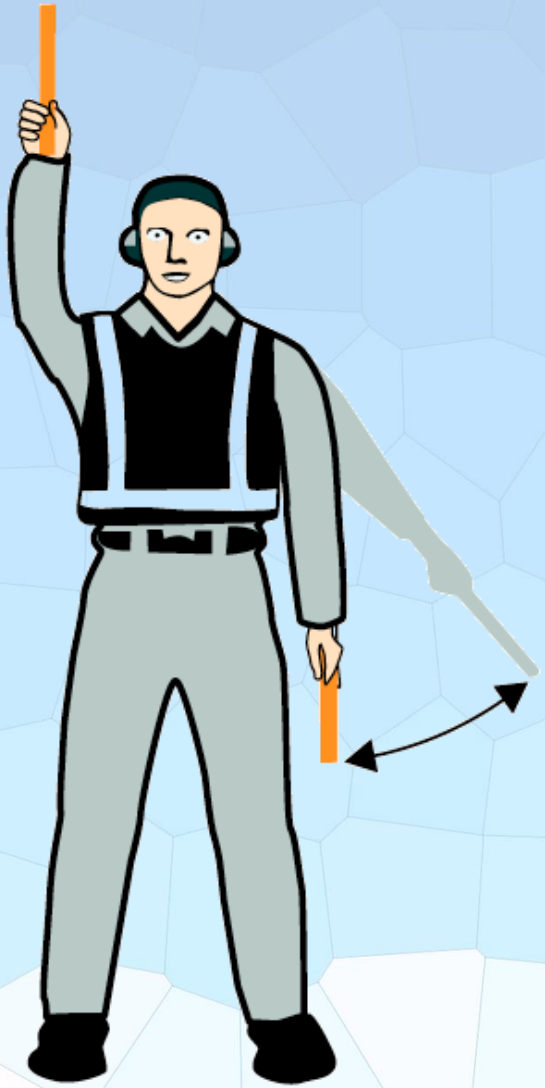
5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

1. Wingwalker/guide

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

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



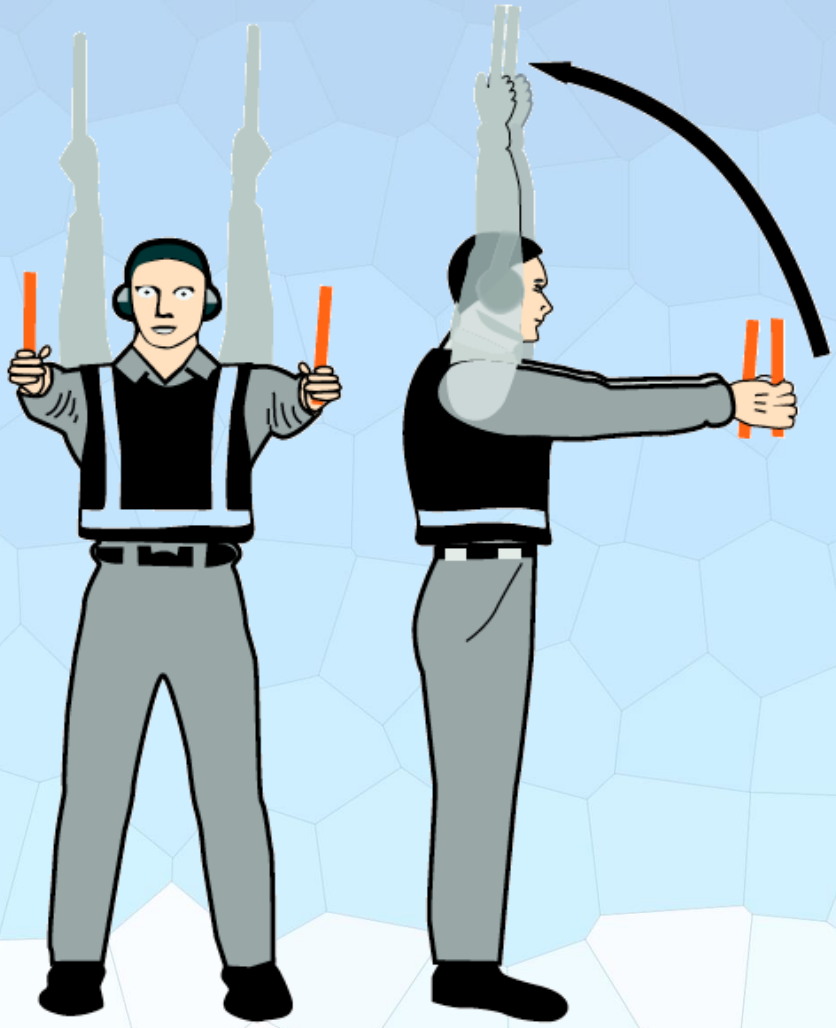
APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

2. Identify gate

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



APPENDIX 1. SIGNALS

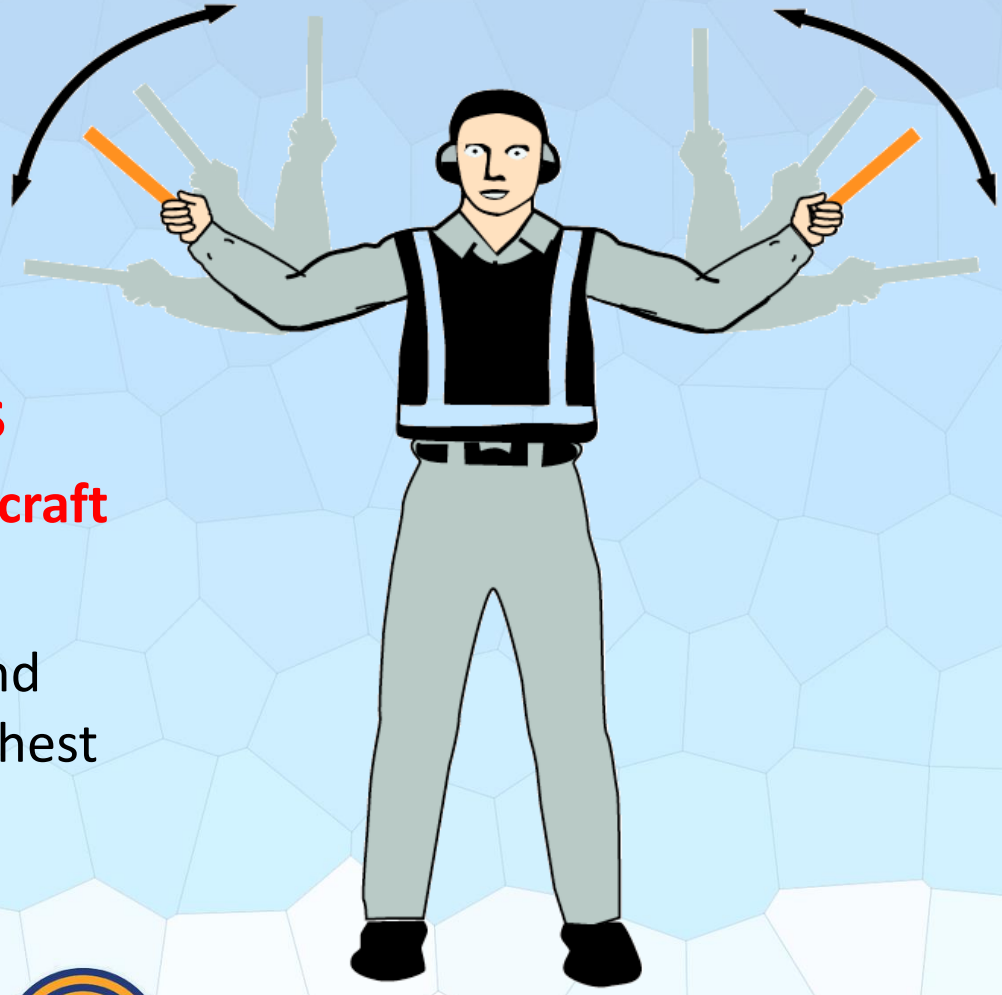
5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

3. Proceed to next signalman or as directed by tower/ground control

Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman or taxi area.

APPENDIX 1. SIGNALS



5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

4. Straight ahead

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

5 a). Turn left

(from pilot's point of view)

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

5 b). Turn right

(from pilot's point of view)

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

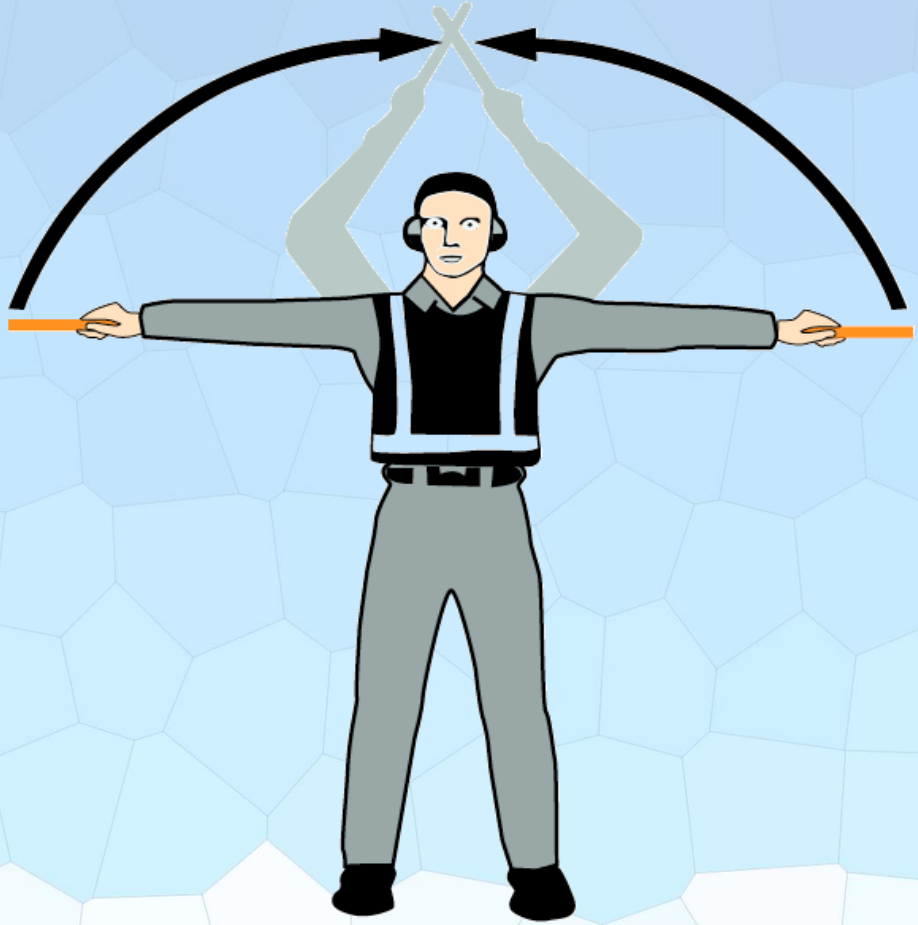
APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

6 a). Normal stop

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



APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

6 b). Emergency stop

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

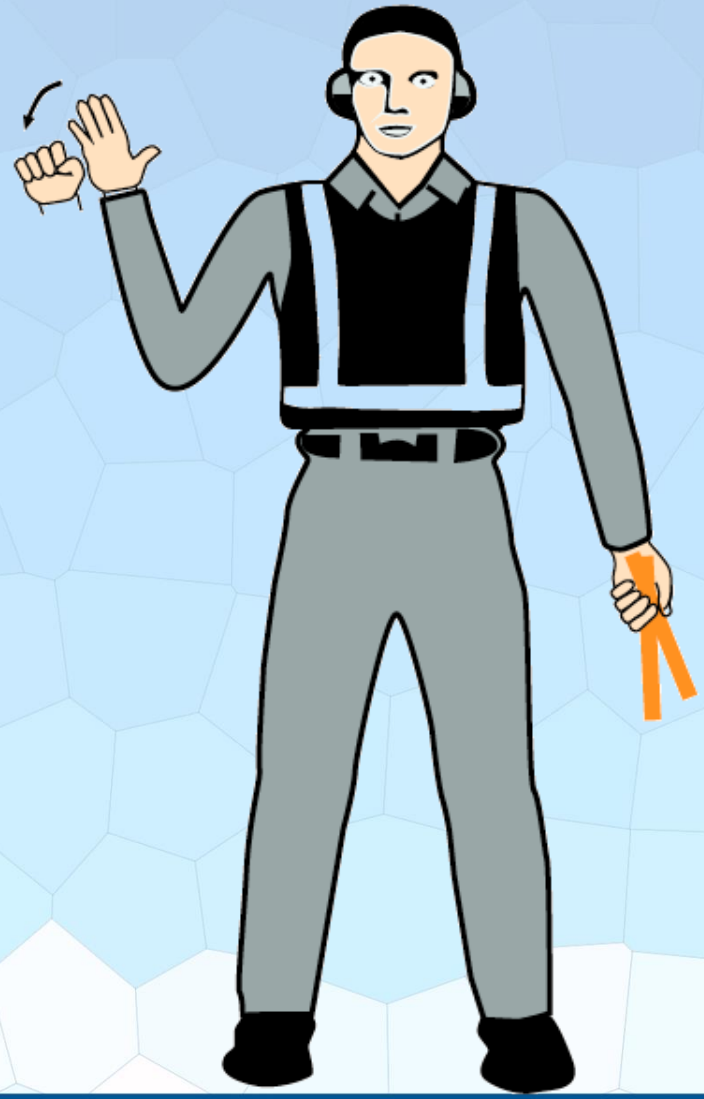
APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

7 a). Set brakes

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



APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

7 b). Release brakes

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

8 a). Chocks inserted

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

8 b). Chocks removed

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

9. Start engine(s)

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

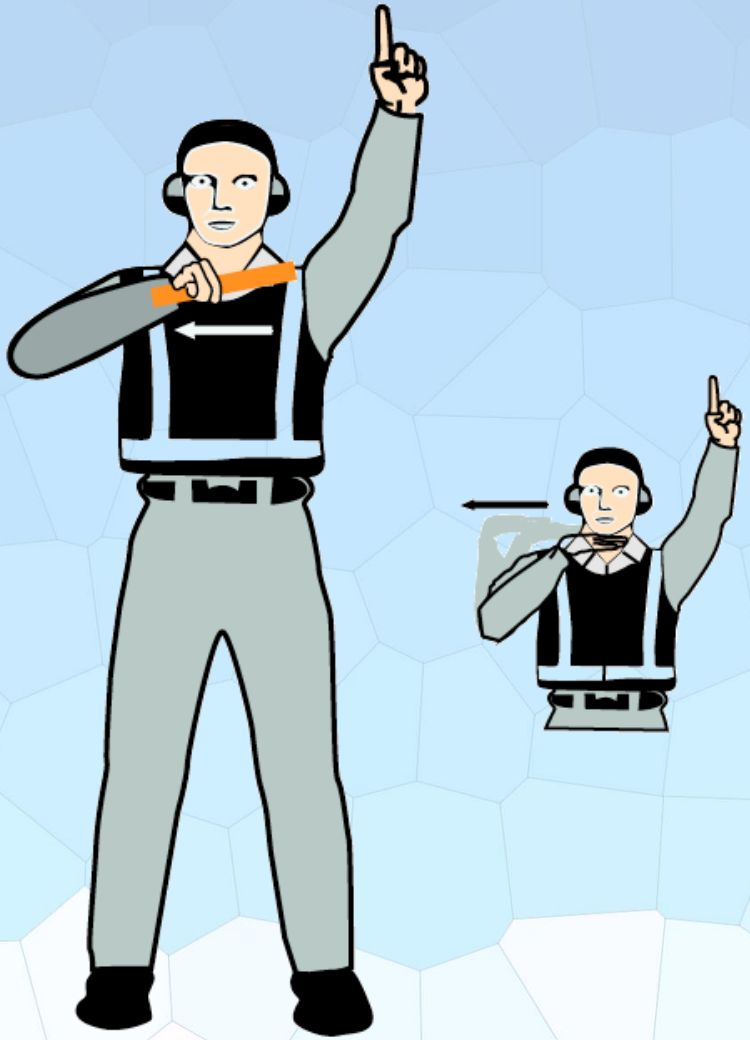
APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

10. Cut engines

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



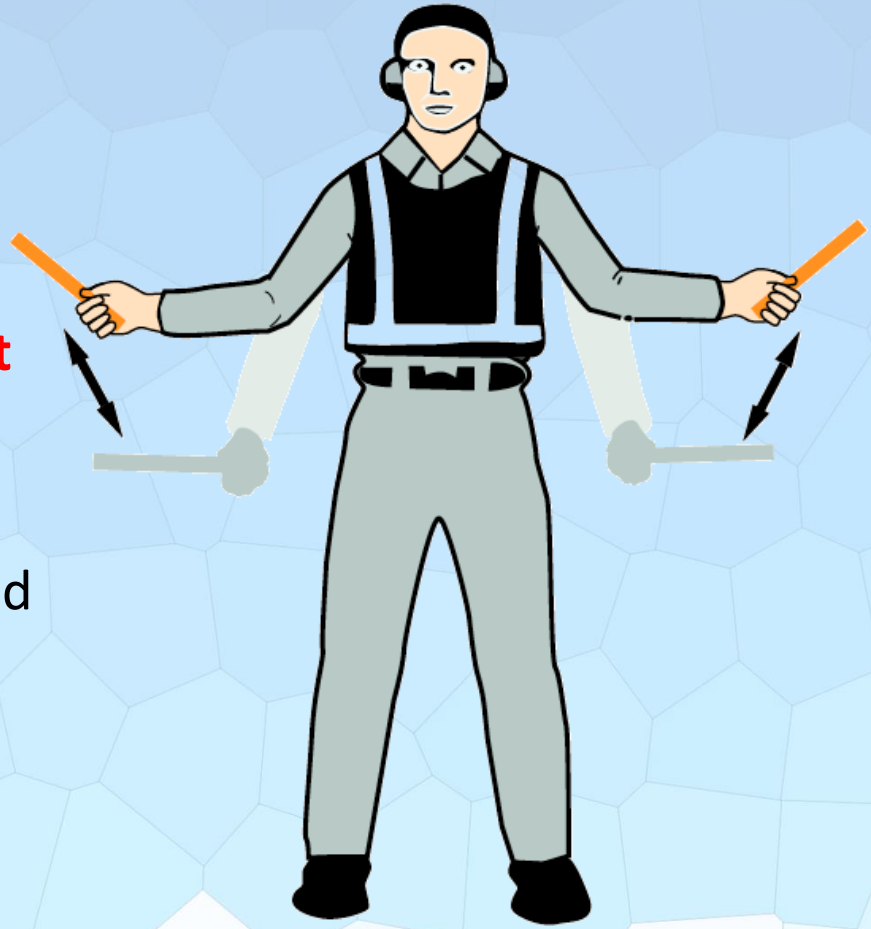
APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

11. Slow down

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



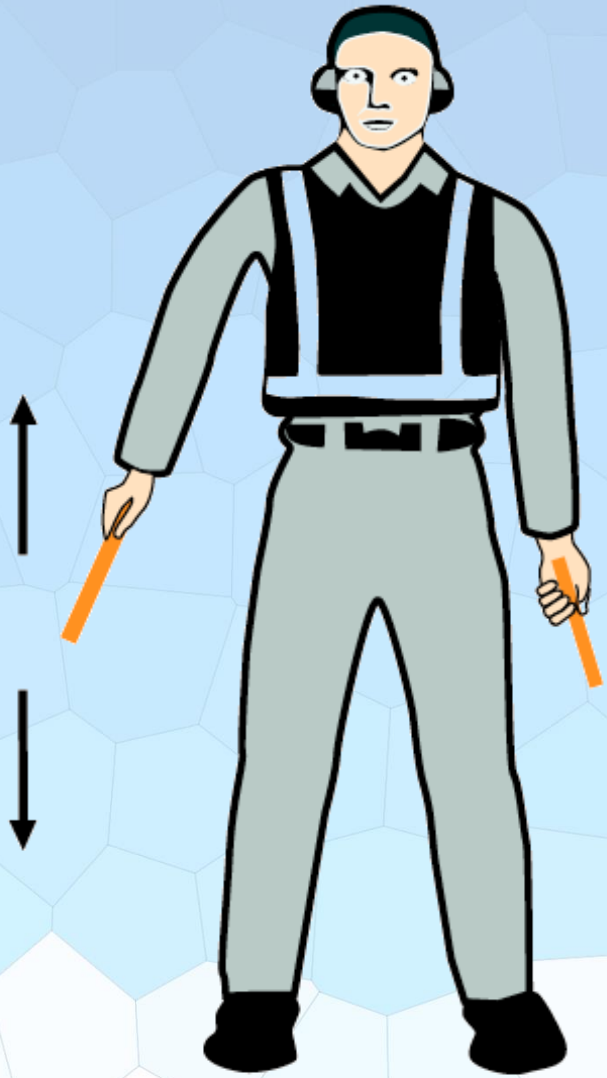
APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

12. Slow down engine(s) on indicated side

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



APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

13. Move back

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

14 a). Turns while backing

(for tail to starboard)

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

14 b). Turns while backing

(for tail to port)

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

APPENDIX 1. SIGNALS

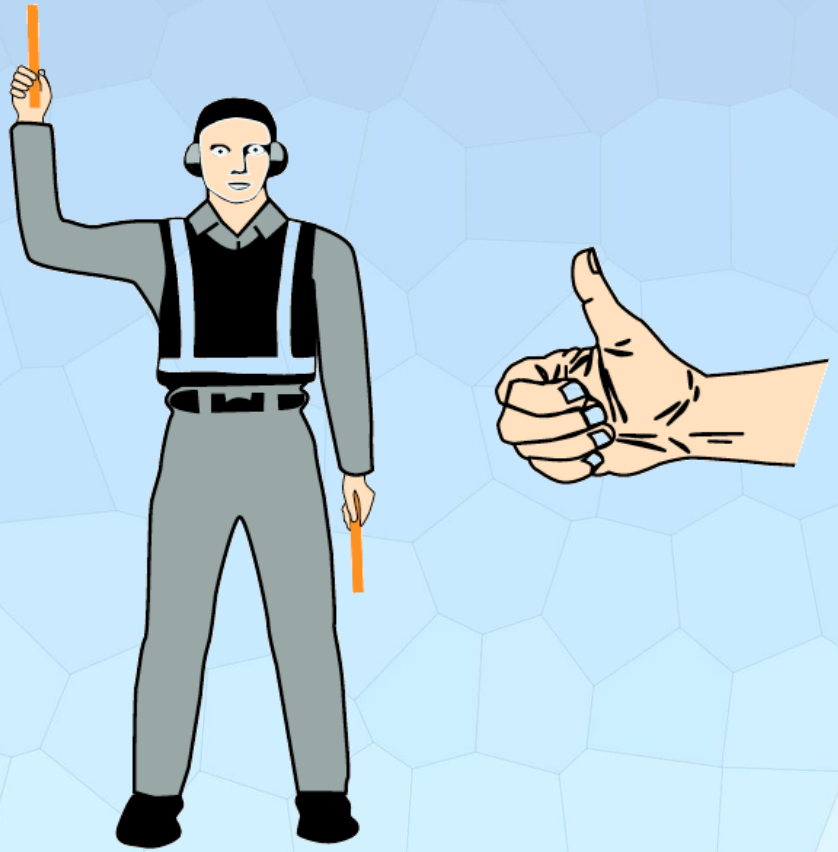
5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

15. Affirmative/all clear

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

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



APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

21. Hold position/stand by

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

22. Dispatch aircraft

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

23. Do not touch controls

(technical/servicing communication signal)

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

APPENDIX 1. SIGNALS

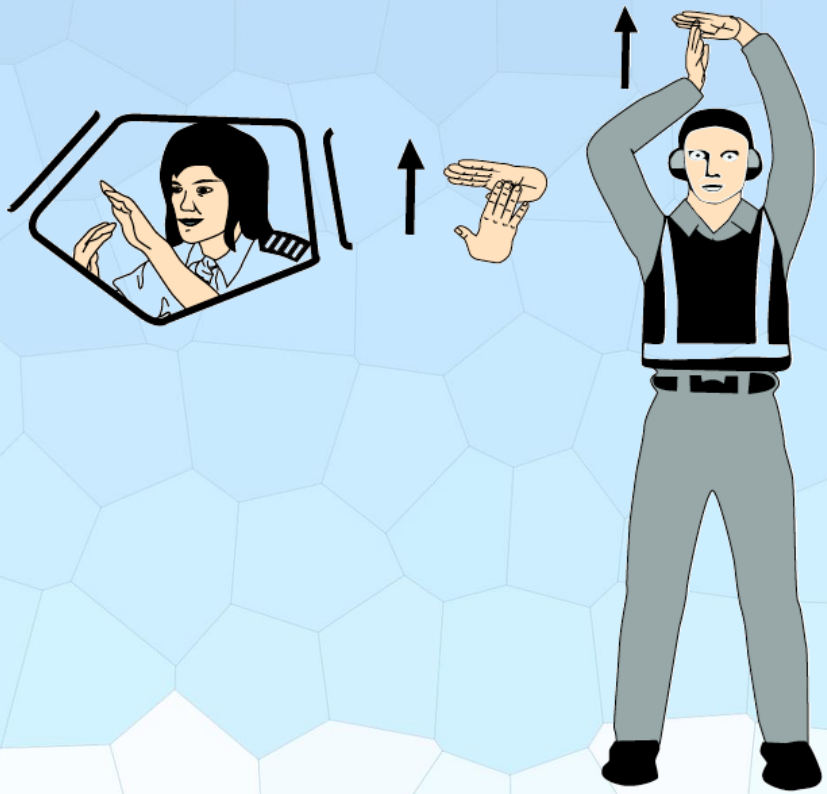
5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

24. Connect ground power

(technical/servicing communication signal)

Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a “T”). At night, illuminated wands can also be used to form the “T” above head.



APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

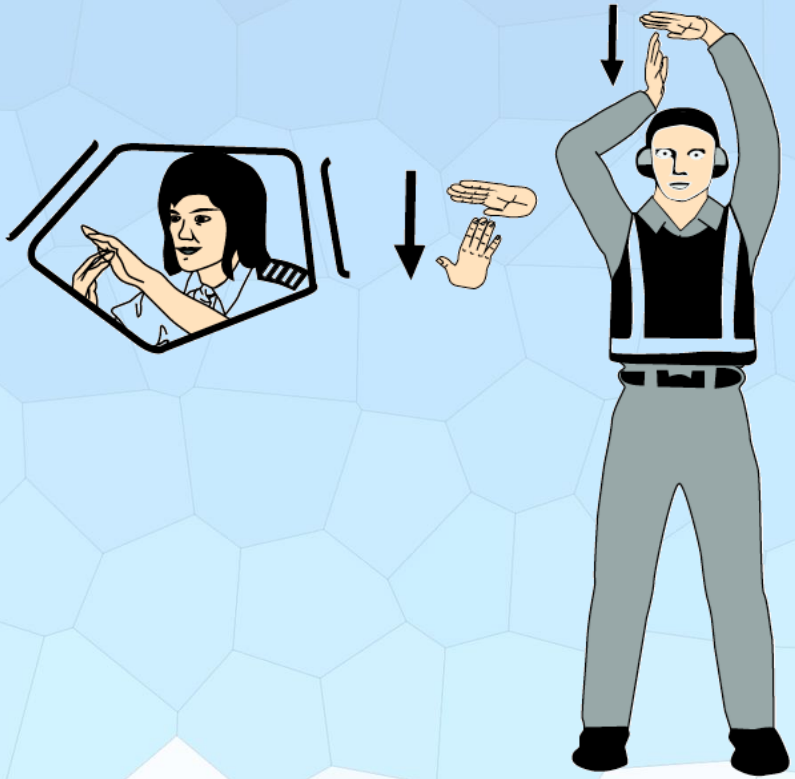
5.1 From a signalman to an aircraft

25. Disconnect power

(technical/servicing communication signal)

Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a “T”); then move right hand away from the left.

Do not disconnect power until authorized by flight crew. At night, illuminated wands can also be used to form the “T” above head.



APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

27. Establish communication via interphone (technical/servicing communication signal)

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.1 From a signalman to an aircraft

28. Open/close stairs

(technical/servicing communication signal)

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

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.2 From the pilot of an aircraft to a signalman

5.2.1 Brakes

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

a) Brakes engaged: raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.

b) Brakes released: raise arm, with fist clenched, horizontally in front of face, then extend fingers.

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.2 From the pilot of an aircraft to a signalman

5.2.2 Chocks

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

b) Remove chocks: hands crossed in front of face, palms outwards, move arms outwards.

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.2 From the pilot of an aircraft to a signalman

5.2.3 Ready to start engine(s)

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

APPENDIX 1. SIGNALS

5. MARSHALLING SIGNALS

5.3 Technical/servicing communication signals

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

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

APPENDIX 1. SIGNALS

6. 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.

APPENDIX 1. SIGNALS

6. STANDARD EMERGENCY HAND SIGNALS

1. Recommend evacuation

Evacuation recommended based on ARFF and incident commander's assessment of external situation.

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

- Night — same with wands.

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APPENDIX 1. SIGNALS

6. STANDARD EMERGENCY HAND SIGNALS

2. Recommended stop

Recommend evacuation in progress be halted.

Stop aircraft movement or other activity in progress.

Arms in front of head, crossed at wrists.

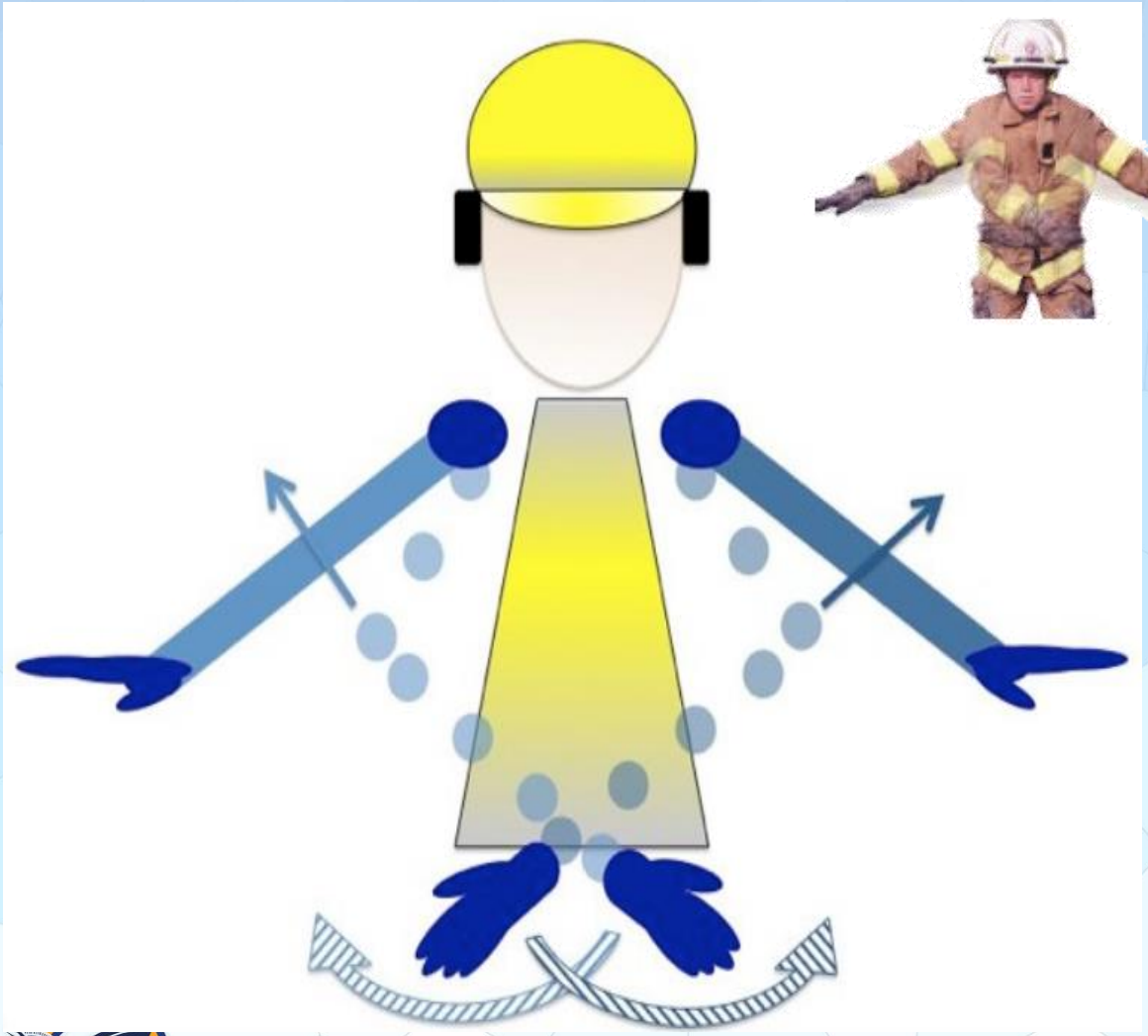
Night — same with wands.

APPENDIX 1. SIGNALS

6. STANDARD EMERGENCY HAND SIGNALS

3. Emergency contained

- No outside evidence of dangerous conditions or “allclear.”
- 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.



APPENDIX 1. SIGNALS

6. STANDARD EMERGENCY HAND SIGNALS

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.

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