

# DOC.4444 (PANS\_ATM)



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# IRANBOOKLET

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# ( Introduction )

## PANS – ATM :

- PROCEDURES FOR AIR NAVIGATION SERVICES – AIR TRAFFIC MANAGEMENT

## AIR TRAFFIC MANAGEMENT (ATM) :

- The dynamic, integrated management of air traffic and airspace- **safely, economically and efficiently** .
- Document 4444 is published by international civil aviation organization ( **I.C.A.O** ) prepared by the air traffic control committee in march **1946** .
- This document consists of sixteen chapters plus six appendices with **totally 440 pages** .

**NOTE 1: ALTHOUGH THESE PROCEDURES ARE MAINLY DIRECTED TO AIR TRAFFIC SERVICES PERSONNEL, FLIGHT CREWS SHOULD BE FAMILIAR WITH THE CERTAIN PROCEDURES CONTAINED .**

**NOTE 2: THE OBJECTIVES OF THE AIR TRAFFIC CONTROL SERVICE AS PRESCRIBED IN ANNEX 11, DO NOT INCLUDE PREVENTION OF COLLISION WITH TERRAIN, THEREFORE;**

- THE PROCEDURES PRESCRIBED IN THIS DOCUMENT **DO NOT RELIEVE PILOTS OF THEIR RESPONSIBILITY** TO ENSURE THAT ANY CLEARANCES ISSUED BY AIR TRAFFIC CONTROL UNITS ARE SAFE IN THIS RESPECT,SUCH AS, WHEN **AN IFR FLIGHT IS VECTORED** OR IS GIVEN A **DIRECT ROUTING** WHICH TAKES THE AIRCRAFT **OFF AN ATS ROUTE** .

# ( Chapter one-definitions )

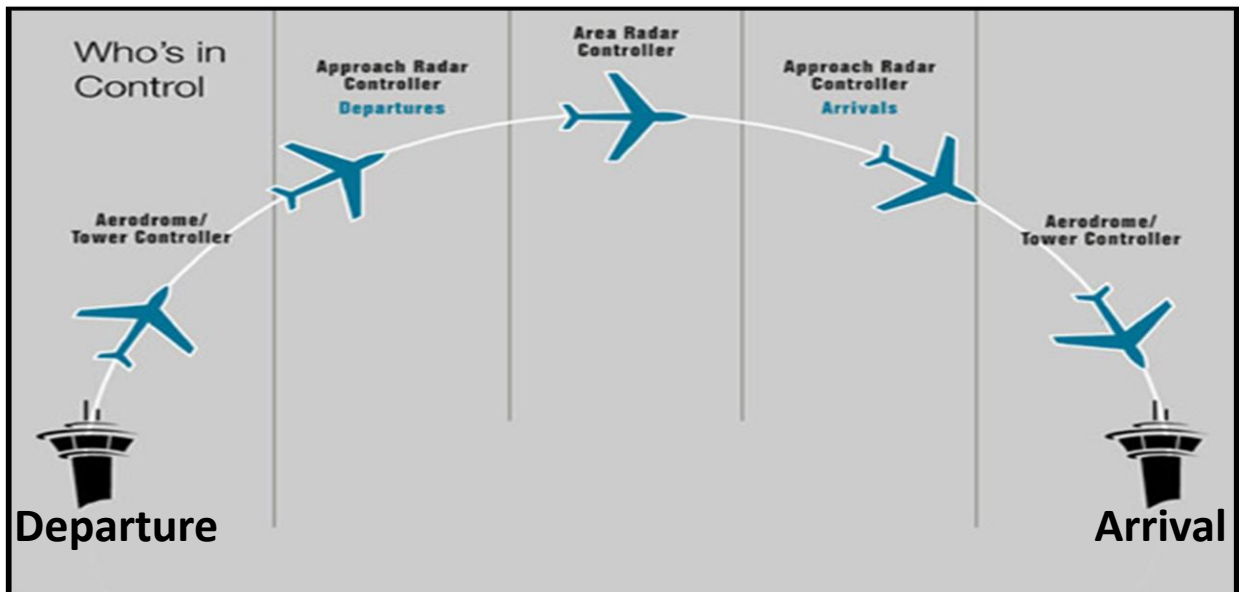
**NOTE** : The term “ **service** ” is used as an abstract noun to designate functions, or service rendered; the term “ **unit** ” is used to designate a collective body performing a service .

## TRANSFERRING UNIT/CONTROLLER :

- Air traffic control unit/air traffic controller in the process of **transferring the responsibility** for providing air traffic control service to an aircraft to **the next** air traffic control unit/ air traffic controller along the route of flight .

## ACCEPTING UNIT/CONTROLLER :

- Air traffic control unit/air traffic controller **next to take control of an aircraft** .



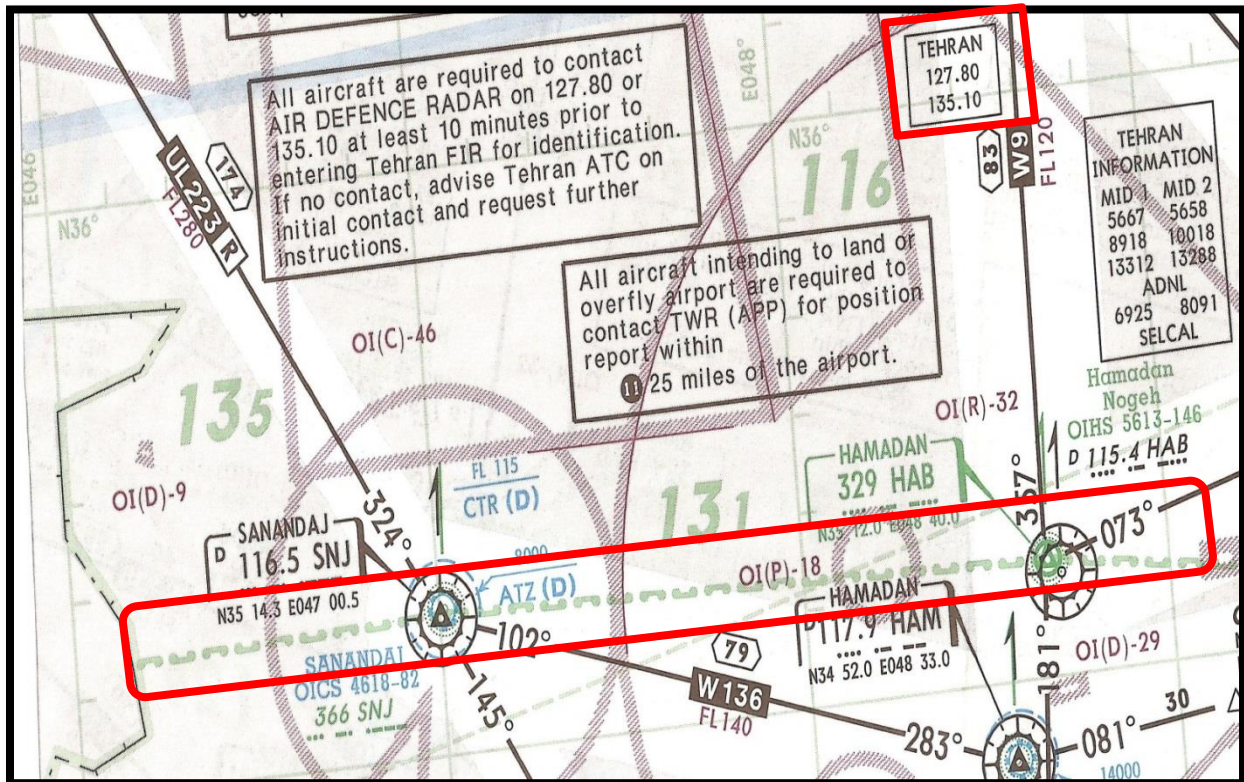
( Transferring control of an aircraft from a unit to another)

## DOWN-STREAM CLEARANCE :

- A **clearance** issued to an aircraft **by** an **ATC unit** that is **not** the current **controlling authority** of that aircraft .

### TRANSFER OF CONTROL POINT :

- A **defined point** located along the flight of an aircraft, at which the **responsibility** for providing air traffic control service to the aircraft is transferred **from one control unit or control position to the next** .



( Transfer of control point on en-route IFR chart with frequency )

### ADVISORY AIRSPACE ( ADA ) :

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

### ADVISORY ROUTE ( ADR ) :

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

### AIR TRAFFIC ADVISORY SERVICE :

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

**NOTE** : advisory service shall not be **provided** based on the **term ``clearance``** .

**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** .

**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** .

**MANOEUVRING AREA :**

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

**MOVEMENT AREA :**

- That part of an aerodrome to be used for take-off, landing and taxiing of aircraft, **consisting of the movement area and the apron** .

**AERODROME CONTROL SERVICE :**

- Air traffic control service **for aerodrome traffic** .

**AERODROME CONTROL TOWER :**

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

**AERODROME ELEVATION :**

- The elevation of the highest point **of the landing area** .

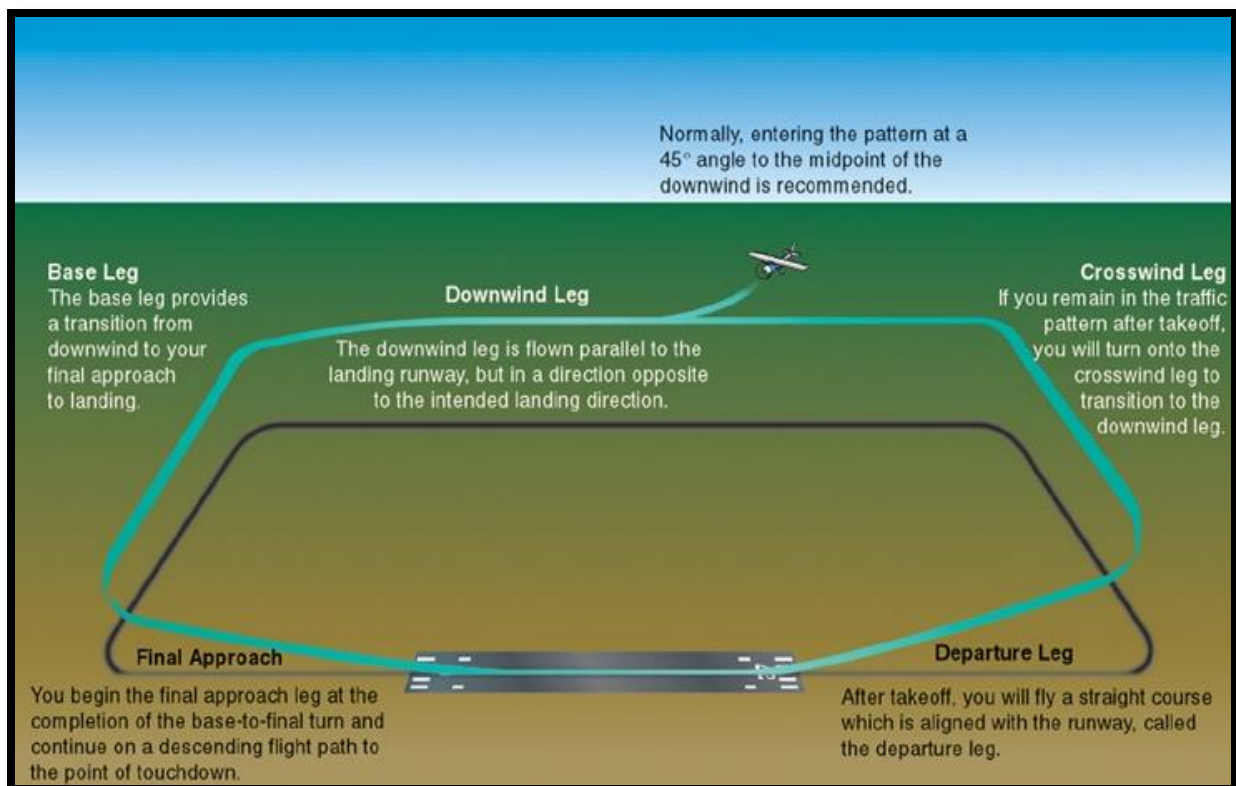
## AERODROME TRAFFIC :

- 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 :

- **The specified path** to be flown by aircraft operating **in the vicinity of an aerodrome** .



( Typical of a traffic circuit in an aerodrome )

## 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 .

#### **AIRBORN COLLISION AVOIDANCE SYSTEM ( ACAS ) :**

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

#### **AIRCRAFT :**

- **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 .

#### **AIRCRAFT IDENTIFICATION :**

- **A group of letters, figures or a combination** is , , **the aircraft call sign** used **to identify the aircraft** in air-ground air traffic services communications .

#### **AIRCRAFT PROXIMITY :**

- **A situation** in which, **in the opinion of a pilot or air traffic services personnel, the distance** between aircraft as well as **their relative positions** and **speed** have been such that **the safety of the aircraft** involved may have been compromised.

#### **AIRPROX:**

- The **code word** used in an air traffic **incident report** to designate aircraft proximity .

#### **aircraft proximity is classified as follows :**

- **Risk of collision** : The risk classification of an aircraft proximity in which **serious risk of collision has existed** .
- **Safety not assured** : The risk classification of an aircraft proximity in which **the safety of the aircraft may have been compromised** .



- **No risk of collision** : The risk classification of an aircraft proximity in which **no risk of collision has existed** .
- **Risk not determined** : The risk classification of an aircraft proximity in which **insufficient information was available** to determine the risk involved.

#### **AIR-GROUND COMMUNICATION :**

- **Tow-way communication** between **aircraft** and **stations** or locations **on the surface of the earth** .

#### **AIR-TO-GROUND COMMUNICATION :**

- **One-way** communication from **aircraft to stations** or locations **on the surface of the earth** .

#### **AIR-REPORT ( AIREP ) :**

- A **report from an aircraft in flight** prepared in conformity with requirements for **position**, and **operational** and/or **meteorological reporting** .

#### **AIRMET INFORMATION :**

- Information issued by a **meteorological watch office** concerning the occurrence or expected occurrence of specified **en-route weather phenomena** which may effect the safety of **low-level** aircraft operations and which **was not already included in the forecast issued** .

#### **AIRTAXIING :**

- Movement of a **helicopter/VTOL** above the surface of an aerodrome, normally in ground effect and at a **ground speed** normally **less than 37km/h(20kt)** .

**NOTE :** The actual **height** may vary, and some helicopter may require air-taxiing **above 8m (25ft) AGL** to reduce ground effect turbulence or provide clearance for cargo **slingloads** .

**AIR TRAFFIC CONTROL CLEARANCE :**

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

**AIR TRAFFIC :**

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

**AIR TRAFFIC CONTROL SERVICE :**

- A service provided for the purpose of :
  - a ) **preventing collisions** between **aircraft**, and; on the **manoeuvring area** between **aircraft** and **obstructions**; and
  - b ) **expediting** and maintaining an **orderly fellow** of air traffic .

**AIR TRAFFIC CONTROL UNIT :**

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

**AIR TRAFFIC SERVICE (ATS) :**

- 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 tower** .

**AIR TRAFFIC SERVICE AIRSPACE :**

- 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 . ( **ATS** airspaces are classified as **A to G** ) .

**AIR TRAFFIC SERVICE REPORTING OFFICE ( ARO ) :**

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

**ALERTING SERVICE :**

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

**NOTE 1 :** The Alerting Service is **provided by** the **ATS unit responsible** for the aircraft at **that moment**.

**NOTE 2 :** Alerting Service shall be **provided :**

for all **controlled flight**, to any aircraft known to be subject of **unlawful interference**, and to all aircraft having **filed a flight plan or known** to the ATS.

**NOTE 3 :** The **ATS unit** is responsible to **Initiate** a phase of **emergency** .

The **phases** related to an aircraft in **emergency** or believed in emergency are:

**1) uncertainty phase, 2) alert phase, 3) distress phase .**

**ALERT PHASE :**

- A situation wherein **apprehension** exists as to the **safety of an aircraft and its occupants** .

**ALERFA :**

- The **code** word used to designate an **alert phase** .

**UNCERTAINTY PHASE :**

- A situation wherein **uncertainty** exists as to the **safety of an aircraft and its occupant** .

**INCERFA :**

- The **code** word used to designate an **uncertainty phase** .

**DISTRESS PHASE :**

- **A situation** wherein there is reasonable **certainty** that an **aircraft and its occupants** are threatened by **grave** and **imminent danger** or require **immediate assistance** .

**DETRESFA :**

- The **code** word used to designate a **distress phase** .

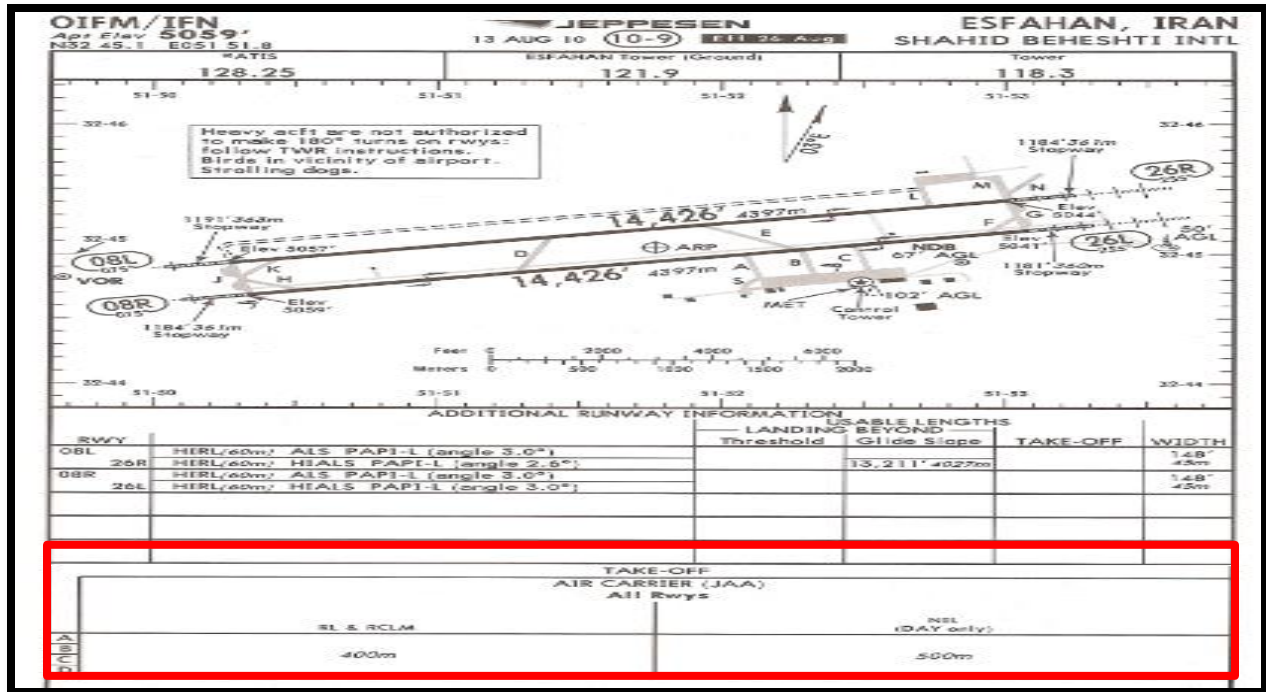
**ALTERNATE AERODROME :**

- An aerodrome to which an aircraft **may proceed** when it becomes either **impossible** or **inadvisable** to proceed to or **land** at the **aerodrome of intended landing** .

**ALTERNATE AERODROMES INCLUDE THE FOLLOWING :**

- **TAKE-OFF ALTERNATE** : **An alternate aerodrome** at which an aircraft can land should this become necessary **shortly after take-off** and it is **not possible to use the aerodrome of departure** .
- **EN-ROUTE ALTERNATE** : An aerodrome at which an aircraft **would be able to land** after experiencing an abnormal or emergency condition **while en route** .
- **DESTINATION ALTERNATE** : An alternate aerodrome to which an aircraft **may proceed** should it becomes 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 alternate** or a **destination alternate** aerodrome for that flight .



( The visibility required for take-off from Esfahan/Shahid Beheshti airport )

**APPROACH CONTROL SERVICE :**

- Air traffic control **service** for **arriving** or **departing** controlled flights .

**APPROACH CONTROL UNIT :**

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

**APPROACH SEQUENCE :**

- The **order** in which **two** or **more** aircraft are **cleared to approach** to land at the aerodrome .

**AREA CONTROL SERVICE :**

- Air traffic **control service** for controlled flights **in control area** .

**AREA CONTROL CENTER( ACC ) :**

- A **unit** established to **provide** ATC **service** to controlled flights **in control areas** under its jurisdiction, **identified by** the name of **nearby city** .

**APPROPRIAE ATS AUTHORITY :**

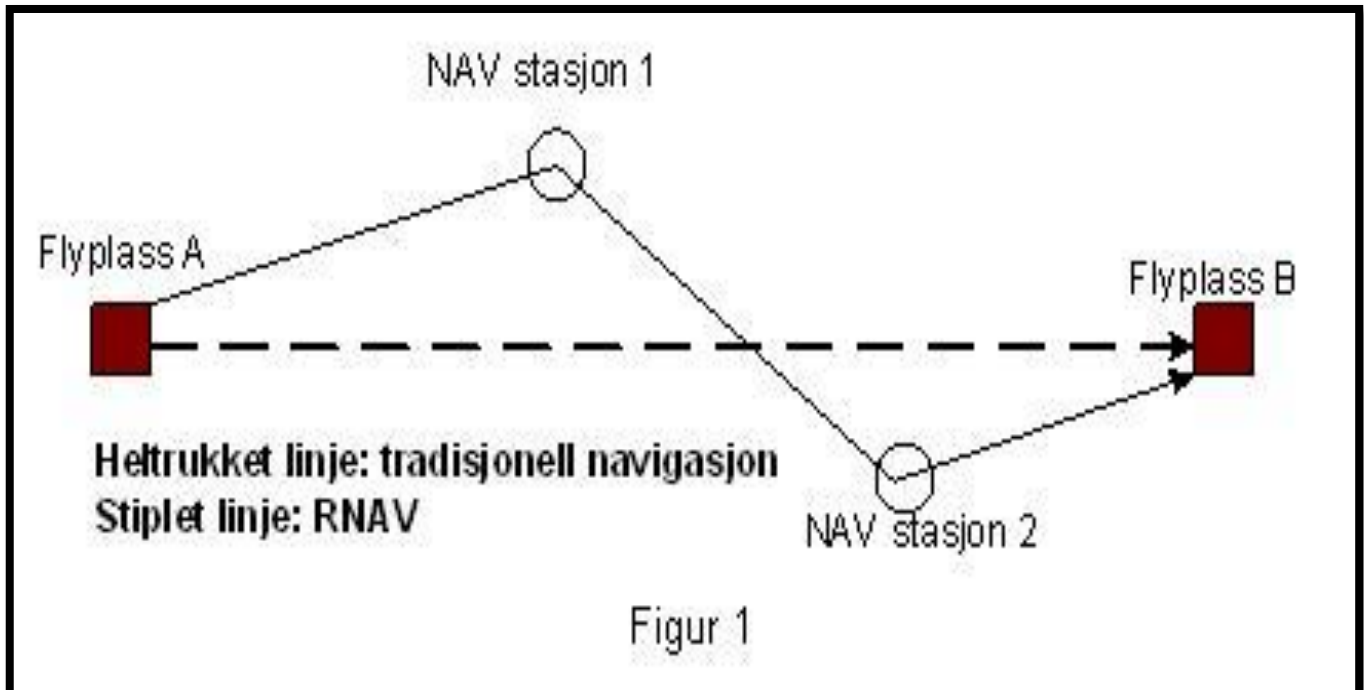
- The relevant authority **designated by the state** responsible for providing **air traffic services** in the airspace concerned .

**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 :** The relevant authority of the state having sovereignty over the **territory being overflown** .

**AREA NAVIGATION (RNAV) :**

- A **method of navigation** which permits aircraft operation on **any desired flight path** within the coverage of **the station-referenced** navigation aids or **within the limits** of the capability of **self-contained aids**, or a combination of these .



( Area navigation method is shown by dashed line )

**AREA NAVIGATION ROUTE :**

- An **ATS route** established for the use of aircraft capable of **employing area navigation** .

## BENEFITS OF RVAV TECHNIQUES :

1. Establishment of more directly routes **reducing the flight distance**.
2. Establishment of dual or parallel route so, **a greater flow of traffic**.
3. Establishment of **bypass routes** for high density **traffic areas**.
4. **Reduce the number** of ground **navigation facilities**.

## RNP TYPE :

- A containment **value** expressed as a distance **in nautical miles** from the intended position within which flights would be for **at least 95 per cent** of the total flying time .
- For example, **RNP 4**, represents a navigation accuracy of **plus or minus 7.4km (4NM)** on a **95 per cent** containment basis .

## AUTOMATIC DEPENDENT SURVEILLANCE (ADS) :

- A **surveillance technique** in which **aircraft automatically provide**, via data link, data derived from on-board **navigation** and **position-fixing** systems .

## AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS) :

- The **automatic provision of current, routine information** to **arriving** and **departing** aircraft throughout **24 hours** or a **specified portion** .

## ATIS :

- The **symbol** used to designate automatic terminal information service .
- ABOUT ATIS : Broadcasted **by voice ATIS** or **D-ATIS** / To reduce voice communication / One for **arriving** or one for **departing** aircraft or one for **both arriving and departing** aircraft / A **discrete VHF** frequency shall be used, if not possible, on **VOR** frequency, **not ILS** / The broadcast shall be **continuous** and **repetitive** / Information contained shall be related to **approach, landing and takeoff** / For **international use**, the ATIS should be available in the **English** / The ATIS broadcast should **not exceed 30 seconds** / The information shall relate to a **single aerodrome** / The information **shall be updated immediately a significant change occurs** / ATIS message shall be the **responsibility of the ATS** / ATIS message shall be identified by a **ICAO spelling alphabet**, and shall be in **alphabetical order** .

- Pilots shall **acknowledge** ATIS information reception **upon establishing communication** with approach or tower ( **only altimeter setting** ).
- ATS when replying, shall **provide the pilots** with the **current altimeter setting** and **any elements** that need updating .

**CONTENTS OF ATIS FOR BOTH ARRIVING AND DEPARTING AIRCRAFT :**

Name of the aerodrome / designator / time of observation / type of approach/ runway in use / runway surface condition / holding delay/ transition level / other operational information / wind speed and direction / visibility and RVR / present weather / cloud below 1500m ( 5000ft ) or below the highest minimum sector altitude, whichever is greater / cumulonimbus / air temperature / dew point / altimeter setting .

**NOTE :** Runway Visual Range **is reported** and passed to an aircraft **when the visibility** falls **below 1,500 m** .

**ATS ROUTE :**

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

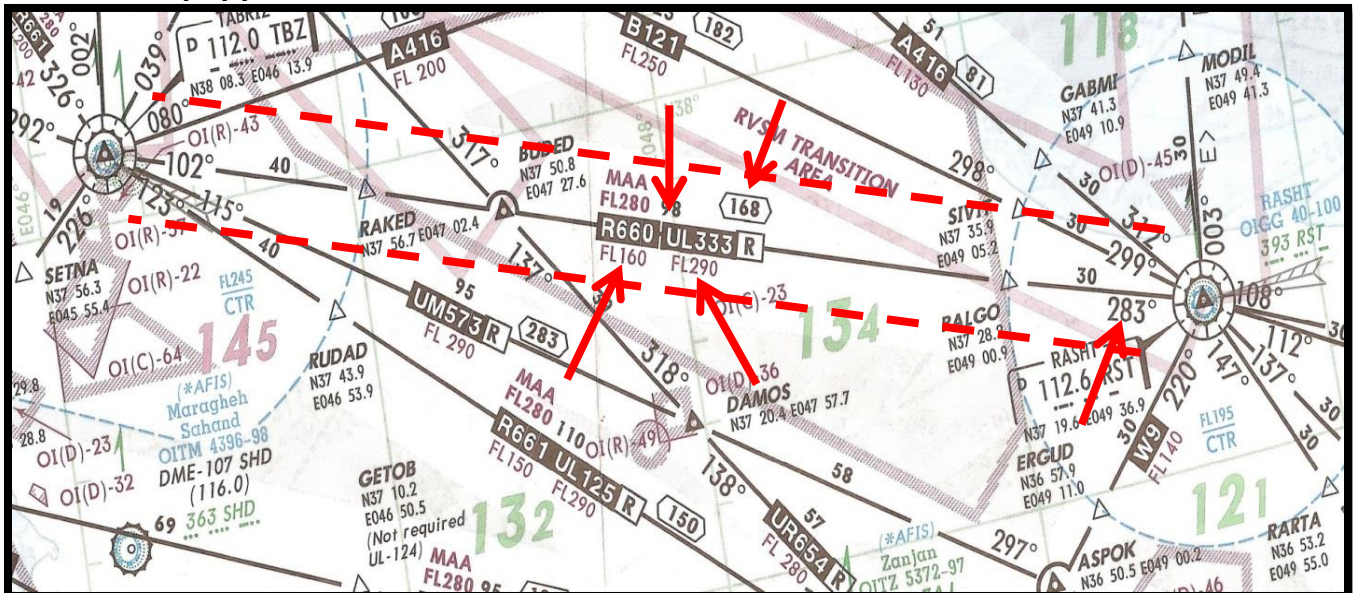
**NOTE 1 :** The term “ **ATS route** “ is used to **mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc** .

**NOTE 2 :** An **ATS route** is defined by **route specification** 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** .



**AIRWAY :**

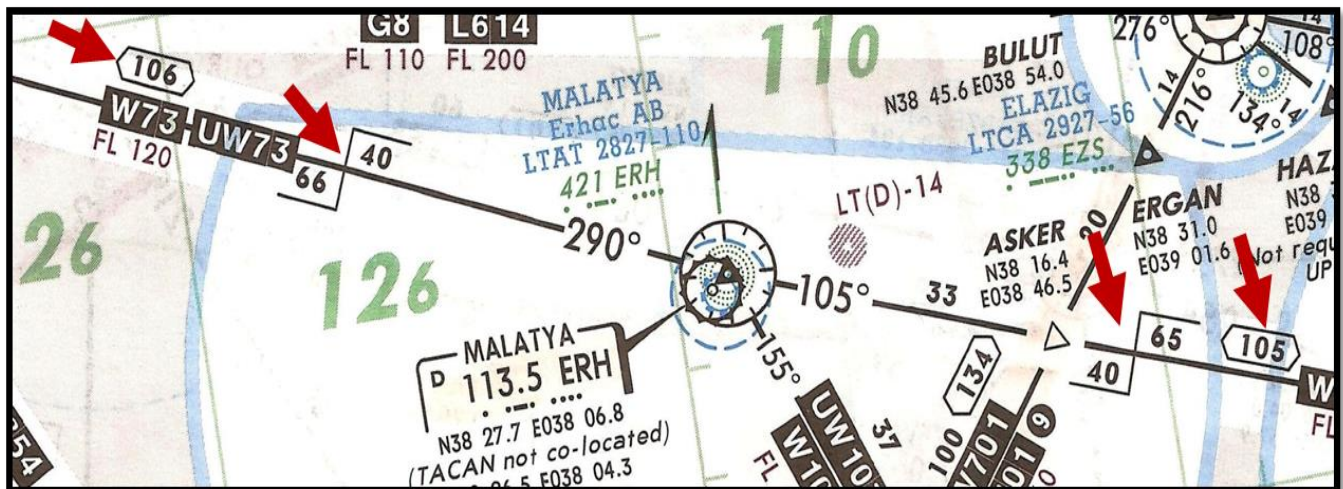
- A **control area** or portion thereof established in the form of a **corridor** equipped with **VOR** or **NDB**.



( Airway between TBZ and RST with specified information )

**NOTE 1 :** Airways are designated by alphabet/numeric basies , depending on either ATS routes or R-NAV routes .

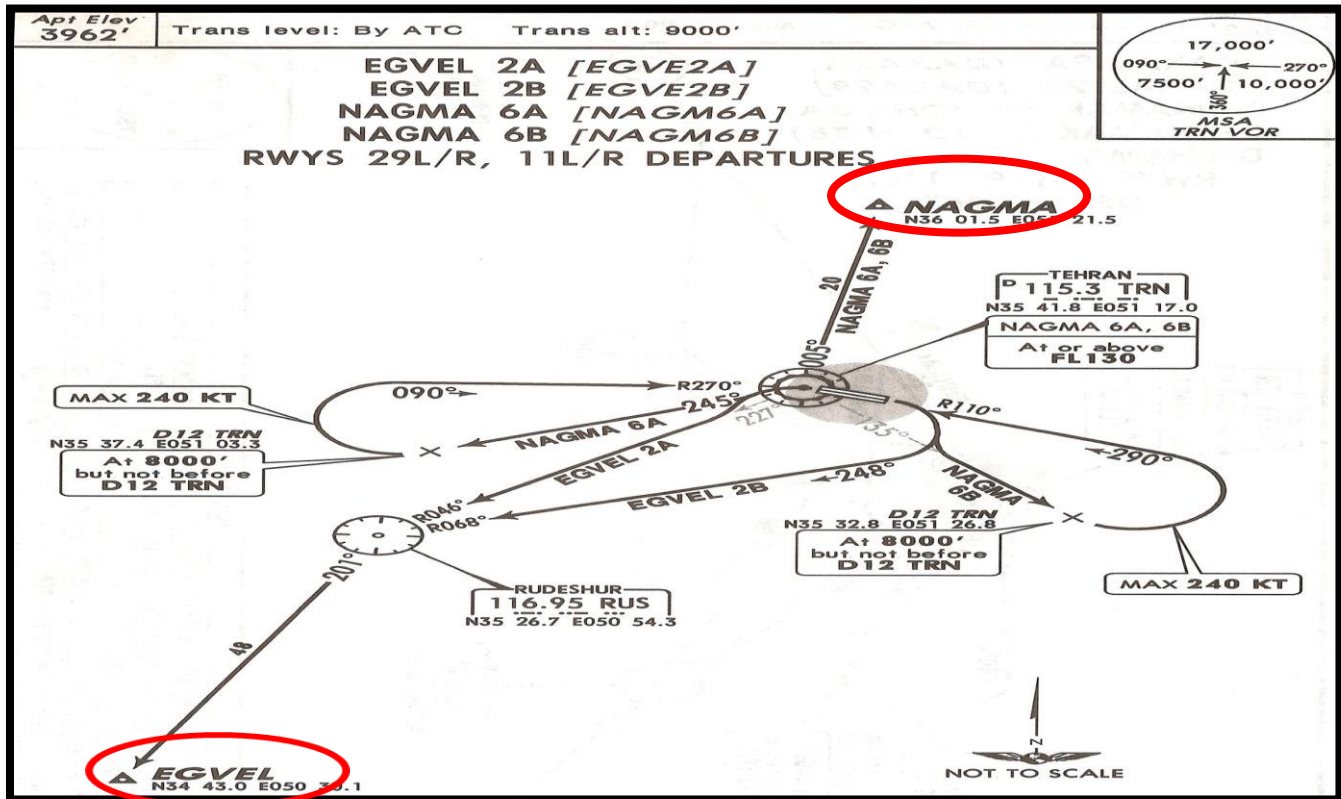
- The establishment of **change-over points** should be **limited to** route segments of **110 km (60 NM) or more**, Except in some special cases .



( Change-over-points are defined for VOR routes of more than 60 N.M )

**STANDARD INSTRUMENT DEPARTURE (SID) :**

- A **designated IFR departure route** linking the **aerodrome** or a **specified runway** of the aerodrome with a **specified significant point**, normally on a designated **ATS route**, at which the **en-route phase of flight commences** .

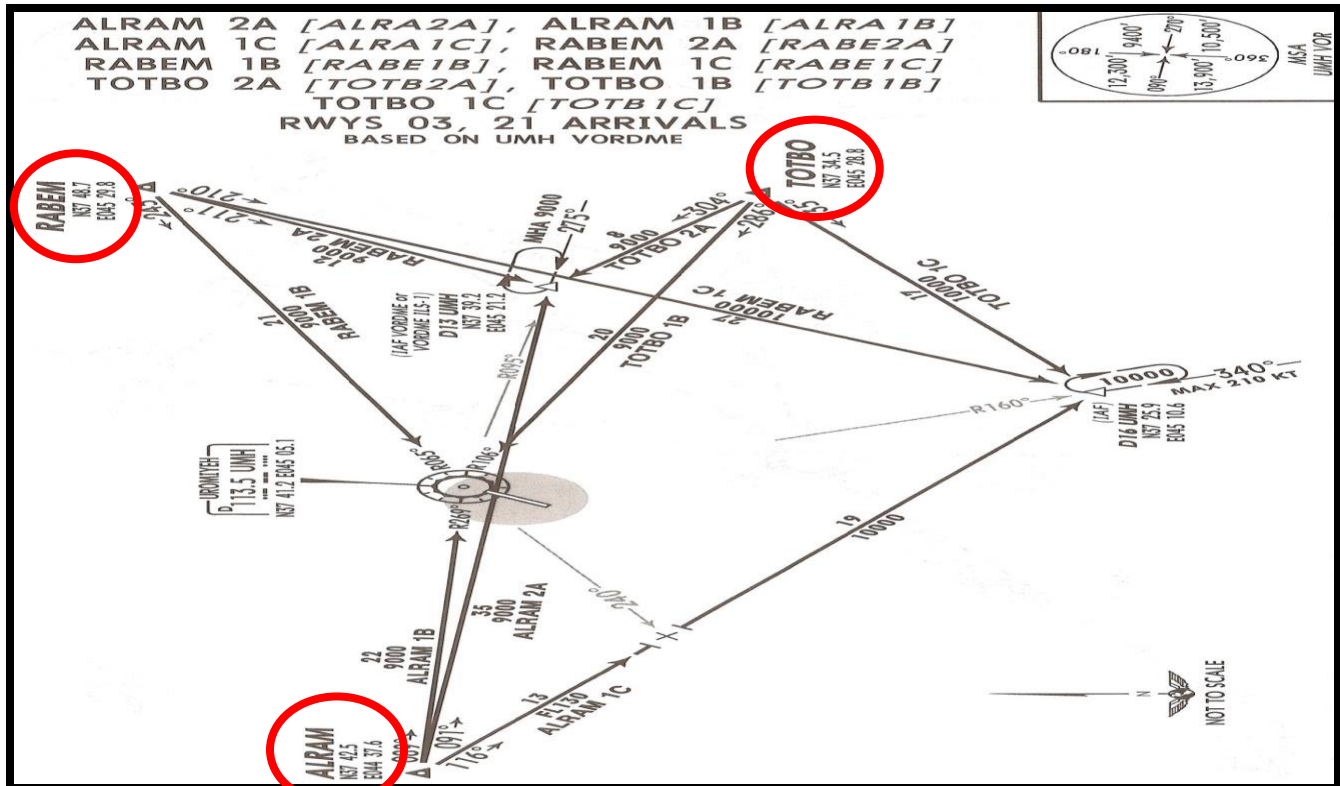


( IFR departure route followed by aircraft to join points NAGMA and EGVEL )

**NOTE 2 : SIDs are designated by the name of the point where the en-route structure of the flight begins .**

**STANDARD INSTRUMENT ARRIVAL (STAR) :**

- A **designated IFR arrival route** linking a **significant point**, normally **on an ATS route**, with a **point** from which a published instrument approach procedure (**IAP**) can be commenced (**IAF**).



( STARs followed by aircraft to leave airway toward I.A.F for approach )

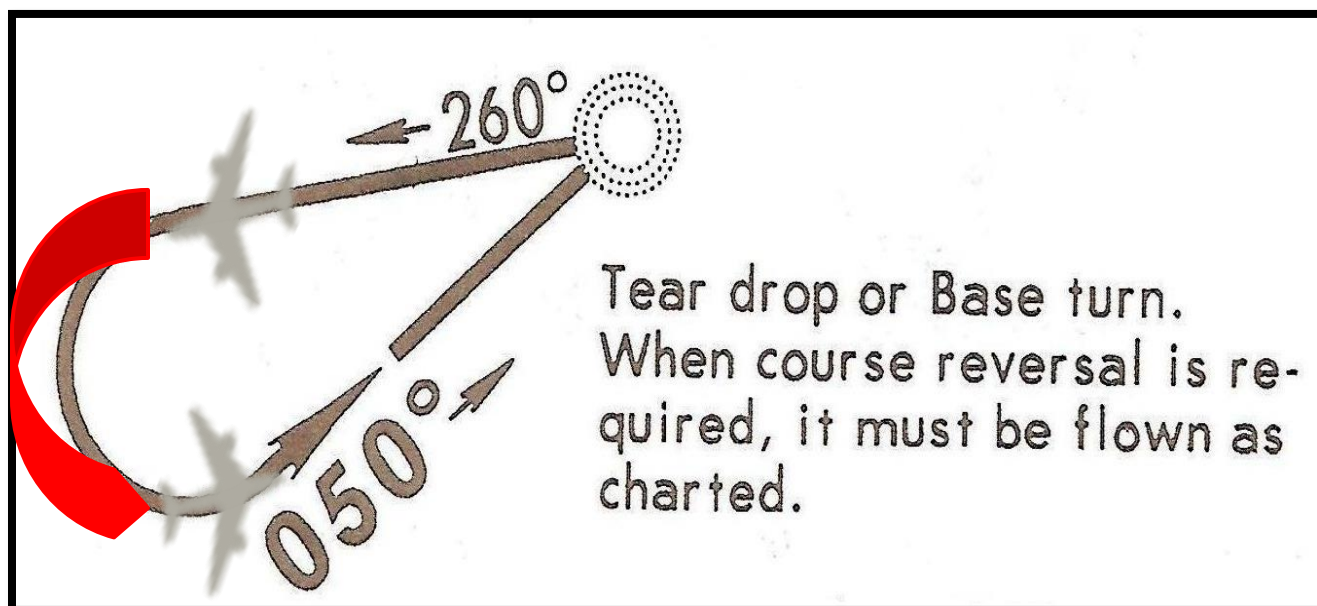
**NOTE 3 :** STARs are designated by the name of the point where the en-route structure ends and instrument approach procedure begins .

Textual Description (Examples)	Symbology
Altitude window / Between 3000' and 6000'	<u>6000'</u> <u>3000'</u>
At or above / Above 3000'	<u>3000'</u>
At or below / Below 5000'	<u>5000'</u>
Mandatory 4000'	<u>4000'</u>
Recommended 9000'	9000'
Expect FL90	Expect <b>FL90</b>
At 9000' or altitude provided by ATC	<u>9000'</u> or by ATC

( Description of altitudes depicted on instrument charts )

#### BASE TURN :

- A **turn** executed by the aircraft during the **initial approach** between the **end of the outbound track** and the **beginning** of the **intermediate** or **final approach track**. **The tracks are not reciprocal** .



**NOTE** : Base turns may be designed as being made **either** in **level flight** or while **descending**, according to the circumstances of each individual procedure .

#### BLIND TRANSMISSION :

- A **transmission from one station to another station** in circumstances where two-way communication cannot be established but where it is believed that the **called station is able to receive the transmission** .
- If radio **communication failure** is experienced on an IFR flight **in IMC**, generally **the pilot** shall **try** to get contact on other frequencies either ground or aircraft stations and **transmit blind** indicating important details required **2 times** .

#### BROADCAST :

- A **transmission of information** relating to air navigation that is not addressed to a specific station or s stations .

#### CEILING :

- The **height** above the ground or water of the **base** of the lowest layer of **cloud below 6000m (20,000ft)** covering **more than half the sky** .

#### CLEARANCE LIMIT :

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

#### CODE (SSR) :

- The **number** assigned to a particular multiple pulse **reply signal** transmitted **by a transponder** in mode **A** or mode **C** .

#### CONTROL AREA :

- A **controlled airspace extending upwards from a specified limit above the earth** (the minimum height AGL for the base of a CTA is **200 m or 700 ft**) .

#### CONTROLLED AERODROME :

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

### CONTROLLED AIRSPACE :

- An airspace of **defined dimensions** within which air traffic **control service** is provided in accordance with the airspace above .

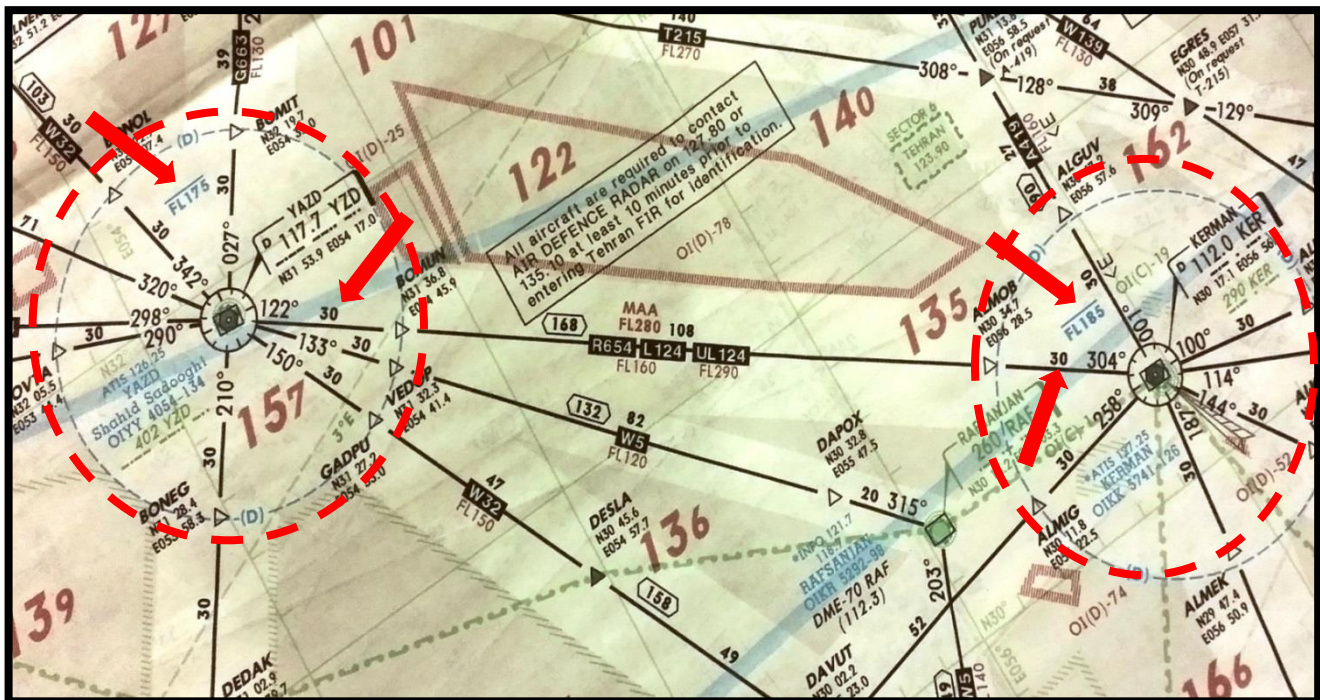
**NOTE :** Controlled airspace is a generic term which covers ATS airspace classes **A, B, C, D** and **G** .

### CONTROLLED FLIGHT :

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

### CONTROL ZONE :

- **A controlled airspace extending upwards from the surface of the earth to a specified upper limit ( at least 5 n.m in the direction of approach ) .**



(Control zone (CTR ) for Yezd and Kerman aerodrome with specified limit )

### CRUISE CLIMB :

- An aeroplane **cruising technique** resulting in a **net increase in altitude** as the **airplane mass decreases** .

### CRUISING LEVEL :

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

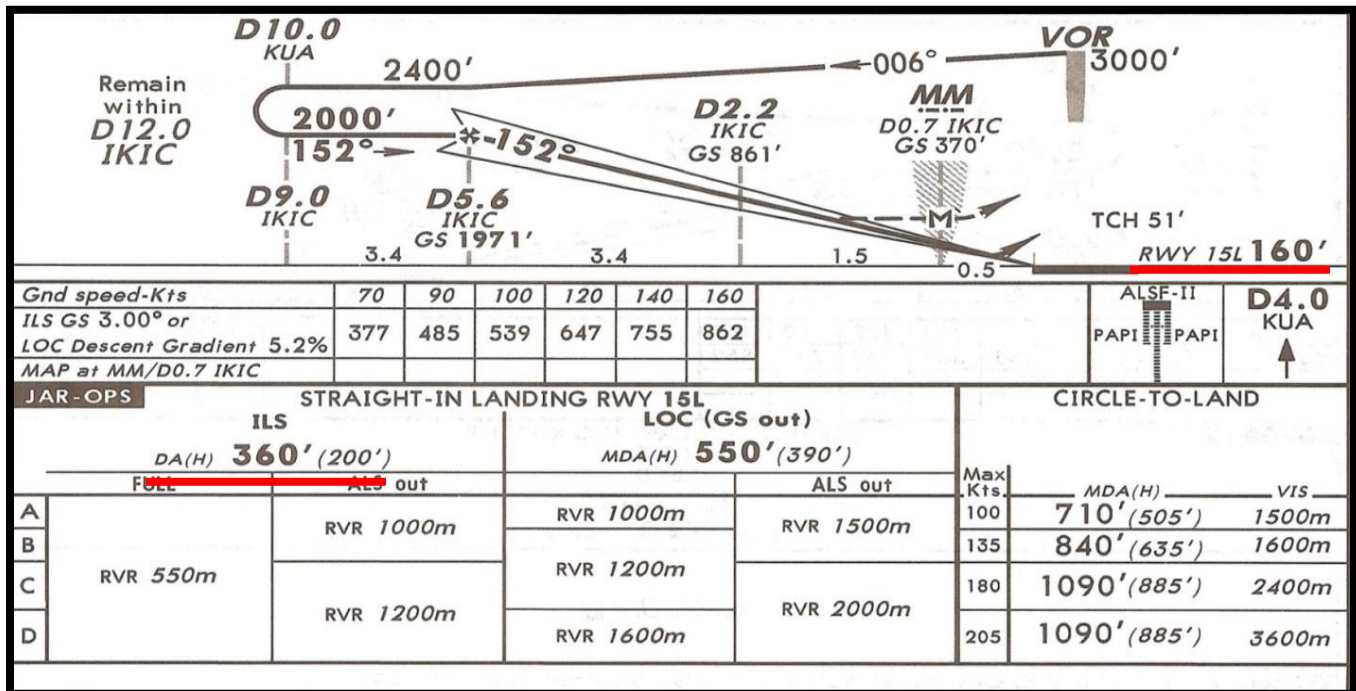
**CURRENT FLIGHT PLAN (CPL) :**

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

**DECISION ALTITUDE (D.A) OR DECISION HEIGHT (D.H) :**

- A **specified altitude or height** in the **precision approach** or approach with vertical guidance at which a **missed approach must be initiated** if the required **visual reference to continue the approach has not been established** .

**NOTE :** Decision altitude (**DA**) is referenced to **mean sea level** and decision height (**DH**) is referenced to the **threshold elevation** .



( DA(H)s are specified in landing minima section of I.A.P charts )

**DEPENDENT PARALLEL APPROACHES :**

- **Simultaneous approaches to parallel or near-parallel instrument runways** where **radar separation minima** between aircraft on adjacent runway center lines **are prescribed** .

#### INDEPENDENT PARALLEL APPROACHES :

- **Simultaneous approaches** to **parallel** or **near-parallel** instrument **runways** where **radar separation minima** between aircraft on adjacent extended runway center lines **are not prescribed** .

#### INDEPENDENT PARALLEL DEPARTURES :

- **Simultaneous departures** from **parallel** or **near-parallel** instrument runways .

#### NEAR-PARALLEL RUNWAYS :

- **Non-intersecting runways** whose extended **center lines** have an angle convergence of **15 degrees or less** .

#### DISCRETE CODE :

- A four-digit **SSR code** with the **last two digits not being "00"** .

#### ELEVATION :

- The **vertical distance** of a point or a level, on or affixed to the surface of the earth, **measured from mean sea level** .

#### EMERGENCY PHASE :

- A generic term meaning, as the case may be, **uncertainty phase, alert phase** or **distress phase** .

#### ESTIMATED OFF-BLOCK TIME (EOBT):

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

#### ESTIMATED ELAPSED TIME (EET) :

- The **estimated time required** to proceed from one **significant point** to **another** .



**TOTAL ESTIMATED ELAPSED TIME ( TOTAL EET ) :**

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

**ESTIMATED TIME OF ARRIVAL (ETA) :**

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

**EXPECTED APPROACH TIME (EAT) :**

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

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

**FILED FLIGHT PLAN (FPL) :**

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

**FINAL APPROACH :**

- That part of **an instrument approach procedure** which commences at the specified **final approach fix** or **point**, or;

where no such a fix or point is not specified :

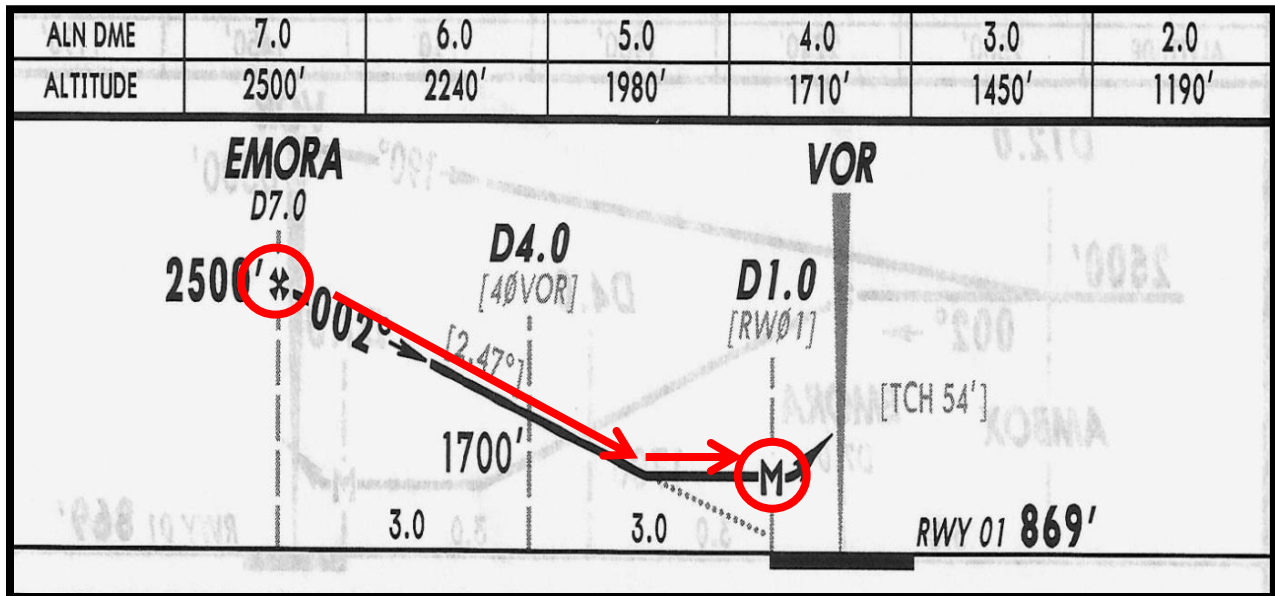
a ) at the end of the last procedure turn, base turn or inbound turn of a race track procedure, if specified; or

b ) at the point of interception of the last track specified in the approach procedure; and

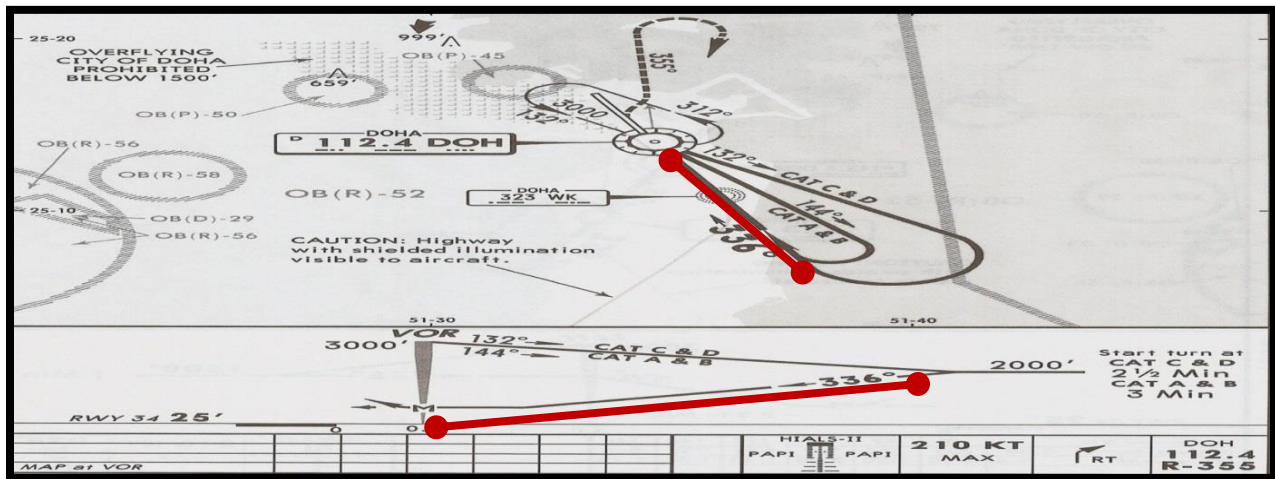
➤ ends at a point in the vicinity of aerodrome (missed approach point) from which :

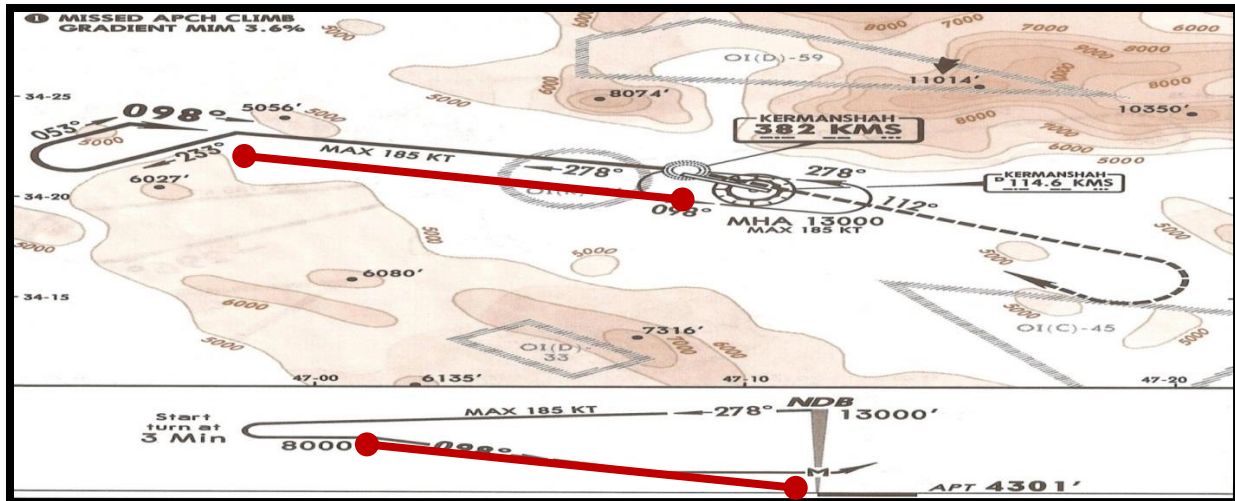
1) a landing can be made; or

2) a missed approach procedure is initiated .

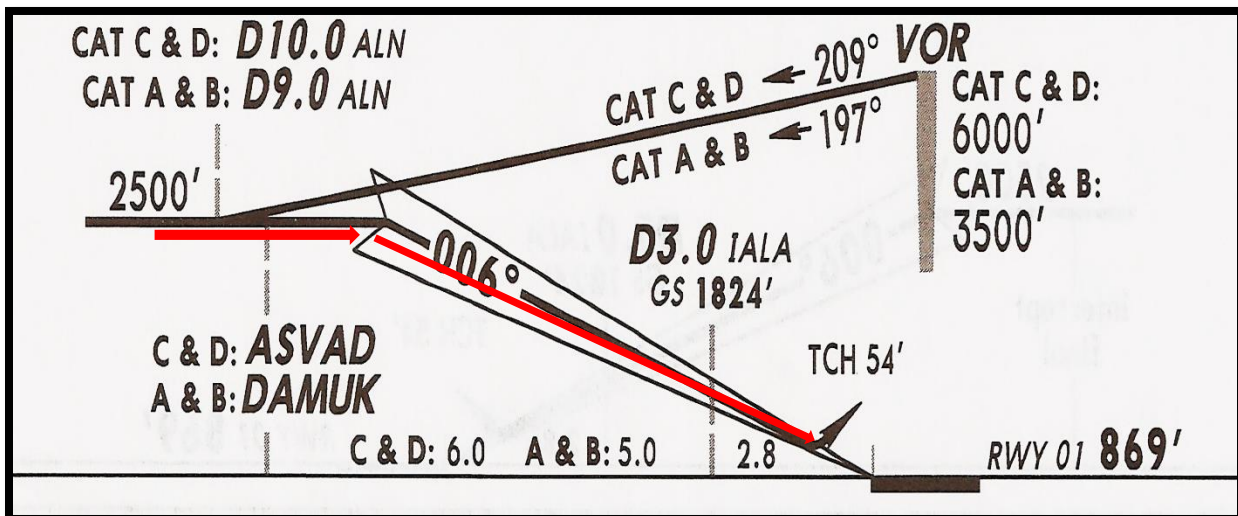


( In NPAs, Final approach segment, commences at FAF and ends at MAP )





( Final approach segment, where no final approach fix is specified )



( In PAs, final segment begins when the aircraft intersects with glide slope )

**FLIGHT CREW MEMBER :**

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

**FLIGHT INFORMATION CENTER (FIC) :**

- A **unit** established to **provide** flight **information** service and **alerting** service .

### FLIGHT INFORMATION REGION ( FIR ) :

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

### FLIGHT INFORMATION SERVICE ( FIS ) :

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

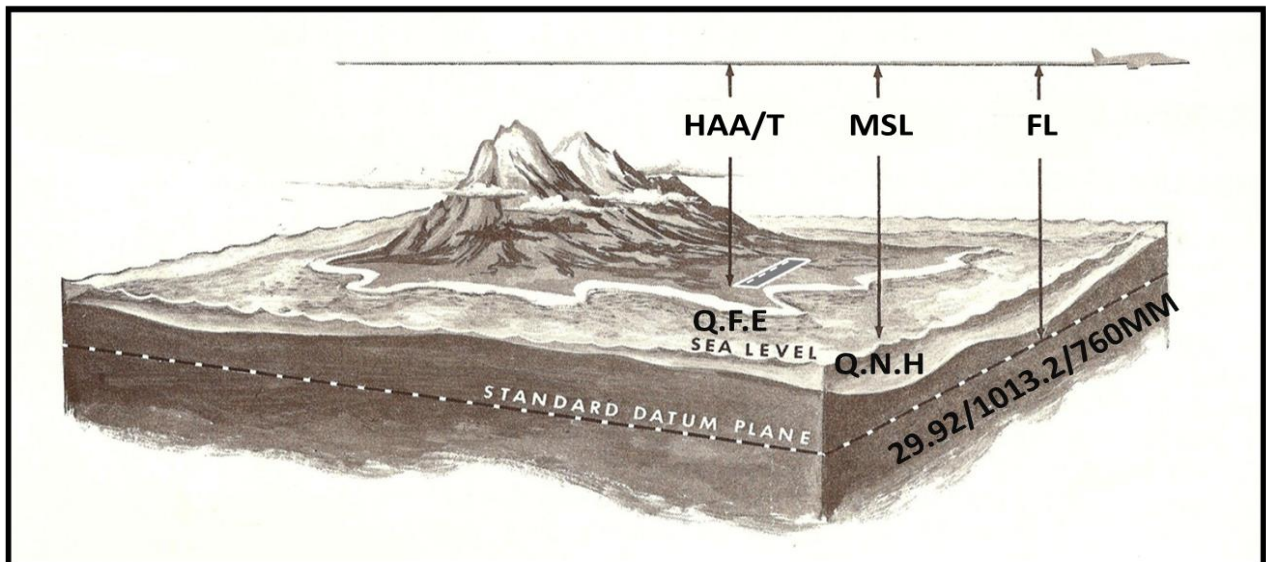
**NOTE** : Aerodrome Flight Information Service (**AFIS**), can **only supply limited services** and under **no** circumstances may it supply **ATC services**.

### 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** : A **pressure type altimeter** is calibrated in accordance with the standard atmosphere :

- when set to a **QNH** altimeter setting, will indicate **altitude** ;
- when set to a **QFE** altimeter setting, will indicate **height**;
- when set to a pressure of **1013.2** hpa, may be used to indicate **flight level** .



( Aircraft maintaining a constant level, but, in relation to various settings )

**LEVEL :**

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

**FLIGHT PLAN :**

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

**FORECAST :**

- A statement of **expected meteorological conditions** for a specified time or period, and for a specified area or portion of airspace .

**GROUND VISIBILITY :**

- The **visibility at an aerodrome**, as specified by an **accredited observer** or by **automatic systems** .

**FLIGHT VISIBILITY :**

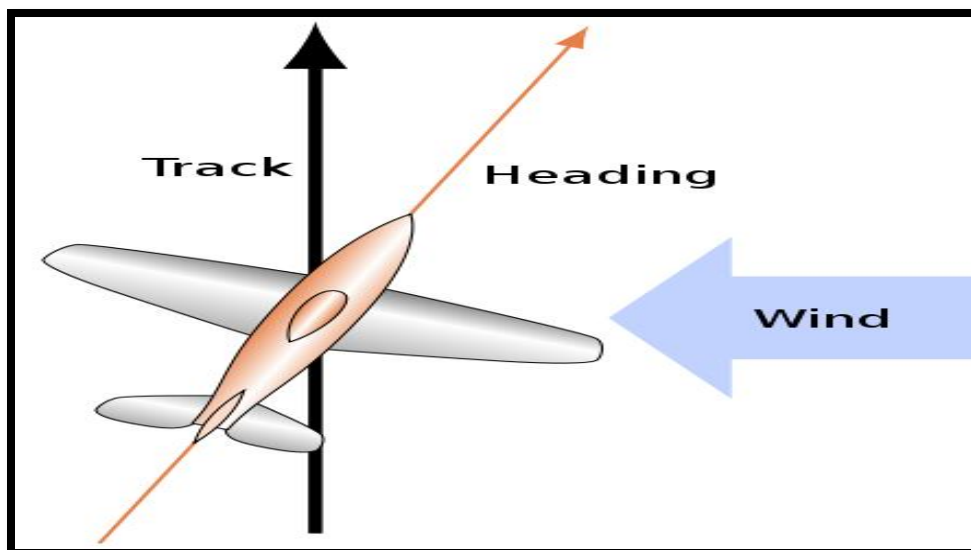
- The visibility **forward from the cockpit of an aircraft in flight** .

**GLIDE PATH :**

- A **descent profile** determined for **vertical guidance** during **final approach** .

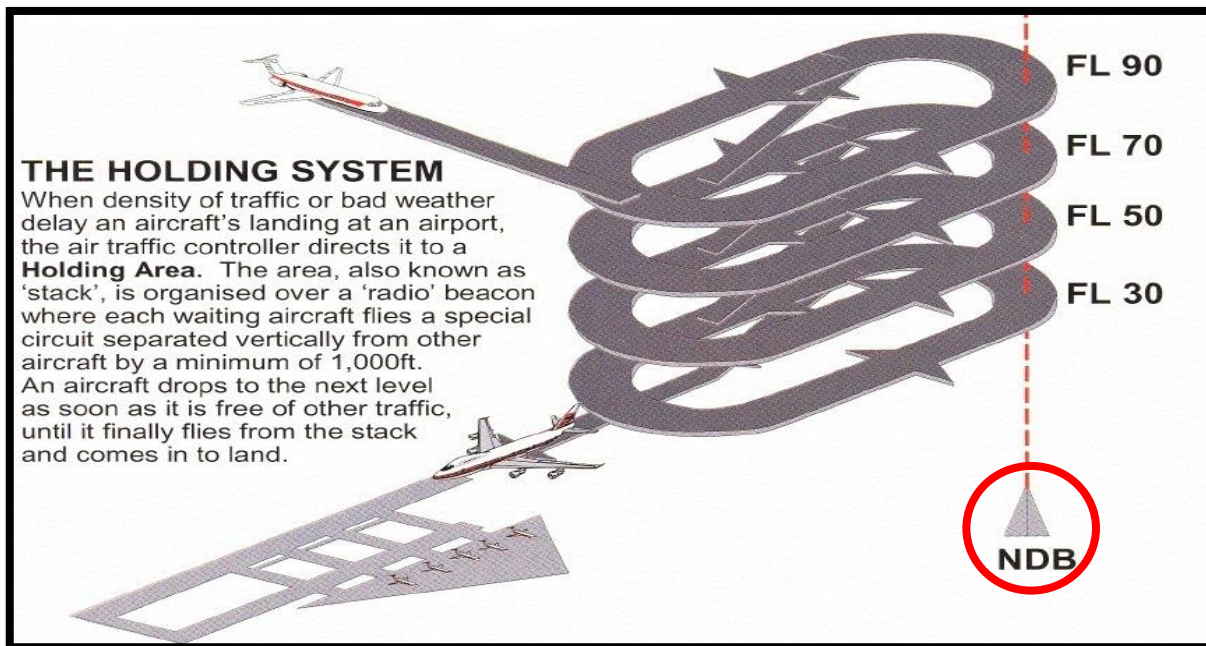
**HEADING :**

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



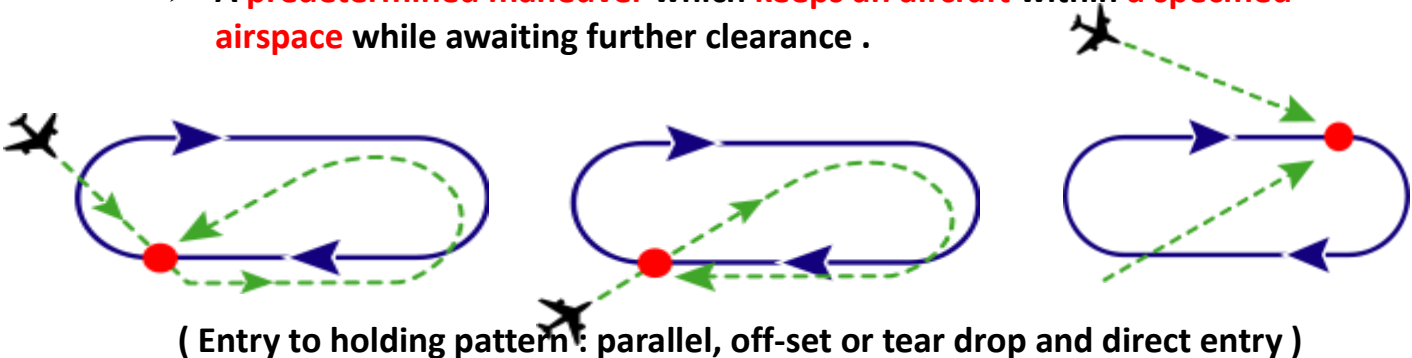
## HOLDING FIX :

- A geographical **location** that **serves** as a reference for a **holding** procedure.



## HOLDING PROCEDURE :

- A **predetermined maneuver** which **keeps an aircraft** within a **specified airspace** while awaiting further clearance .



## HOT SPOT :

- A **location** on an aerodrome **movement area** with a history or potential **risk of collision** or runway incursion, and where **heightened attention** by **pilots/ drivers** is necessary .
- **ICAO recommends** the local generation of **AIP** charts to **show runway hot spots**, which, must be **kept up to date** and revised as necessary .

**IFR FLIGHT :**

- A **flight** conducted in accordance with the **instrument flight rules** .

**IFR :**

- The **symbol** used to designate the **instrument flight rules** .

**VFR FLIGHT :**

- A **flight** conducted in accordance with the **visual flight rules** .

**VFR :**

- The **symbol** used to designate the **visual flight rules** .

**VISUAL METEOROLOGICAL CONDITIONS (VMC) :**

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

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

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

\*\* When so prescribed by the appropriate ATS authority:

- a) flight visibilities reduced to not less than 1 500 m may be permitted for flights operating:
  - 1) at speeds that, in the prevailing visibility, will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or
  - 2) in circumstances in which the probability of encounters with other traffic would normally be low, e.g. in areas of low volume traffic and for aerial work at low levels.
- b) HELICOPTERS may be permitted to operate *in less than 1 500 m* flight visibility, if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision.

\*\*\*The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.

**( Meteorological conditions required to fly in accordance with VFR )**

#### VMC :

- The **symbol** used to designate visual meteorological conditions .

#### INSTRUMENT METEOROLOGICAL CONDITIONS (IMC) :

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

#### IMC :

- The **symbol** used to designate instrument meteorological conditions .

NOTE : In a control zone, a VFR flight may proceed under instrument meteorological conditions if and as authorized by air traffic control .

#### SPECIAL VFR FLIGHT (SVFR) :

- A VFR flight **cleared by air traffic control** to operate within a **control zone** in meteorological conditions below VMC .
- minimum **ground visibility** required to enable a **SVFR** flight to take off from an aerodrome in a **CTR** according to **ICAO** legislation is **1,500 m**, and, according to **iran AIP** is **2,000 m** .
- VFR operations can be **suspended** by The **area control center** within whose CTA the aerodrome is located .
- The **decision** in which a flight to be operated **either** in accordance with **IFR** flight rules or **VFR** flight rules **is** the responsibility of **pilot-in-command** .

#### LANDING AREA :

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

#### RUNWAY :

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



## ACCIDENT :

- An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all persons have disembarked, in which :

- a ) a person is **fatally** or **seriously injured**;
- b ) the **aircraft sustains damage** or **structural failure**;
- c ) the aircraft is **missing** or **completely inaccessible** .

NOTE 1: An aircraft is **considered to be missing** when the **official search** has been **terminated** and the **wreckage has not been located** .

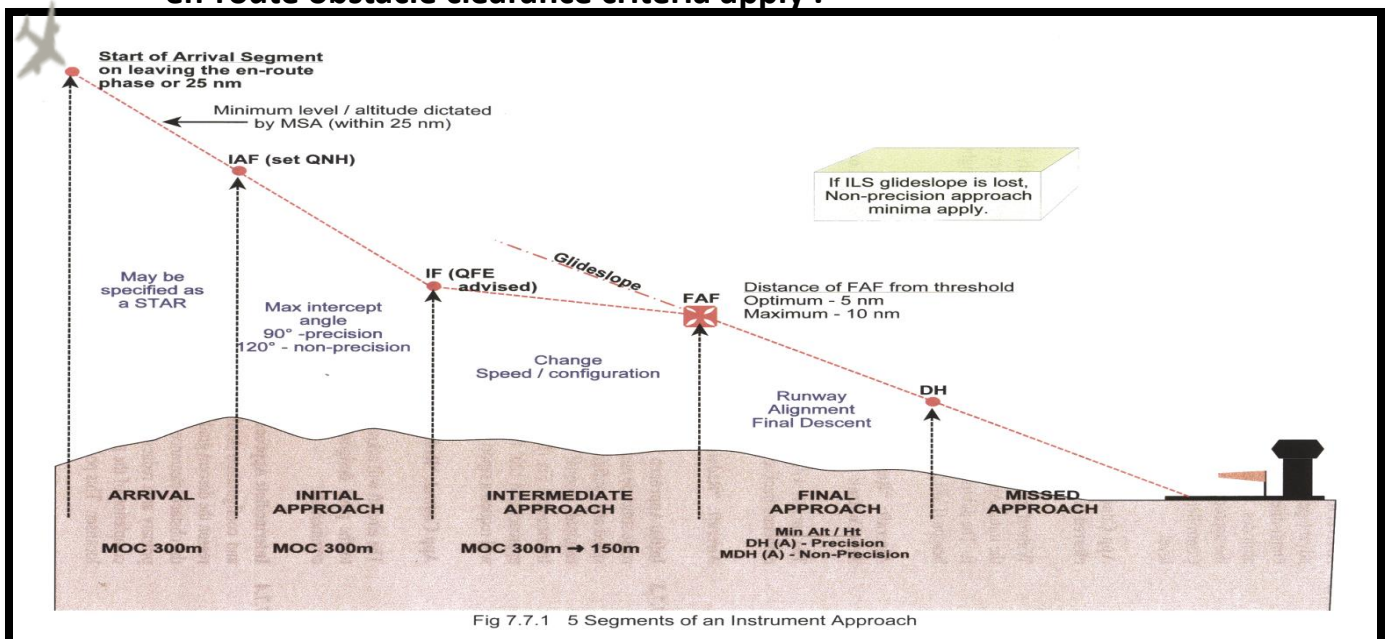
NOTE 2 : The type of incidents are of **main interest** to the International Civil Aviation Organization (ICAO) for **accident prevention studies** .

## INCIDENT :

- An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect **the safety of operation** .

## INSTRUMENT APPROACH PROCEDURE (IAP) :

- A series of **predetermined maneuvers** 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 ( **misted approach point** ) and thereafter, if a landing is not completed, **to a position** at which **holding** or **en-route obstacle clearance criteria** apply .



## **I.A.Ps ARE CLASSIFIED AS FOLLOWS :**

### **NON-PRECISION APPROACH (N.P.A) PROCEDURE :**

- An instrument approach procedure which **utilizes lateral guidance** but does not utilize vertical guidance .

### **PRECISION APPROACH (PA) PROCEDURE :**

- An instrument approach procedure **using precision lateral and vertical guidance** with minima as determined by the category of operation

### **APPROACH PROCEDURE WITH VERTICAL GUIDANCE (APV) :**

- An instrument procedure which **utilizes lateral and vertical guidance** but does **not meet** the **requirements** established for **precision approach** and landing operations .

**NOTE :** Lateral and vertical guidance refer to the guidance provided either by :

- a ) a **ground-based** navigation aids; **or**
- b ) a **computer-generated** navigation data .

- Pilots may **deviate** from a published instrument approach procedure, **if, visual reference** is **established** before the completion of the instrument approach procedure **and** the aircraft is **cleared for a visual approach** .

### **VISUAL APPROACH :**

- An approach **by an IFR flight** when either **part** or **all** of an instrument approach procedure(**I.A.P**) is not completed and the approach is executed **in visual reference to terrain** .

#### INITIAL APPROACH SEGMENT :

- That segment of instrument approach procedure **between** the initial approach fix (**I.A.F**) and the intermediate approach fix (**I.F**) **or**, where applicable, the final approach fix or point (**F.A. F**) .

#### LOCATION INDICATOR :

- A **four-letter code group** formulated in accordance with rules prescribed **by ICAO** and assigned to the location of **an aeronautical fixed station** .

#### MINIMUM FUEL :

- The **term** used to describe a **situation** in which an **aircraft's fuel supply** has reached a state where **little or no delay can be accepted** .

**NOTE** : This is **not an emergency situation** but merely indicates that an **emergency situation** is possible, should any **undue delay occur** .

#### OPERATIONAL CONTROL :

- The **exercise of authority** over the **initiation, continuation, diversion** or **termination of a flight** in the interest of the **safety** of the aircraft and the **regularity** and **efficiency** of the flight .

#### OPERATOR :

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

**MISSED APPROACH PROCEDURE :**

- The **procedure** to be **followed** if the **approach cannot be continued** .

OITR UROMIYEH		JEPESEN 21 MAR 08		11-2		MISSED APCH CLIMB GRADIENT MIM 3.8%		UROMIYEH, IRAN VOR DME ILS-2 Rwy 21	
*ATIS 127.25					*UROMIYEH Tower 118.25 121.9				
LOC IUMH 108.9	Final Apch Crs 209°	GS D7.0 IUMH 6506' (2232')	ILS DA(H) 4510' (236')	Apt Elev 4343'	RWY 4274'				
MISSED APCH: Turn LEFT to intercept R-150 UMH climbing to 7200', then turn LEFT to rejoin the holding at 9000'.									
Alt Set: hPa		Rwy Elev: 147 hPa		Trans level: By ATC		Trans alt: 10000'			
Initial approach restricted to MAX 220 KT.									

( Missed approach procedure with required climb gradient )

**NOTAM :**

- A **notice** distributed **by** means of **telecommunication** containing **information** concerning the **establishment, condition** or **change** in any **aeronautical facility, service, procedure** or **hazard**, the **timely knowledge** of which is **essential to personnel** concerned with **flight operations** .

**`` NO FLIGHT MAY BE COMMENCED UNLESS THERE IS REASONABLE ASSURANCE THAT THE FACILITIES AND SERVICES REQUIRED FOR THE FLIGHT ARE AVAILABLE AND OPERATIONAL ``**

**NOTAM OFFICE :**

- Designated by the **state** for the **exchange of NOTAM internationally, issuance** and **receipt** of NOTAM by telecommunication, **connected to the ACC, FIC** and **aerodrome**, and staffed on a **24-hours basis** .

- If there is **sufficient time** for information to be disseminated **by other means**, a NOTAM is not issued. The time limit is **7 days** .

**OBSTACLE CLEARANCE ALTITUDE (OCA) OR OBSTACLE CLEARANCE (OCH) :**

- The **lowest altitude** or the **lowest height** above the **elevation** of the relevant **runway threshold** or the **aerodrome elevation** as applicable, **used in establishing** compliances with appropriate **obstacle clearance criteria** .

**NOTE 1 :** **OCA** is referenced to **mean sea level** and **OCH** is referenced to the **threshold elevation** .

**NOTE 2 :** In the case of **non-precision** approaches, the **OCH** is referenced to the aerodrome elevation or **the threshold elevation** if that is **more than 2m (7ft) below** the aerodrome elevation.

**NOTE 3 :** An obstacle clearance height( **OCH**)for **circling approach** is referenced to the **aerodrome elevation** .

**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 .

**VECTERING :**

- Provision of **navigational guidance** to aircraft in the form of **specific heading**, based on the use of an ATS surveillance system .

**RADAR APPROACH :**

- An **approach** in which the **final phase** is executed under the **direction of a controller using radar** .

**PRECISION APPROACH RADAR (PAR) :**

- **Primary radar** equipment used to determine the position of an aircraft **during final approach**, in terms of **lateral**, and **vertical deviations** relative to a **nominal approach path**, and in range relative to touchdown .

**RADAR CONTACT :**

- The **situation** which exists when the radar position of a particular aircraft **is seen and identified** on a situation display .

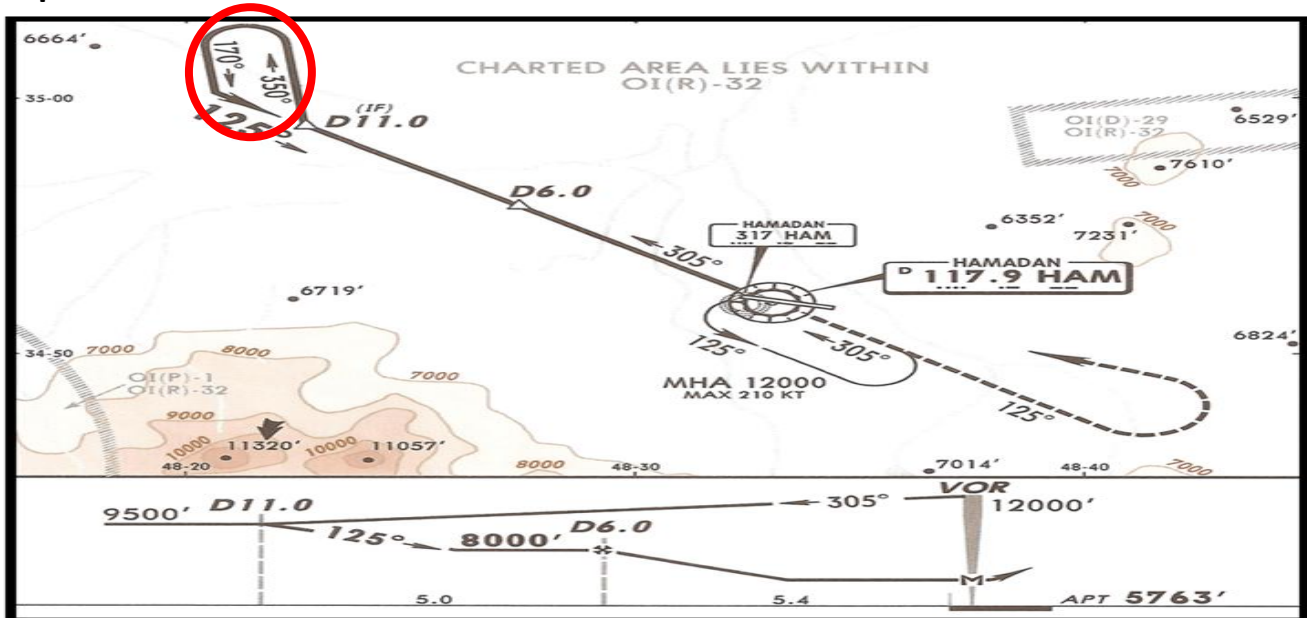
**NOTE :** the **primary reason** for use of Radar in ATC `` **separation** `` .

**PROCEDURE TURN :**

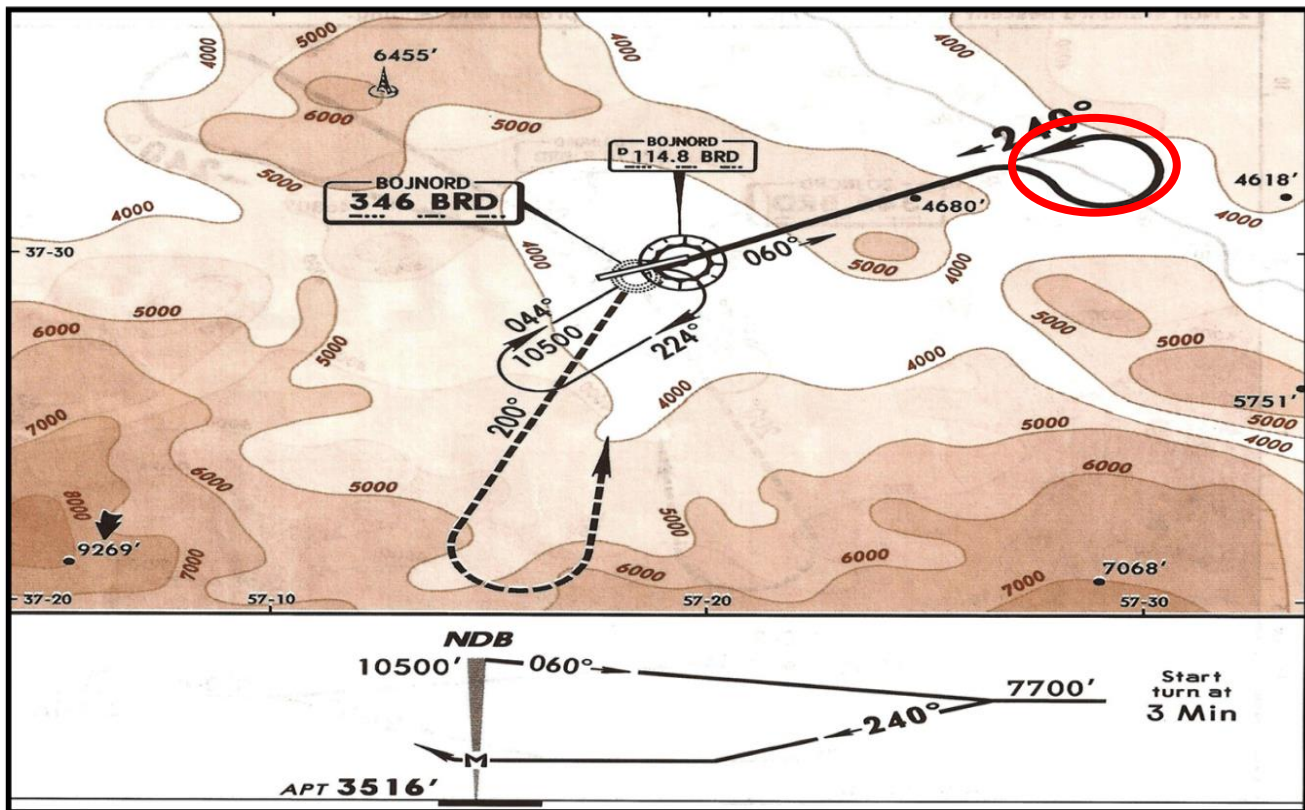
- A **maneuver** in which a **turn is made** away from a designated track **followed by a turn in the opposite direction** to permit the aircraft to intercept and proceed along the **reciprocal** of the designated track .

**NOTE 1 :** Procedure turns are designated "**left**" or "**right**" **according to the direction of the initial turn** .

**NOTE 2 :** Procedure turns may be designated as being made **either in level flight** or while **descending**, according to the circumstances of each individual procedure .



( Right procedure turn, 045°/180° )



( Right procedure turn, 080°/260° )

**SIGNIFICANT POINT :**

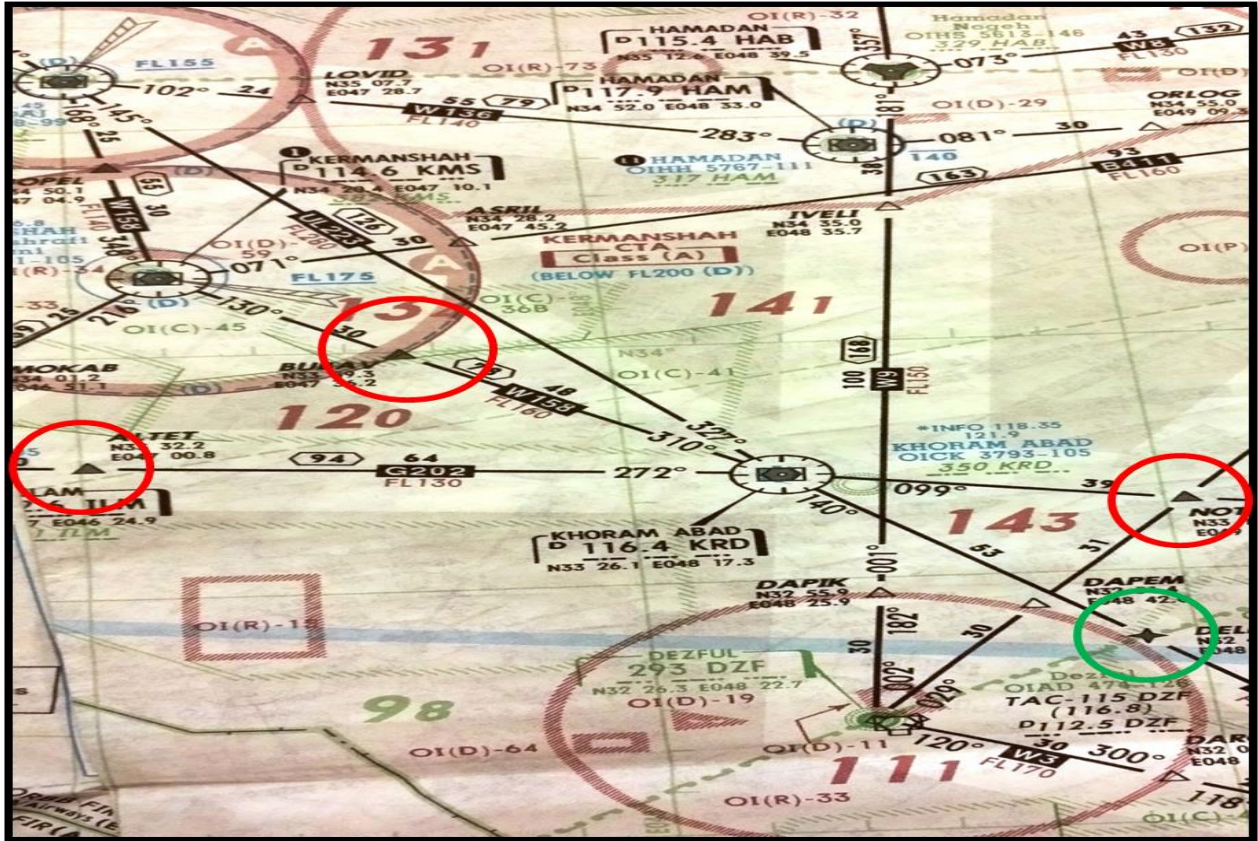
- A **specified geographical location** used in **defining an ATS route** or the **flight path of an aircraft** and for other navigation and **ATS purposes** .

**REPORTING POINT :**

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

**WAYPOINT (WPT) :**

- A specified geographical location used to define an area navigation route (**R-NAV**) or the flight path of an aircraft **employing area navigation**.

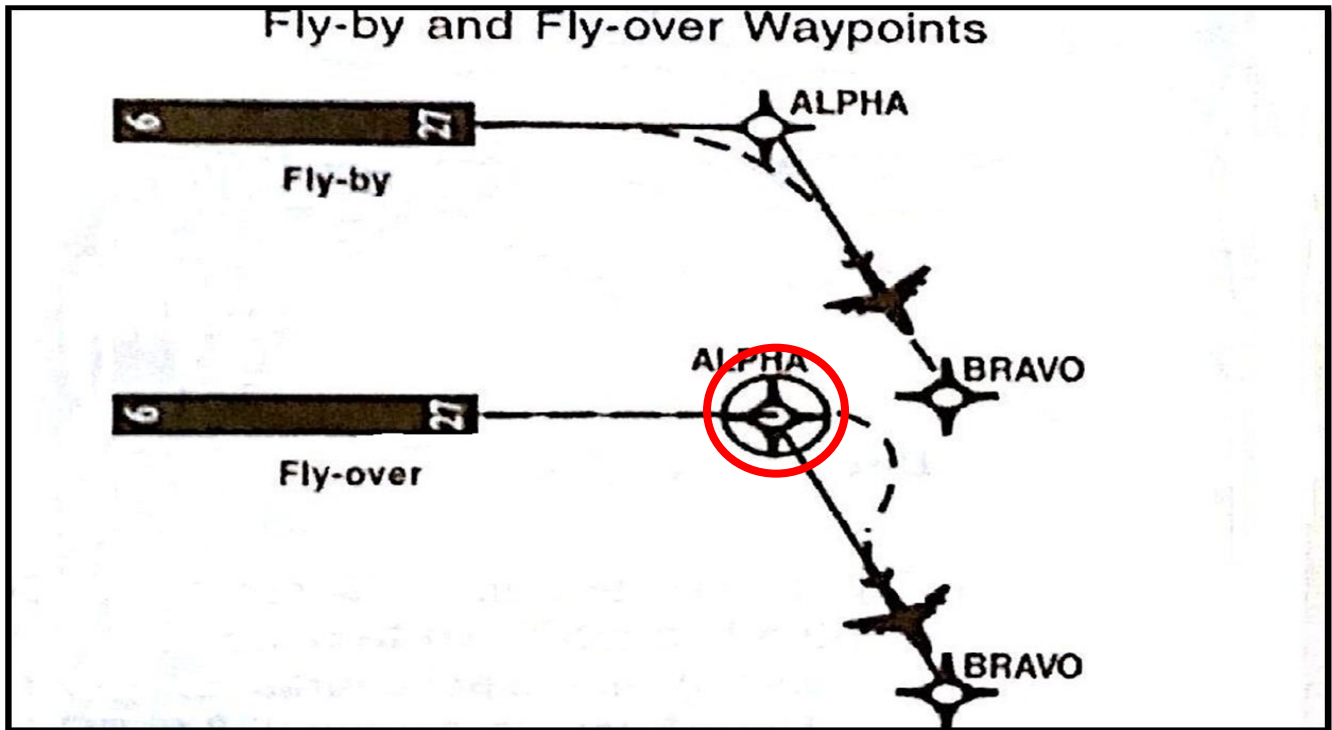


( Significant/Reporting and waypoint specified in ATS and R-NAV route )

Waypoints are defined as either :

- a) **Fly-by waypoint** : A waypoint which requires **turn anticipation** to allow **tangential interception** of the next segment of a route or procedure; or
- b) **Flyover waypoint** : A waypoint at which a **turn is initiated** in order **to join** the next segment of a route or procedure .

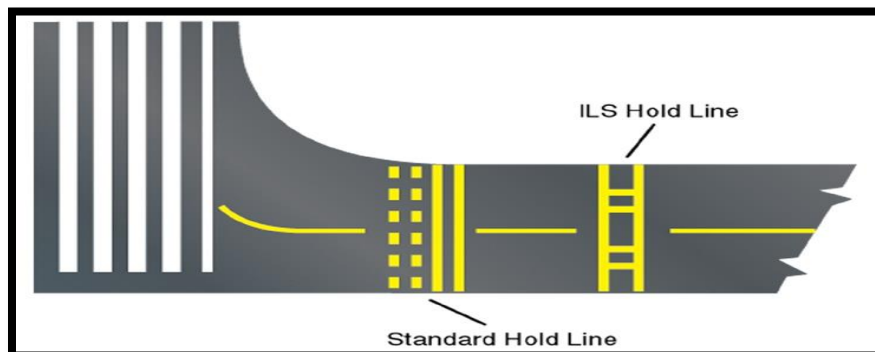




#### RUNWAY HOLDING POSITION :

- A **designated position** intended to :
  - a) to **protect a runway**;
  - b) an **obstacle limitation surface**; and
  - c) **ILS critical/ sensitive area**;
- at which taxiing aircraft and vehicles **shall stop and hold**, unless otherwise authorized by the **aerodrome control tower** .

**NOTE :** In radiotelephony **phraseology**, the expression **“holding point”** is used to designate the runway-holding position .



**THRESHOLD :**

- The **beginning** of that portion of the runway **usable for landing** .

**TOUCHDOWN :**

- The **point** where the nominal **glide path intercept** the **runway**

**TOUCHDOWN ZONE ELEVATION ( TDZE ) :**

- The highest elevation in the **first 3000 feet of the landing surface**.

**RUNWAY VISUAL RANGE (RVR) :**

- The **range** over which the **pilot** of an aircraft on the **center line** of a runway can **see** the runway surface **markings** or the **lights** delineating the runway or identifying its center line .

**SIGMET INFORMATION :**

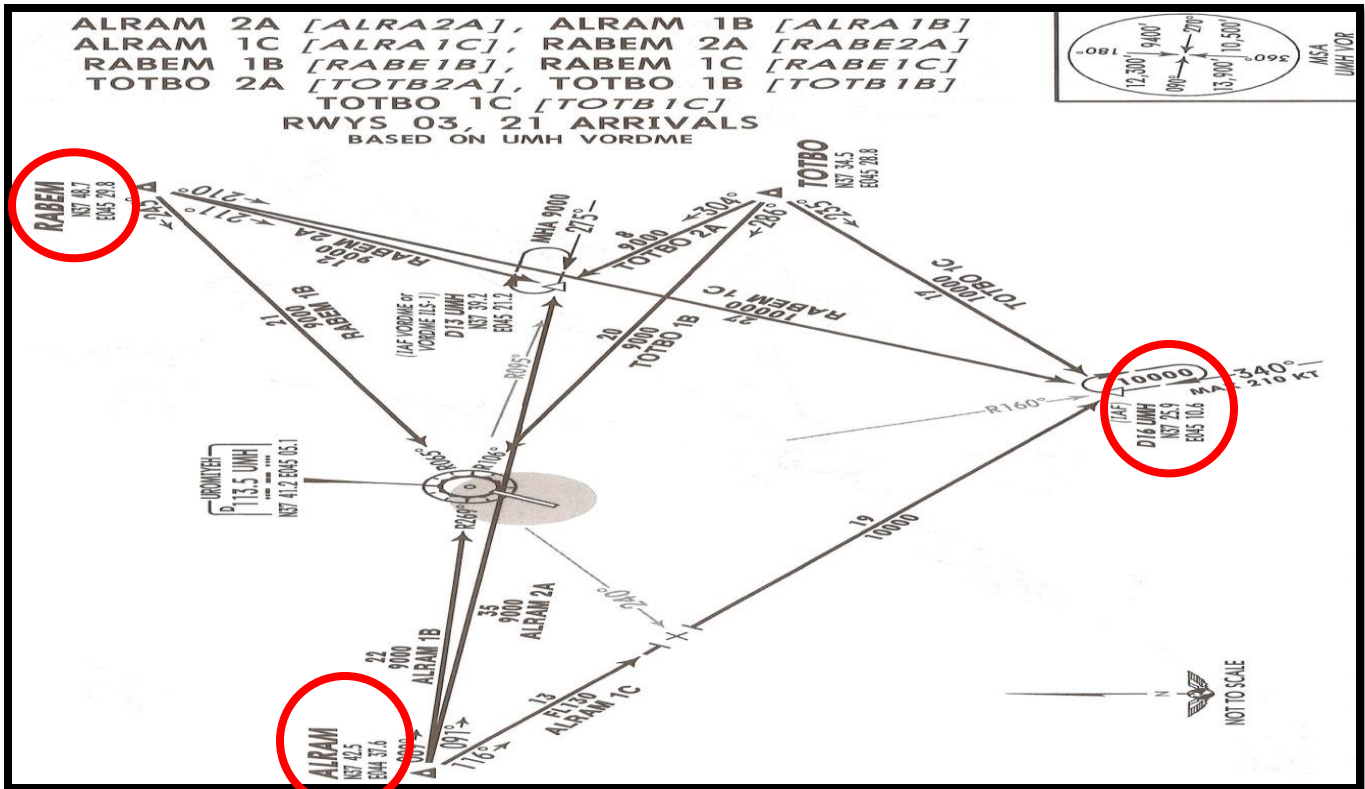
- Information issued by a **meteorological watch office** concerning the **occurrence** or **expected occurrence** of specified **en-route** weather **phenomena** which may affect the **safety of aircraft operation** .

**SNOW (ON THE GRUOND ) :**

- Dry snow**- Specific gravity : up to but not including **0.35**
- Wet snow**- Specific gravity : 0.35 up to but not including **0.5**
- Compacted snow**- Specific gravity : **0.5 and over**

**SLUSH :**

- **Water-saturated snow** which with a heel-and-toe slap-down motion against the ground will be displaced with a splatter; specific gravity : **0.5** up to **0.8**



( STARS linking the points RABEM, ALRAM and TOTBO to I.A.F in Uromiyeh )

**STOPWAY :**

- A defined **rectangular** area on the **ground** at the **end of take-off run available** prepared as a suitable area in which an aircraft can be **stopped** in the case of an abandoned (aborted) **take-off** .

**TAXIING :**

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

**TAXIWAY :**

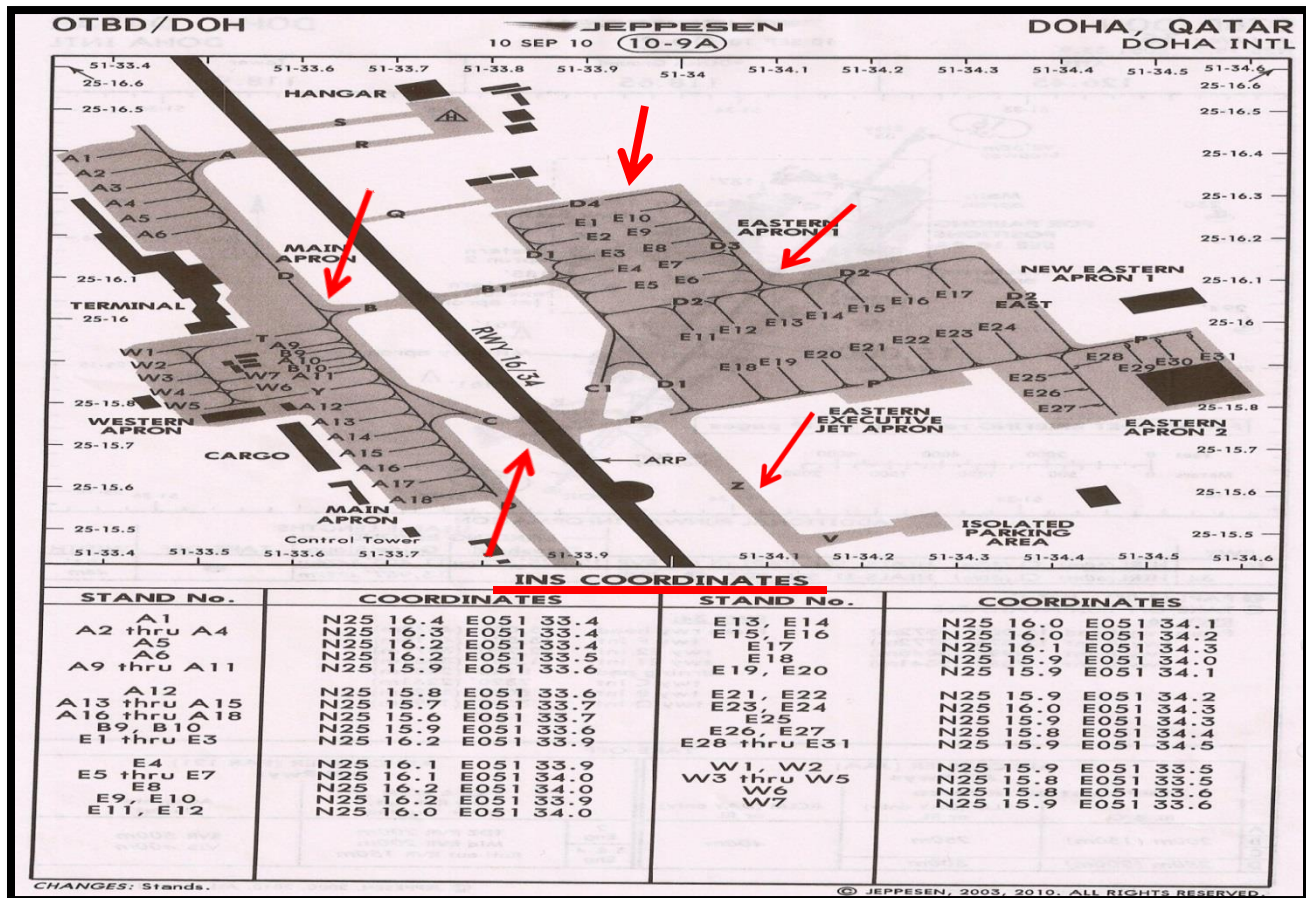
- A **defined path** on a land aerodrome established for the **taxiing** of aircraft and intended to **provide a link** between one part of the aerodrome and another .

**Taxiways include:**

- a) Aircraft stand taxi lane- A portion of an aerodrome designated as a taxiway and intended to **provide access to aircraft stand 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 speed (max 60 knots)** than are achieved on other exit taxiways thereby minimizing runway occupancy times .

**NOTE 1:** Acute angle means : **not greater than 45, nor less than 25 degrees**; the **desirable angle is 30 degrees** .

**NOTE 2:** **Taxi speeds** are typically from **5 to 20 knots (9 to 37km/h)**, **not exceeding brisk walk** .



( Taxi-ways layout in Doha, Qatar aerodrome with I.N.S coordinates )

**TERMINAL CONTROL AREA (TMA) :**

- A **control area** normally established at the **confluence of ATS routes** in the vicinity of **one or more major aerodromes** .

**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) .

**TRAFFIC AVOIDANCE ADVISE :**

- **Advise** provided **by** an air traffic service (**ATS**) unit **specifying maneuvers** to assist pilot **to avoid a collision** .

**TRAFFIC INFORMATION :**

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

**TRANSITION ALTITUDE :**

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

**TRANSITION LEVEL :**

- The **lowest flight level** available for use **above the transition altitude** .

**TRANSITION LAYER :**

- The airspace between the **transition altitude** and the **transition layer** .

**( END OF CHAPTER ONE – DEFENITIONS )**

## Chapter 2

### ( ATS SAFETY MANAGEMENT )

- **States** shall ensure that the **level** of air traffic services (**ATS**) and **communications, navigation and surveillance**, as well as the **ATS procedures** applicable to the airspace or aerodrome concerned, **are appropriate and adequate** for **maintaining** an acceptable **level of safety** in the provision of ATS.

## Chapter 3 :

### ( ATS SYSTEM CAPACITY AND AIR TRAFFIC FLOW MANAGEMENT )

# Chapter 4 :

## ( GENERAL PROVISIONS FOR AIR TRAFFIC SERVICES )

### RESPONSIBILITY FOR THE PROVISION OF AIR TRAFFIC CONTROL SERVICE:

- **Area control service** : Area control service shall be provided:
  - a) **by** an area control center (**ACC**); or
  - b) **by** the unit providing **approach control** service .
  
- **Approach control service** : Approach control service shall be provided:
  - a) **by** an aerodrome **control tower** or an **ACC**, or
  - b) **by** an **approach control unit** .
  
- **Aerodrome control service** : Aerodrome control service shall be provided **by** an **aerodrome control tower**.

### DIVISION OF RESPONSIBILITY FOR CONTROL BETWEEN AIR TRAFFIC CONTROL UNITS :

#### Arriving aircraft:

- Control of an arriving aircraft shall be transferred **from approach control unit to aerodrome control tower** when the aircraft:
  - a) is in the **vicinity of the aerodrome**, and
  - b) it is considered that **approach** and **landing** will be **completed in visual reference to the ground**, or
  - c) has reached **uninterrupted visual meteorological conditions**, or
  - d) **has landed**

## Departing aircraft :

- Control of a departing aircraft shall be transferred **from control tower to approach control** :

### A) when **VMC CONDITIONS** :

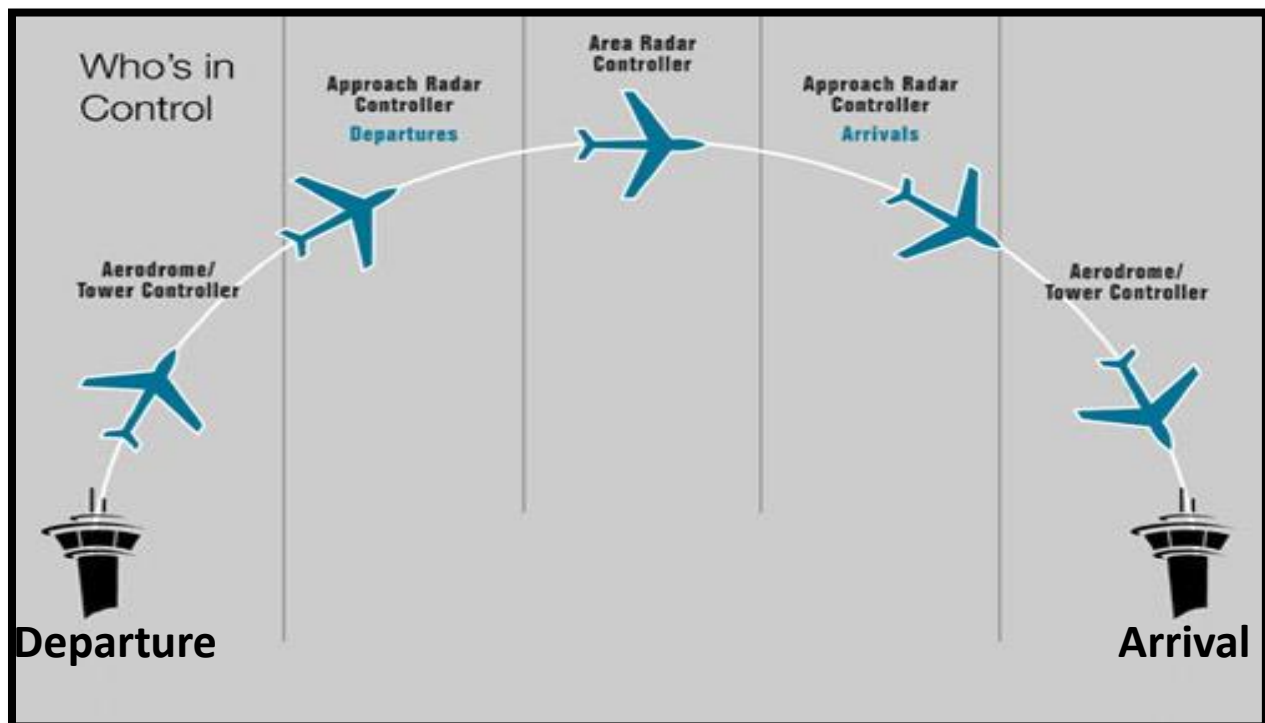
- 1) **prior to** the time the aircraft **leaves** the **vicinity** of the aerodrome,
- 2) **prior to** the time aircraft **entering instrument meteorological conditions**,

### B) when **IMC CONDITIONS** :

**immediately** after the aircraft is airborne ,

## Between approach control unit and area control center( ACC ):

- a unit providing **approach** control service shall be **responsible** for the control of:
  - a) **arriving** aircraft that have been **released** to it **by** the **ACC**;
  - b) **departing** aircraft **until** such aircraft are **released** to the **ACC**



( control of an aircraft from departure to arrival )



**FLIGHT PLAN :**

- A flight plan **form** should be **provided** and should be **used by operators and air traffic services units** for the purpose of completing flight plans.

**ICAO MODEL FLIGHT PLAN FORM**

FLIGHT PLAN PLAN DE VOL			
PRIORITY Priorité <<< <b>FF</b> >>>	ADDRESSEE(S) Destinataire(s)		
FILING TIME Heure de dépôt	ORIGINATOR Expéditeur		
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 <<<< <b>(FPL)</b> >>>>	7 AIRCRAFT IDENTIFICATION Identification de l'aéronef	8 FLIGHT RULES Règles de vol	TYPE OF FLIGHT Type de vol
9 NUMBER Nombre	TYPE OF AIRCRAFT Type d'aéronef	WAKE TURBULENCE CAT. Cat. de turbulence de sillage	10 EQUIPMENT Équipement
13 DEPARTURE AERODROME Aérodrome de départ		TIME Heure	
15 CRUISING SPEED Vitesse croisière	LEVEL Niveau	ROUTE Route	
16 DESTINATION AERODROME Aérodrome de destination		TOTAL EET Durées totale estimées HR. MIN	ALTN AERODROME Aérodrome de dégagement
18 OTHER INFORMATION Renseignements divers			
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 E / HR MIN	PERSONS ON BOARD Personnes à bord P /	EMERGENCY RADIO Radio de secours R / UHF VHF ELT	
SURVIVAL EQUIPMENT/Équipement de survie			
DINGHIES/Canots D /	POLAR Polaire S /	DESERT Désert D /	MARITIME Maritime M /
		JUNGLE Jungle J /	JACKETS/Gilets de sauvetage J /
		LIGHT Lampes L /	FLUORES Fluores F /
		UHF U /	VHF V /
		ELT E /	
NUMBER Nombre D /	CAPACITY Capacité C /	COVER Couverture C /	COLOUR Couleur
AIRCRAFT COLOUR AND MARKINGS Couleur et marques de l'aéronef			
A /			
REMARKS Remarques			
N /			
PILOT-IN-COMMAND Pilote commandant de bord			
C /			
FILED BY/Déposé par		SPACE RESERVED FOR ADDITIONAL REQUIREMENTS Espace réservé à des fins supplémentaires	

**NOTE : A different form** may be provided for use in completing **repetitive flight plan listings**.

REPETITIVE FLIGHT PLAN LISTING																						
A OPERATOR BRITISH AIRWAYS				B ADDRESSEE(S) UK STORED FLIGHT PLAN OFFICE EGTXXBZX Chef de la Subdivision informatique 9 rue de Champagne 91205 Athismons France						C DEPARTURE AERODROME(S) EGLL			D DATE 800305 ----- yymmdd	E SERIAL NO. 80 - 12 -- --	F PAGE OF 3 / 3 - / -	G SUPPLEMENTARY DATA (Item 19) AT: BAW Briefing Office						
H + -	I VALID FROM yymmdd	J VALID UNTIL yymmdd	K DAYS OF OPERATION							L AIRCRAFT IDENTIFICATION (Item 7)	M TYPE OF AIRCRAFT AND WAKE TURBULENCE CATEGORY (Item 9)			N DEPARTURE AERODROME AND TIME (Item 13)		O ROUTE (Item 15)  CRUISING ROUTE				P DESTINATION AERODROME AND TOTAL ESTIMATED ELAPSED TIME (Item 16)		Q REMARKS
			1	2	3	4	5	6	7		LEVEL	SPEED	ROUTE									
+	800401	811031	1	2	3	4	5	6	7	BAW004	HS21	M	EGLL	0700	N0440	F210	A1E UA1E DPE UA16 MAN	LFPG	0045			
+	800401	800731	1	2	3	4	5	6	7	BAW032	HS21	M	EGLL	1800	N0440	F210	A1E UA1E DPE UA16 MAN	LFPG	0045			
+	800801	811031	1	0	3	0	5	0	7	BAW032	HS21	M	EGLL	1800	N0440	F210	A1E UA1E DPE UA16 MAN	LFPG	0045			
+	800601	800930	0	0	0	0	0	0	7	BAW082	HS21	M	EGLL	1805	N0450	F270	A1S UA1S RBT UA3 MTL					
																	UA3W STP DCT GL	LFMN	0130			
-	800103	800930	0	0	0	0	0	6	7	BAW092	B737	M	EGLL	1810	N0430	F190	A1E UA1E DPE UA16 MAN	LFPG	0400	CHARTERED ACFT		
+	800103	800315	0	0	0	0	0	6	7	BAW092	B737	M	EGLL	1810	N0430	F190	A1E UA1E DPE UA16 MAN	LFPG	0400	CHARTERED ACFT		

➤ The flight plan form should be **printed** and should include an **English text** in addition to the **language(s) of the State** concerned.

An operator shall, prior to departure:

a) ensure that, where the flight is intended to operate on a **route** or in an area where an **RNP type** is prescribed, the aircraft has an **appropriate RNP approval**, and that all conditions applying to that approval will be satisfied;

b) ensure that, where **operation in** reduced vertical separation minimum (**RVSM**) **airspace** is planned, the aircraft has the required **RVSM approval**.

## Submission of a flight plan :

### A) PRIOR TO DEPARTURE :

- Flight plan shall **not** be **submitted more than 120 hours** before the **EOBT** .
- **Except** when **RPL**, a flight plan submitted prior to departure should be **submitted to** the air traffic services reporting office ( **ARO** ) at the **departure aerodrome**.
- **If no** such unit exists at the departure aerodrome, the flight plan should be **submitted** to the **unit** serving or designated to **serve the departure aerodrome**.
- In the event of **a delay of 30 minutes in excess of** the estimated off-block time ( **EOBT** ) for a **controlled flight** or a delay of **one hour** for an **uncontrolled flight** for which a flight plan has been submitted, the flight plan should be **amended or a new flight plan** submitted and the old flight plan cancelled, whichever is applicable.

## Instructions for the completion of the flight plan form-

- **Adhere closely** to the prescribed formats and manner of **specifying data**.
- Commence **inserting data** in the **first space** provided. Where excess space is available, leave unused spaces blank.
- Insert all **clock times** in **4 figures UTC**.
- Insert all **estimated elapsed times** in **4 figures (hours and minutes)**.
- Shaded area **preceding Item 3** — to be completed **by ATS and COM services**, unless the responsibility for originating flight plan messages has been delegated.

**NOTE** : Item **numbers** on the form are **not consecutive**, as they correspond to Field Type numbers in ATS messages.

## Instructions for insertion of ATS data :

**ITEM 7: AIRCRAFT IDENTIFICATION USED AS CALL SIGN (MAXIMUM 7 CHARACTERS) -**

- a) **registration marking** of the aircraft (e.g. EIAKO )
- b) the **ICAO designator** for the **aircraft operating agency** followed by the **flight identification** (e.g. KLM511 )

**NOTE** : When the aircraft is **not equipped with radio**, use **registration marking** as call sign .

**ITEM 8 : FLIGHT RULES AND TYPE OF FLIGHT (ONE OR TWO CHARACTERS) -**

**Flight rules** :    I if IFR/      V if VFR/      Y if IFR first/      Z if VFR first

**NOTE** : specify in **Item 15** the point or **points** where a **change of flight rules** is planned.

- Change **from IFR flight to VFR flight** is only acceptable when a message **initiated by the pilot-in-command** containing the specific expression **“CANCELLING MY IFR FLIGHT”**, together with the changes, if any, to be made to the current flight plan.
- No reply, other than the acknowledgment **“IFR FLIGHT CANCELLED AT ... (time)”**, should normally be made **by an air traffic services unit**.

**Type of flight** :            **S** if scheduled air service/      **N** if non-scheduled air transport operation /      **G** if general aviation /      **M** if military /      **X** if other than any of the defined categories above.

**ITEM 9: NUMBER AND TYPE OF AIRCRAFT AND WAKE TURBULENCE CATEGORY -**

**Number of aircraft (1 or 2 characters)** : INSERT the number of aircraft, **if more than one**.

## Type of aircraft (2 to 4 characters) :

- INSERT the appropriate designator **as specified by ICAO** OR,
- **if no** such designator has been assigned, **or** in case of **formation flights** comprising **more than one type**, INSERT **ZZZZ**, and SPECIFY in **Item 18**, the **numbers** and **type(s)** of aircraft preceded by **TYP/**

## Wake turbulence category (1 character) :

- **H** — HEAVY, to indicate an aircraft type with a maximum certificated take-off mass of **136, 000 kg or more**;
- **M** — MEDIUM, to indicate an aircraft type with a maximum certificated take-off mass of **less than 136, 000 kg but more than 7 000 kg**;
- **L** — LIGHT, to indicate an aircraft type with a maximum certificated take-off mass of **7, 000 kg or less**.

**NOTE 1** : For aircraft in the heavy wake turbulence category the **word “Heavy”** shall be **included** immediately **after** the aircraft **call sign** in the **initial radiotelephony contact** between such aircraft and **ATS units** .

**NOTE 2** : Wake turbulence begins when, The nose wheel **lift off** the runway, and, **ends**, when The nose wheel **touches down** the runway .

## ITEM 10: EQUIPMENT -

### Radio communication, navigation and approach aid equipment :

- INSERT one letter as follows:
- **N** if **no COM/NAV/approach aid** equipment for the route to be flown is carried, **or** the equipment is **unserviceable**, or
- **S** if **standard COM/NAV/approach aid** equipment for the route to be flown is carried and serviceable

**NOTE** : **Standard equipment** is considered to be **VHF RTF, ADF, VOR** and **ILS**, unless another combination is prescribed by the appropriate ATS authority.

- INSERT one or more of the following letters to indicate the **COM/NAV/ approach aid** equipment available and serviceable:

A, (Not allocated) / B, (Not allocated) / C, LORAN C / D, DME /  
E, (Not allocated) / F, ADF / G, (GNSS) / H, HF RTF / I, Inertial Navigation /  
J (Data Link) / K (MLS) / L ILS / M Omega / O VOR / P (Not allocated) /  
Q (Not allocated) / R RNP type certification / T TACAN / U UHF RTF /  
V VHF RTF / W,X,Y (when prescribed by ATS) / Z Other equipment /

**NOTE 1:** If the letter **Z** is used, **specify in Item 18** the other equipment carried, preceded by COM/ and/or NAV/ , as appropriate.

**NOTE 2:** **Information** on navigation capability is provided **to ATC** for **clearance** and **routing purposes**.

**NOTE 3:** Inclusion of letter **R** indicates that an aircraft **meets the RNP type** prescribed for the route segment(s), route(s) and/or area concerned.

**Surveillance equipment :** INSERT one or two of the following letters to describe the serviceable surveillance equipment carried:

SSR equipment :

**N** Nil / **A** Transponder — Mode A (4 digits — 4 096 codes) / **C** Transponder — Mode A (4 digits — 4 096 codes) and Mode C / **X** Transponder — Mode S without both aircraft identification and pressure-altitude transmission/

**P** Transponder — Mode S, including pressure-altitude transmission, but no aircraft identification transmission / **I** Transponder — Mode S, including aircraft identification transmission, but no pressure-altitude transmission /

**S** Transponder — Mode S, including both pressure altitude and aircraft identification transmission/

**ITEM 13: DEPARTURE AERODROME AND TIME (8 CHARACTERS) –**

- INSERT the **ICAO four-letter location indicator** of the departure aerodrome OR ;
- **if no** location indicator has been assigned, **INSERT ZZZZ** and **SPECIFY, in Item 18**, the name of the aerodrome preceded by DEP/

- **THEN**, WITHOUT A SPACE, **INSERT** for a flight plan submitted before departure, the estimated off-block time( **EOBT** ).

**Slot** : The period of **validity between, before, and, after** calculated take-off time ( **C.T.O.T** ), and this period is for **15 minutes** .

For example, if your EOBT is at **14:00** UTC, the **earliest** time of takeoff (brake release at the start of the takeoff run) is **13:55** and **latest 14:10** .

## ITEM 15: ROUTE –

- INSERT the **first** cruising **speed** as in (a) and the **first** cruising **level** as in (b), without a space between them, **THEN**;

following the arrow, INSERT the **route description** as in (c).

**a) Cruising speed (maximum 5 characters)** : INSERT the **True Air Speed** for the first or the whole cruising portion of the flight, in terms of:

- **Kilometers** per hour, expressed as **K** followed by **4 figures** (e.g. **K0830**),
- **Knots**, expressed as **N** followed by 4 figures (e.g. **N0485**), or
- **Mach number**, to the nearest hundredth of unit Mach, expressed as **M** followed by **3 figures** (e.g. **M082**).

**(b) Cruising level (maximum 5 characters)**: INSERT the **planned cruising level** for the **first** or the **whole portion** of the route, in terms of:

- **Flight level**, expressed as **F** followed by **3 figures** (e.g. **F085; F330**), or
- **Standard Metric Level** in tens of meters, expressed as **S** followed by **4 figures** (e.g. **S1130**), or
- **Altitude** in hundreds of **feet**, expressed as **A** followed by **3 figures** (e.g. **A045; A100**), or
- **Altitude** in tens of **meters**, expressed as **M** followed by **4 figures** (e.g. **M0840**), or
- for **uncontrolled VFR** flights, the letters **VFR**.

**(c) Route (including changes of speed , level or flight rules) :**

Flights along designated ATS routes : INSERT,

- **if** the departure aerodrome is **located on** or **connected** to the **ATS route**, the **designator** of the first ATS route ,**OR** ;
- **if** the departure aerodrome is **not on** or **connected** to the **ATS route**, the letters **DCT** followed by the **point of joining** the **first ATS route**, followed by the **designator** of the **ATS route** , **THEN**;
- INSERT **each point** at which either a **change** of **speed** or **level**, a change of **ATS route**, and/or a change of **flight rules** is planned,

**FOLLOWED IN EACH CASE :**

- by the **designator** of the **next ATS route segment**, even if the same as the previous one, **OR** ;
- by **DCT**, **if** the flight to the next point will be **outside a designated route**, unless both points are defined by geographical coordinates.

**ITEM 16: DESTINATION AERODROME AND TOTAL ESTIMATED ELAPSED TIME, DESTINATION ALTERNATE AERODROME(S) -**

**Destination aerodrome and total estimated elapsed time (8 characters) :**

- INSERT the **ICAO four-letter location indicator** of the destination aerodrome **followed**, without a space, **by the total estimated elapsed time** , **OR** ;
- **if no** location indicator has been assigned, **INSERT ZZZZ** followed, without a space, by the total estimated elapsed time, and **SPECIFY in Item 18** the **name of the aerodrome**, preceded by **DEST/** .

**NOTE :** For a flight plan **received** from an aircraft **in flight**, the total estimated elapsed time is the estimated **time from the first point of the route to which the flight plan applies**.



### Destination Alternate aerodrome(s) (4 characters) :

- INSERT the **ICAO four-letter location indicator(s)** of **not more than two alternate** aerodromes, separated by a space ,**OR** ;
- **if no** location indicator has been assigned to the alternate aerodrome, **INSERT ZZZZ** and **SPECIFY** in **Item 18** the **name of the aerodrome**, preceded by **ALTN/** .

**NOTE** : **At least one destination alternate aerodrome** should be inserted in flight plan .

### ITEM 18: OTHER INFORMATION -

- INSERT **0** (zero) **if no other information, OR** ;
- any other **necessary information** in the preferred sequence shown hereunder, in the form of the appropriate indicator **followed by an oblique stroke** and the information to be recorded:
- **EET/** Significant points or **FIR boundary** designators
- **REG/** The registration markings of the aircraft, **if different from** the aircraft identification in **Item 7**.
- **OPR/** Name of the **operator, if not obvious from** the aircraft identification in **Item 7**.
- **FFR/** fire-fighting
- **HOSP/** for a **medical flight**
- **DEST/** Name of **destination** aerodrome, **if ZZZZ** is inserted in **Item 16**.
- **RMK/** **Any other** plain language **remarks** when required By the appropriate ATS authority or **deemed necessary**.

### ITEM 19: SUPPLEMENTARY INFORMATION -

#### Endurance :

- After E/ INSERT a **4-figure group** giving the fuel endurance in **hours** and **minutes**.

## Persons on board :

- After P/ INSERT the **total number** of persons (**passengers** and **crew**) on board, when required by the appropriate ATS authority.
- INSERT **TBN** (to be notified) **if** the total number of persons is **not known at the time of filing**.

**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.

## Emergency and survival equipment -

### R/ (RADIO) :

- **CROSS OUT U** if **UHF** on frequency **243.0 MHz** is **not available**. **CROSS OUT V** if **VHF** on frequency **121.5 MHz** is **not available**. **CROSS OUT E** if emergency locator transmitter (**ELT**) is **not available**.

### S/ (SURVIVAL EQUIPMENT) :

- **CROSS OUT all indicators** if survival equipment is **not carried**.
- **CROSS OUT P** if **polar equipment** is not carried.
- **CROSS OUT D** if **desert survival equipment** is **not carried**.
- **CROSS OUT M** if **maritime survival equipment** is **not carried**.
- **CROSS OUT J** if **jungle survival equipment** is **not carried**.

### J/ (JACKETS) :

- **CROSS OUT all indicators** if life jackets are **not carried**.
- **CROSS OUT L** if life jackets are **not equipped with lights**.
- **CROSS OUT F** if life jackets are not equipped with **fluorescein**.
- **CROSS OUT U** or **V** or **both** as in R/above **to indicate radio** capability of jackets, if any.

**D/ (DINGHIES) -**

**(NUMBER) :**

- **CROSS OUT** indicators **D** and **C** if **no dinghies** are carried, or **INSERT number of dinghies** carried; and

**(CAPACITY) :**

- **INSERT total capacity, in persons**, of all dinghies carried; and

**(COVER) :**

- **CROSS OUT** indicator **C** if dinghies are **not covered**; and

**(COLOUR) :**

- **INSERT color** of dinghies if carried.

**A/ (AIRCRAFT COLOUR AND MARKINGS) :**

- **INSERT color of aircraft** and **significant markings**.

**N/ (REMARKS) :**

- **CROSS OUT** indicator **N** if **no remarks**, or **INDICATE** any **other survival equipment** carried and any other **remarks** regarding **survival equipment**.

**NOTE :** **When** any type of emergency and **survival equipment** is **not available**, we must **cross out** the relevant **Item** in **FPL** .

**C/ (PILOT) :**

- **INSERT name of pilot-in-command**.

## Filed by :

- **INSERT** the name of the **unit, agency** or **person filing the flight plan**.

## AIR TRAFFIC CONTROL CLEARANCES :

- Clearances are issued solely for **expediting, separating** and **an orderly flow** of air traffic and are based on **known traffic** conditions .
- Such traffic conditions include **not only aircraft in the air** and on the **manoeuvring area, but also** any **vehicular traffic** or other **obstructions not permanently** installed on the **manoeuvring area** in use.
- **If** an air traffic control clearance is **not suitable to the pilot-in-command** of an aircraft, the flight crew may **request** and, if practicable, obtain **an amended clearance**.
- **When** a flight plan specifies that the **first portion of a flight** will be **subject to ATC**, and that the **subsequent portion** will be **uncontrolled**, the **aircraft** shall normally **be cleared to the point** at which the **controlled flight terminates**.

**Note :** Clearances **do not relieve pilots** from compliance with the rules.

## Flights through intermediate stops :

- When an aircraft files, at the departure aerodrome, **flight plans for the flight through intermediate stops**, the **initial clearance limit will be the first destination** aerodrome and new clearances shall be issued for each subsequent portion of flight.
- The flight plan for the **second stage**, and **each subsequent stage**, of a flight through intermediate stops will **become active only when** the appropriate ATS unit has received notification that **the aircraft has departed** from the **relevant departure aerodrome** .

➤ **Standard clearances for departing aircraft shall contain the following items:**

- a) aircraft identification;**
- b) clearance limit, normally destination aerodrome;**
- c) designator of the assigned SID, if applicable;**
- d) initial level, except when this element is included in the SID description;**
- e) allocated SSR code;**
- f) any other necessary instructions or information .**

**Clearance for En-route aircraft :**

- The phrase **“cleared via flight planned route”** may be used to **describe any route** provided the route is identical to that **filed in the flight plan** and sufficient **routing details** are given to definitely **establish the aircraft on its route.**
- The phrases **“cleared via (designation) departure”** or **“cleared via (designation) arrival”** may be used when **standard departure or arrival routes** have been **established** by the appropriate ATS authority and **published in** Aeronautical Information Publications (**AIPs**).
- A **clearance limit** shall be described **by** specifying the name of the appropriate **significant point, or aerodrome, or controlled airspace boundary.** ( clearance limit, is normally **destination aerodrome** ).

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- A **clearance limit** shall be described **by** specifying the name of the appropriate **significant point**, or **aerodrome**, or **controlled airspace boundary**. ( clearance limit, is normally **destination aerodrome** ).
- When traffic conditions will **not permit clearance of a requested change**, the word “**UNABLE**” shall be used. When warranted by circumstances, an alternative route or level should be offered.

#### READ-BACK OF CLEARANCES :

- The flight crew **shall read back** to the air traffic controller **safety-related parts** of ATC clearances and instructions which are transmitted by voice.

#### **The following items shall always be read back:**

**a)** ATC route clearances; **b)** clearances and instructions to enter, land on, take off from, hold short of, cross taxi and backtrack on any runway; **c)** runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions and, whether issued by the controller or contained in ATIS broadcasts, transition levels.

**NOTE :** If the **level** of an aircraft **is reported in relation to** standard pressure, **1013.2 hPa**, the words “**FLIGHT LEVEL**” precede the **level figures**. If the **level** of the aircraft **is reported in relation to QNH/QFE**, the **figures are followed by** the word “**METRES**” or “**FEET**”, as appropriate.

- **Other clearances or instructions**, including **conditional clearances**, shall be read back or **acknowledged** in a manner to **clearly** indicate that they have been understood and will be complied with.
- The controller **shall listen** to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and **shall take immediate action to correct** any discrepancies revealed by the read-back.

#### **HORIZONTAL SPEED CONTROL INSTRUCTIONS :**

- In order to facilitate a **safe and orderly flow of traffic**, aircraft may be instructed to **adjust speed** in a specified manner and **Flight crews** should be **given adequate notice** of planned speed control.
- Speed control **shall not be applied** to aircraft **entering** or **established** in a **holding pattern**.
- Speed adjustments should be **limited to** those necessary to establish and/or **maintain a desired separation minimum or spacing**.
- The flight crew **shall inform the ATC unit** concerned **if** at any time they are **unable to comply** with a speed instruction.
- Aircraft **shall be advised** when a **speed control restriction** is **no longer required**.

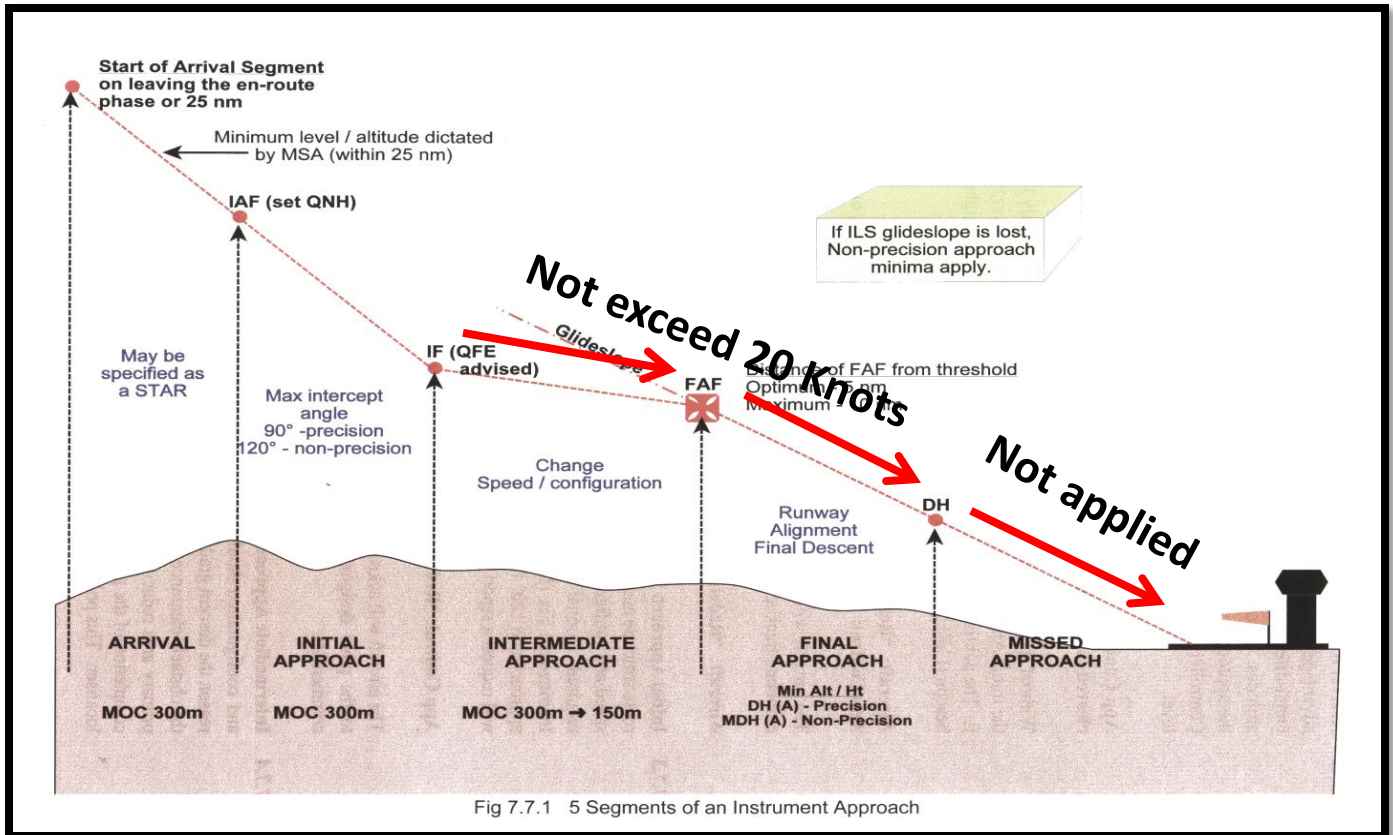
#### **Descending and arriving aircraft :**

- An **aircraft should**, when practicable, **be authorized to absorb** a period of notified **terminal delay by** cruising at a **reduced speed** for the **last portion of its flight**.
- An arriving aircraft may be instructed to maintain its **“maximum speed”**, **“minimum clean speed”**, **“minimum speed”**, or a **specified speed**.

**NOTE :** **“Minimum clean speed”** signifies the minimum speed at which an **aircraft can be flown in a clean configuration**, i.e. **without deployment of lift-augmentation devices, speed brakes or landing gear**.

- Speed reductions to **less than 460 km/h (250 knots) IAS for turbojet aircraft** during initial descent from cruising level should be **applied only** with the **concurrence of the flight crew**.
- **Below 4, 550 m (FL 150)**, speed reductions for turbojet aircraft **to not less than 410 km/h (220 knots) IAS, may be used**.

- Only **minor speed reductions not exceeding plus/minus 40 km/h (20 knots)** IAS should be used for aircraft on **intermediate and final approach**.
- Speed control **should not be applied** to aircraft **after passing a point 7 km (4 NM)** from the **threshold** on final approach.



## ALTIMETER SETTING PROCEDURES :

### Expression of vertical position of aircraft :

- For flights in the vicinity of aerodromes and within terminal control areas the **vertical position** of aircraft shall be expressed in terms of **altitudes at or below the transition altitude** and in terms of **flight levels at or above the transition level**.
- While **passing** through the **transition layer**, vertical position shall be expressed in terms of **flight levels when climbing** and in terms of **altitudes when descending**.

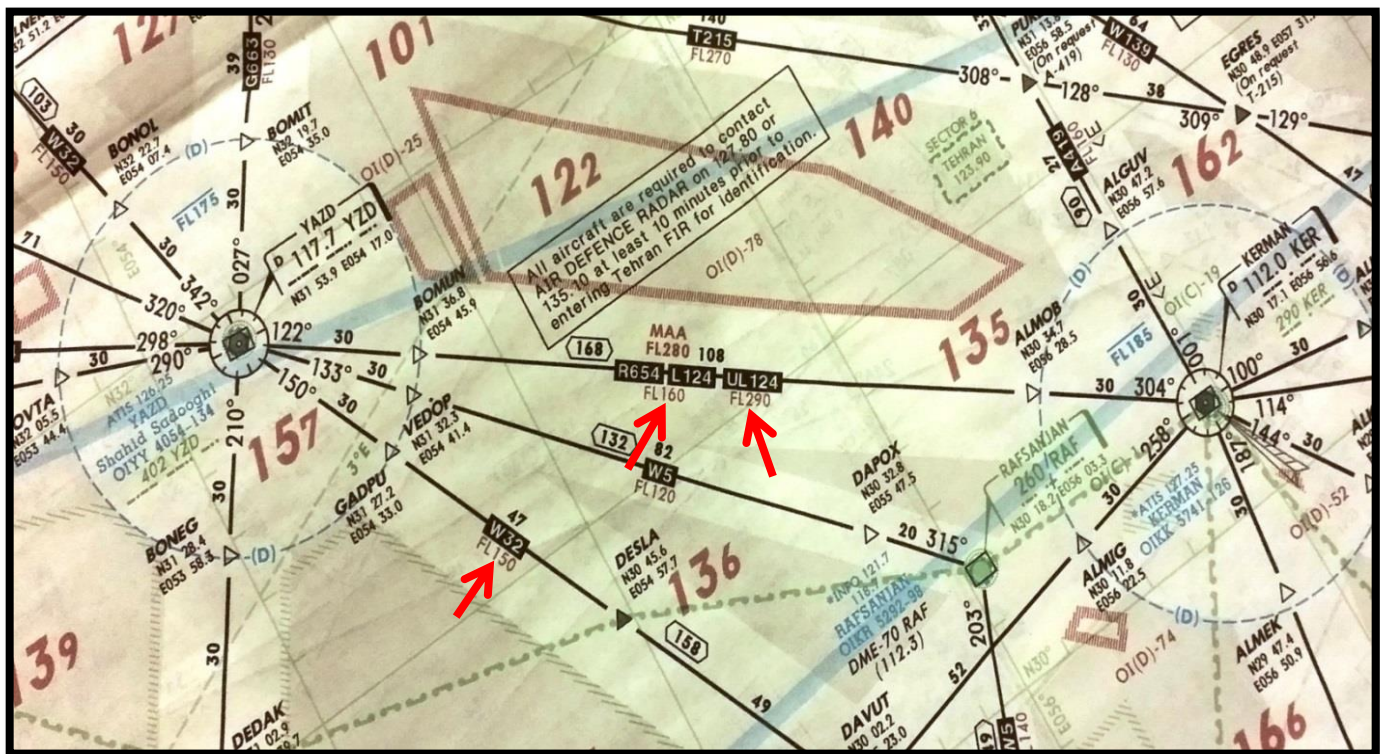


## Determination of the transition level :

- The appropriate **ATS unit shall establish the transition level** to be used in the **vicinity of the aerodrome(s)** concerned and, the terminal control area (**TMA**) concerned, for the appropriate period of time **on the basis of QNH reports** .
  
- When **an aircraft using** atmospheric pressure at aerodrome elevation (**QFE**), the **vertical position** of the aircraft shall be expressed in **terms of height above aerodrome**, except that it shall be expressed **in terms of height above runway threshold** elevation:
  - a) for instrument runways, **if the threshold is 2 meters(7 feet)** or more **below the aerodrome elevation**, and
  
  - b) for **precision approach** runways.
  
- For **flights en route** the **vertical position** of aircraft shall be expressed in **terms of**:
  - a) **flight levels at or above the lowest usable flight level**;
  
  - b) **altitudes below the lowest usable flight level**;
  
- The **transition level** shall be the **lowest flight level available** for use **above the transition altitude** established for the aerodrome(s) concerned .

## Minimum cruising level for IFR flights :

- Except when specifically authorized by the appropriate authority, **cruising levels below the minimum flight altitudes established by the State, shall not be assigned** .
  
- Unless otherwise prescribed by the State concerned, **the lowest usable flight level is** that flight level which corresponds to, or is immediately above, **the established minimum flight altitude** .



( IFR flight shall not fly at cruising level, less than specified by the state )

- Unless otherwise prescribed by the State concerned, **the lowest usable flight level is** that flight level which corresponds to, or is immediately above, **the established minimum flight altitude.**
- **The objectives of the air traffic control service do not include prevention of collision with terrain.**
- **The procedures prescribed do not therefore relieve the pilots of their responsibility to ensure that any clearance issued by air traffic control units is safe, except, when an IFR flight is vectored by radar.**

### Provision of altimeter setting information :

- The flight crew shall be **provided with the transition level in due time prior to reaching it during descent .**
- This may be **accomplished by voice communications, ATIS broadcast data link, included in approach clearances or requested by the pilot .**

- A **QNH** altimeter setting shall be **included in the descent clearance**, in **approach clearances** or clearances **to enter the traffic circuit**, and in **taxi clearances for departing aircraft**, except when it is known that the aircraft has already received the information .

#### POSITION REPORTING :

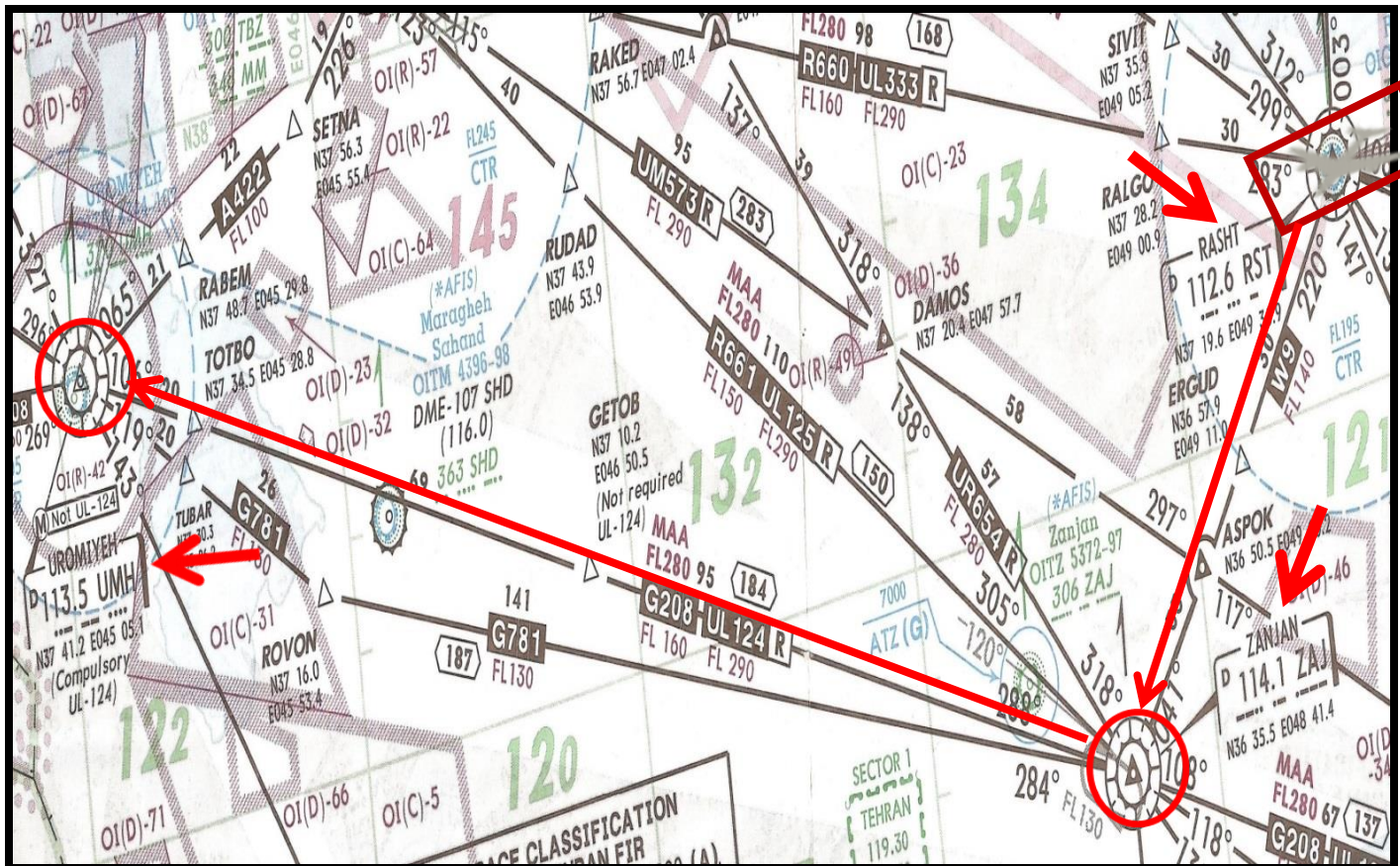
- On routes defined by **designated significant points**, position reports **shall be made** by the aircraft **when over**, or **as soon as possible after passing**, each **designated compulsory reporting point** .
- the **operational normal** shall be made **20 to 40 minutes after the last contact** .
- On routes **not defined** by designated **significant points**, position reports shall be made by the aircraft as soon as possible **after the first half hour of flight** and **at hourly intervals thereafter** .
- flights may be **exempted from** the requirement to make **position reports** at each designated compulsory reporting point or interval, **when** :
  - a) Notified by ATC `` **Radar contact** `` which means **seen** and **identified**, or
  - b) `` **Next report** `` is assigned **by ATC unit**, and
  - c) Advised by ATC `` **omit position report until** `` ..... `` .

#### Contents of voice position reports :

- 1) aircraft identification ;
- 2) position ;
- 3) time ;
- 4) flight level or altitude, including passing level and cleared level
- 5) next position and time over
- 6) ensuing significant point.

**NOTE :** When assigned a speed to maintain, the flight crew shall include this speed in their position reports.

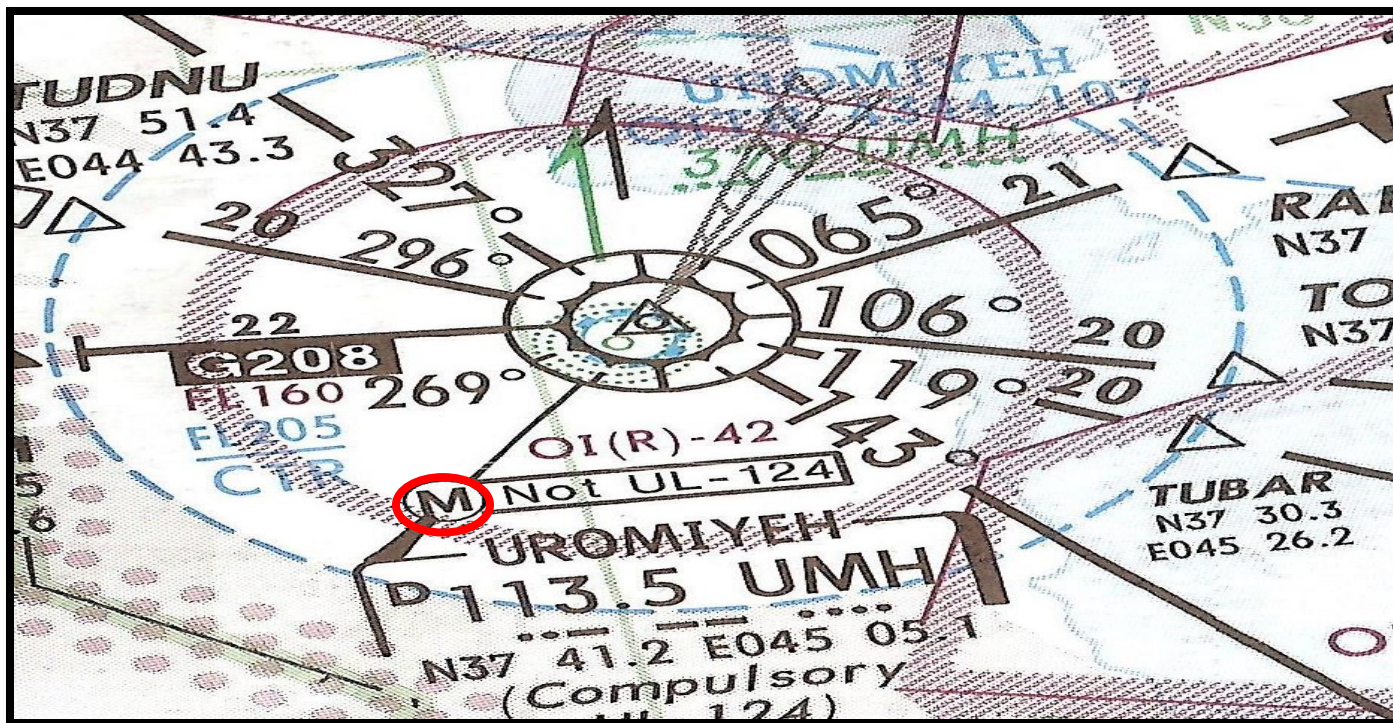
Example of position report of an aircraft over Rasht at time 19:23 maintaining FL 280 routing to Zanjan( ETA, 19:34 ) then Uromiyeh :



“ TEHRAN CONTROL, AIR FORCE 8960, POSITION ROMEO SEIRA TANGO, AT TIME 19:23, FLIGHT LEVEL TWO EIGHT ZERO, NEXT POSITION ZULU ALFA JULEIT AT TIME 19:34, UNIFORM MIKE HOTEL NEXT ”

**REPORTING OF METEOROLOGICAL INFORMATION :**

- 1) air temperature
- 2) wind direction
- 3) wind speed
- 4) turbulence
- 5) aircraft icing
- 6) humidity



(`M` Represents meteorological reporting station )

### Contents of special air-reports :

- Special air-reports **shall be made by all aircraft** whenever the following conditions are **encountered** or **observed**:

- a) severe turbulence; or      b) severe icing; or      c) severe mountain wave; or
- d) thunderstorms, without hail that are obscured, embedded, widespread or in squall-lines; or      e) thunderstorms, with hail that are obscured, embedded, widespread or in squall-lines; or      f) heavy dust storm or heavy sandstorm; or
- g) volcanic ash cloud; or      h) pre-eruption volcanic activity or a volcanic eruption.

( END OF CHAPTER FOUR )

## CHAPTER 5. SEPARATION METHODS AND MINIMA -

- Chapter 5 contains procedures and **non-radar separation minima** for use in the separation of aircraft in the **en route phase** as well as aircraft in the **arrival and departure phases** of flight.
- the controlled **IFR flight separation methods** applied by ATC are, **Vertical, horizontal and composite** separation .

**NOTE** : **Composite separation** is only **applied** on the **basis** of **regional air navigation agreements**.

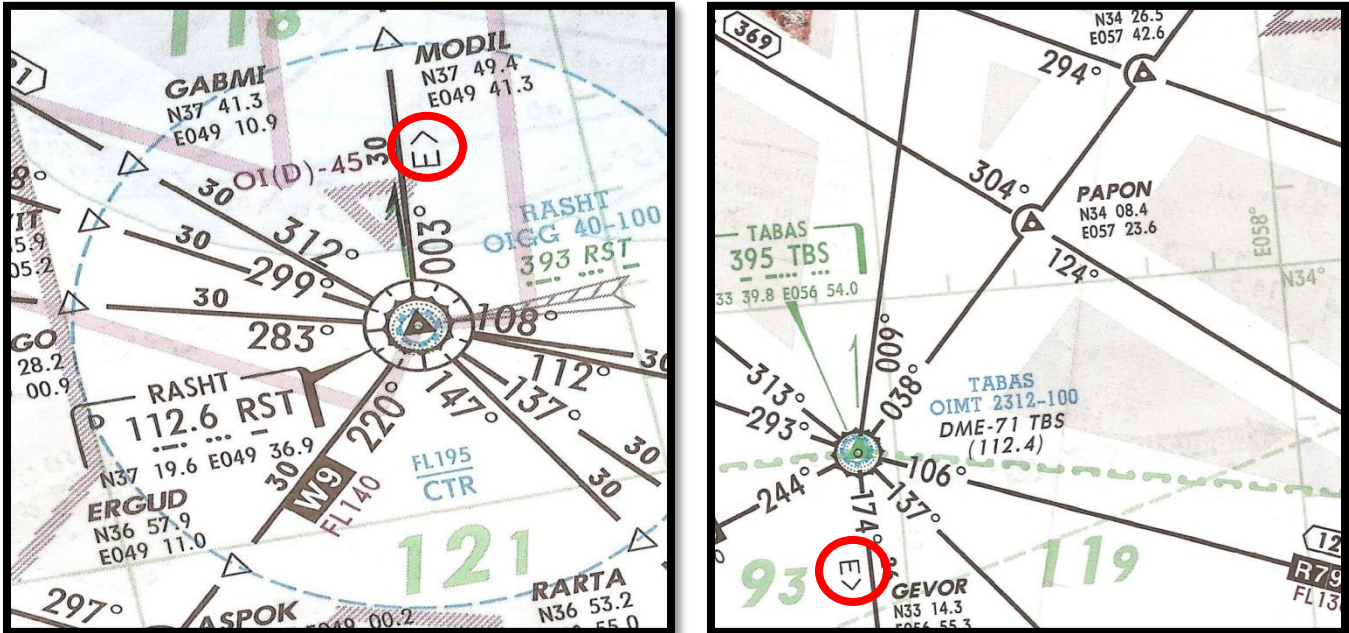
### SEPARATION OF CONTROLLED TRAFFIC :

- Vertical or horizontal separation shall be provided:
  - a) between all flights in Class A and B airspaces;
  - b) between IFR flights in Class C, D and E airspaces;
  - c) between IFR flights and VFR flights in Class C airspace;
  - d) between IFR flights and special VFR flights; and
  - e) between special VFR flights,

### Vertical separation minimum :

- The vertical separation minimum (**VSM**) shall be:
  - a) A nominal 300 m (**1,000 ft**) **below FL 290** and a nominal 600 m (**2,000 ft**) **at or above this level, except, within RVSM airspace** , a 300 m (**1,000 ft**) below **FL 410**, and a 600 m (**2,000 ft**) **at or above this level**.
- The **cruising levels** to be assigned to controlled flights shall be selected from those allocated **to IFR flights as** :
  - a) For course **from 000 to 179 degrees**, select an **odd level**, and ;
  - b) For course from **180 to 359 degrees**, select an **even level, except that**;

- the **correlation** of levels to track shall not apply whenever indicated in **air traffic control clearances**, using the word **“ wrong level ”** or specified by the appropriate **ATS authority in AIPs**.



( “E” Indicates correlation shall not apply, as specified by ATS authority )

**NON-RADAR WAKE TURBULENCE LONGITUDINAL SEPARATION MINIMA :**

- The **ATC unit** concerned shall **not be required to apply** wake turbulence separation:

a) for **arriving VFR flights** landing on the same runway as a **preceding** landing **HEAVY** or **MEDIUM** aircraft; and

b) between **arriving IFR flights** executing **visual approach** when the aircraft has **reported** the preceding aircraft **in sight** and has been **instructed to follow** and **“maintain own separation”** from that aircraft.

- The **pilot-in-command** of the aircraft concerned shall be **responsible for** ensuring that the **spacing** from a preceding aircraft of a heavier wake turbulence category is acceptable.
- **If it is determined that additional spacing is required**, the **flight crew** shall **inform the ATC unit** accordingly, stating their requirements.

## Separation for **arriving aircraft** :

- The following minima shall be applied to aircraft landing **behind** a **HEAVY** or a **MEDIUM** aircraft:
  - a) **MEDIUM** aircraft **behind HEAVY** aircraft — **2 minutes**;
  - b) **LIGHT** aircraft **behind** a **HEAVY** or **MEDIUM** aircraft — **3 minutes**.

## Separation of **departing aircraft** :

- A minimum separation of **2 minutes** shall be applied between a **LIGHT** or **MEDIUM** aircraft taking off **behind** a **HEAVY** aircraft or a **LIGHT** aircraft taking off **behind** a **MEDIUM** aircraft .
- A separation minimum of **3 minutes shall be applied** between a **LIGHT** or **MEDIUM** aircraft when taking off behind a **HEAVY** aircraft or a **LIGHT** aircraft **when taking off behind** a **MEDIUM** aircraft **from an intermediate part** of the same runway .
- **Reduced** runway separation **minima** shall only be **applied** during the hours of **daylight** from **30 minutes after** local **sunrise** to **30 minutes before** local **sunset** .
- A **landing aircraft** is **not** normally **permitted** to **cross** the **beginning** of the **runway** on its final approach **until** the **preceding** departing aircraft has become **airborne** and **crossed** the end of the runway threshold .
- **separation** minima shall **not apply** to aircraft operating under **military** necessity and **formation flights** .

## ESSENTIAL TRAFFIC :

- Essential traffic **is** that **controlled traffic** to which the provision of **separation by ATC** is **applicable**.
- ATC is required to **provide separation between IFR flights** in airspace Classes **A** to **E**, and **between IFR** and **VFR** flights in Classes **B** and **C**.



- A **VFR flight** would **not** constitute **essential traffic** to **other VFR flights** **except** within **Class B** airspace.

#### SEPARATION IN THE VICINITY OF AERODROMES :

- the separation **minima** may be **reduced** in the **vicinity** of aerodromes **if**:
  - a) when each aircraft is continuously visible to this controller; or
  - b) pilots report that they can maintain their own separation; or
  - c) the flight crew of the succeeding aircraft reports that the other aircraft is in sight and separation can be maintained.

#### Standard clearances for departing aircraft shall contain :

- a) aircraft identification;
  - b) clearance limit, normally destination aerodrome;
  - c) designator of the assigned SID, if applicable;
  - d) initial level, except when this element is included in the SID description;
  - e) allocated SSR code;
  - f) any other necessary instructions or information not contained in the SID .
- an IFR en-route clearance **stating**: ``Clearance **expires** at **08:15**`, it mean that, **If not airborne until 08:15** a **new clearance** has to be **issued** .
  - Departing aircraft may be **expedited** by suggesting a **take-off** direction which is **not into the wind**. It is the **responsibility** of the **pilot-in-command** of an aircraft to **decide** between making such a take-off or waiting for take-off in a preferred direction .
  - **If** departures are **delayed**, the delayed flights shall normally be **cleared** in an order **based on** their estimated **time of departure** .
  - Air traffic control units should, when practicable, **advise** aircraft **operators** or their designated representatives when anticipated **delays** are expected **to exceed 30 minutes** .

- Information regarding **significant changes** in the **meteorological conditions** in the take-off or climb-out area, obtained by Approach control, shall be **transmitted** to the **departing aircraft without delay**, except when it is known that the aircraft already has received the information .
- an IFR en-route clearance **stating**: ``Clearance **expires** at **08:15**`, it mean that, **If not airborne until 08:15**, a **new clearance** has to be **issued** .

#### PROCEDURES FOR ARRIVING AIRCRAF :

- arriving aircraft **should normally** be **cleared** to **follow** the appropriate **STAR**. The aircraft shall **be informed** of the **type** of **approach** to expect and **runway-in-use** as early as possible .

#### Standard clearances for arriving aircraft shall contain :

- a) aircraft identification;
- b) designator of the assigned STAR;
- c) runway-in-use, except when part of the STAR description;
- d) initial level, except when this element is included in the STAR description;
- e) other necessary instructions or information not contained in the STAR .

#### Visual approach :

- Clearance for **an IFR flight** to execute a **visual approach** may be **requested** by a **flight crew** or **initiated** by the **controller**.
- An IFR flight may be cleared to execute a **visual approach provided** the **pilot** can maintain **visual reference** to the **terrain** and:
  - a) the reported **ceiling** is **at** or **above** the level of the beginning of the **initial approach segment** ; or
  - b) the pilot reports that a **visual** approach and **landing** can be **completed**.
- The **pilot-in-command** of the aircraft concerned shall be **responsible** for the **spacing** from a **preceding aircraft** .

## Instrument approach :

- The **approach control** unit shall **specify** the **instrument approach procedure** to be used by arriving aircraft, **but flight crew** may request an **alternative procedure** .

## Holding :

- When **delay** is **expected**, the aircraft shall be **cleared** to the **holding fix**, and **expected approach time** shall be **delivered** .

## Approach sequence :

- a) An aircraft in a **state of emergency**, including being subjected to **unlawful interference**, shall be given **priority over other aircraft** .
- b) **Hospital aircraft** or aircraft **carrying** any **sick** or seriously **injured person** requiring urgent medical attention;
- c) Aircraft engaged in **search and rescue** operations

**NOTE** : If an aircraft **enters** an aerodrome traffic circuit **without** proper **authorization**, it **shall be permitted** to **land** if its actions indicate that it so desires .

## Expected approach time -

- An expected approach time **shall be determined** for an arriving aircraft that will be **subjected** to a **delay** of **10 minutes** or **more**, **not later than** at the **commencement** of its **initial descent** from **cruising level** .
- A **revised** expected approach time **shall be transmitted** to the aircraft whenever **differs** from that **previously** transmitted by **5 minutes** or **more** .

## INFORMATION FOR ARRIVING AIRCRAFT :

- As **early as practicable** after an aircraft has established communication with approach control service, the **following information**, in the order listed, shall be **transmitted** to the **aircraft** :

- type of approach and runway-in-use; **meteorological information**, as follows: surface wind direction and speed, including significant variations; visibility and, when applicable, RVR; present weather; cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured; air temperature; dew point temperature; altimeter setting(s); significant meteorological phenomena in the approach area; current runway surface conditions;

### **At the commencement of final approach :**

- significant changes in the mean surface wind direction and speed by :
  - Mean headwind component: 19 km/h (10 kt)
  - Mean tailwind component: 4 km/h (2 kt)
  - Mean crosswind component: 9 km/h (5 kt)
  - wind shear and/or turbulence in the final approach area; if any

**NOTE :** Aircraft which **fail to report** after transferred to an **aerodrome control tower**, or, having reported, but, cease radio contact and **fail to land five minutes after the expected landing time**, shall be reported to the **rescue coordination center** .

### **UNCERTAINTY OF POSITION ON THE MANOEUVRING AREA :**

- A pilot in **doubt** as to the **position** of the aircraft with respect **to the manoeuvring area**, shall **immediately** :
  - a) stop the aircraft; and
  - b) notify the ATS unit including the last known position .
  
- **If** recognizes that the aircraft is **on a runway**, the pilot **shall immediately**:
  - a) **notify the ATS** unit including the last known position ;
  - b) if able, **vacate** the **runway** as **expeditiously** as possible, unless otherwise instructed by the ATS unit; and then,
  - c) **stop** the **aircraft** .

- If the **control tower** is **unable** to determine, that an **aircraft** has **cleared the runway**, the aircraft shall be requested to **report when** it has **vacated the runway** .
- The report shall be made **when the entire aircraft is beyond the relevant runway-holding position** .
- Aircraft shall **not be permitted to line up and hold** on the runway-in-use **until the landing aircraft has passed the point of intended holding** .

#### **PRIORITY ON THE MANOEUVRING AREA :**

- All **vehicles** and **pedestrians** shall **give way** to **aircraft** which are **landing, taxiing or taking off** .
- **emergency vehicles** proceeding to the **assistance** of an **aircraft in distress** shall **have priority** over all other surface movement traffic .
- An **aircraft landing** or in the final stages of an approach to land shall **normally have priority** over an **aircraft** intending **to depart** .
- On acceptance of `` **clearance for immediate take-off** `` , the aircraft shall **taxi out to the runway** and **take off** in one **continuous movement** .

#### **AUTHORIZATION OF SPECIAL VFR FLIGHTS :**

- **When traffic** conditions **permit**, **special VFR flights** may be **authorized** subject to the **approval of** the unit providing **approach control** service .
- **Separation** shall be **effected** between **all IFR flights and special VFR flights** and between **all special VFR flights** .
- When the **ground visibility** is **not less than 1, 500 m**, 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 .

### **Aircraft maintaining a level :**

- An aircraft is **considered** to be **reached** and **maintaining** its **assigned level** when it is **within**  $\pm 60$  m ( **$\pm 200$  ft**) in **RVSM** airspace and  $\pm 90$  m ( **$\pm 300$  ft**) in **other airspaces** .

### **Aircraft vacating/passing a level :**

- An aircraft **is considered** to have commenced its manoeuvre and **vacated/crossed** the **previously occupied level** when a **change of more than** 90 m (**300 ft**) in the anticipated direction from its previously assigned level .

### **pilots shall resume voice or CPDLC position reporting :**

- a)** when so instructed;
- b)** when advised that the ATS surveillance service has been terminated; or
- c)** when advised that identification is lost .

### **AIRCRAFT TRANSPONDER FAILURE :**

- When an aircraft experiencing **transponder failure after departure**, the **ATC** units concerned should **endeavor** to provide for **continuation** of the flight **to the aerodrome** of first **intended landing** in accordance with the flight plan .
- when **failure** is detected **shortly after take-off**, The aircraft **may** then be **required to return** to the **departure aerodrome or to land** at the **nearest suitable aerodrome** .
- In case of a transponder **failure** which is detected **before departure** from an aerodrome where it is **not** practicable to effect a **repair**, the aircraft concerned should be **permitted to proceed**, as directly as possible, to the **nearest** suitable **aerodrome** where **repair** can be **made** .

## Vectoring :

- Vectoring shall be achieved by issuing to the **pilot** specific **headings** which will **enable** the aircraft to **maintain** the **desired track** .
- when an aircraft is given its **initial vector** diverting it from a previously assigned route, the **pilot shall be informed what the vector is to accomplish**, and the **limit** of the **vector** shall be specified (e.g. to ... position, for ... approach);
- Prior to, or upon commencement of, vectoring for approach, **the pilot shall be advised** of the **type of approach** and the **runway** to be **used** .
- Aircraft **vectored for final approach** should be given **a heading** or **a series of headings** calculated to close with the final approach track (**in level flight with the final approach track of 45 degrees or less** ) .
- An aircraft making a **radar approach** should be directed to **execute a missed approach** if **no clearance to land** has been **received** from the controller by the time the aircraft reaches a distance of **4 km (2 NM)** **from touchdown** .
- **transmission** should **not** be **interrupted** for intervals of **more than five seconds** while the aircraft is **within** a distance of **8 km (4 NM)** **from touchdown** and the pilot shall be advised that **no further acknowledgement** of transmission is **required** .

## Air traffic advisory service :

- The **objective** of the air traffic advisory service is **to make information on collision hazards more effective than** it would be in the **flight information service**.
- It may be **provided** to aircraft conducting **IFR flights** in **advisory airspace** or on advisory routes (**Class F airspace**).
- Air traffic **advisory service** does **not afford** the **degree** of **safety** and **cannot assume** the same **responsibilities as** air traffic control service .

- To make this quite clear, **air traffic advisory** service does **not deliver** “clearances” but **only** “**advisory information**” and it uses the **word** “**advise**” or “**suggest**” when a course of action is proposed to an aircraft .
- it is for the **aircraft** to **decide whether** or **not** it will **comply** with the advice or suggestion received and to inform air traffic advisory service .
- IFR flights intending **to cross an advisory route** should do so as **nearly as possible at** an angle of **90 degrees** to the direction of the route and at a level, appropriate to its track .
- **aircraft** equipped with suitable two-way radio communications **shall report** during the period **twenty to forty minutes following** the time of **last contact**, to indicate that the flight is progressing according to plan, including identification of the aircraft and the **words** “**Operations normal**”.
- When **no report** from an aircraft has been received, the **ATS** unit shall, **within** the period of **thirty minutes**, **endeavor** to **obtain** such **report** in order **to apply** the “**Uncertainty Phase**” .

#### PHRASEOLOGIES ( Chapter 12 ) :

- **Pilots** and **ATS personnel** shall be **thoroughly familiar** with the radiotelephony procedures .
- Pilots and, **ATS personnel** will be expected to **use plain language**, which should be **as clear** and **concise** as possible, to the level specified in the ICAO language proficiency requirements .
- During operations in or vertical transit through RVSM airspace with aircraft not approved for RVSM operations, pilots shall report non-approved status as follows :
  - a) at initial call on any channel within RVSM airspace;
  - b) in all requests for level changes; and
  - c) in all read backs of level clearances .



- Phrases, such as “behind landing aircraft” or “after departing aircraft”, are considered as conditional clearances . for example:

“SAS 941, BEHIND DC9 ON SHORT FINAL, LINE UP BEHIND”.

**NOTE :** This implies the need for the aircraft receiving the conditional clearance to identify the aircraft causing the conditional clearance .

### ( ATC PHRASEOLOGIES )

Circumstances	Phraseologies
DESCRIPTION OF LEVELS	a) FLIGHT LEVEL (number); or b) (number) METRES; or c) (number) FEET.
LEVEL CHANGES	CLIMB (or DESCEND) TO (level)
LEVEL CHANGES AND RATES	CLIMB (or DESCEND) TO ( level ) AT (number) FPM
to require action at a Specified time or place	a) IMMEDIATELY; b) AFTER PASSING ( point ); c) AT (time )
to require action when convenient	WHEN READY (instruction)
when a pilot is unable to comply with a clearance or instruction	“ UNABLE ”
Pilot to deviate from ATC clearance	“ TCAS RA ”
to comply with an ACAS (RA) after an ACAS ( RA ) is completed and return to the ATC clearance	“ CLEAR OF CONFLICT, RETURNING TO (assigned clearance)”
after an ACAS RA is completed , resumed assigned clearance	“ CLEAR OF CONFLICT, ( assigned clearance ) RESUMED ”

## ( ATC PHRASEOLOGIES )

Circumstances	Phraseologies
← indication of minimum fuel	→ “ MINIMUM FUEL ”
← Transfer of control	→ CONTACT (unit call sign) (frequency)
← to instruct an aircraft to change its call sign ( risk of confusion/safety )	→ CHANGE YOUR CALL SIGN TO (new call sign)
← to pass traffic information	→ TRAFFIC (information)
← to acknowledge traffic information	→ a) “ LOOKING OUT ” b) “ TRAFFIC IN SIGHT ” c) “ NEGATIVE CONTACT [reasons] ”
← to omit position reports until a specified position	→ a) NEXT REPORT AT (significant point ) until b) OMIT POSITION REPORTS UNTIL (specify ) c) RESUME POSITION REPORTING.
← to report present position	→ “(distance) DME FROM (DME station) ”
← to ascertain RVSM approval status of an aircraft	→ CONFIRM RVSM APPROVED
← to report RVSM approved status	→ “ AFFIRM RVSM ”
← to report RVSM non-approved	→ “ NEGATIVE RVSM (e.g. State aircraft) ”
← to report when severe turbulence affects the capability of an aircraft to maintain height-keeping requirements for RVSM	→ “ UNABLE RVSM DUE TURBULENCE ”
← the equipment of an aircraft degraded below minimum aviation system performance standards	→ “ UNABLE RVSM DUE EQUIPMENT ”
← Emergency descent	→ “ EMERGENCY DESCENT (intentions) ”
← when a pilot requests a visual approach	→ “ REQUEST VISUAL APPROACH ”
← when the pilot of a succeeding aircraft has the preceding aircraft in sight	→ “ REQUEST VMC DESCENT ”

## ( ATC PHRASEOLOGIES )

### Circumstances

### Phraseologies

Expected approach time ( EAT )

a) NO DELAY EXPECTED

b) EXPECTED APPROACH TIME (time)

c) DELAY NOT DETERMINED (reasons)

to request permission  
to start engines

a) ``[aircraft location] REQUEST START UP``

b) ``[aircraft location] REQUEST START UP,  
INFORMATION (ATIS identification) ``

To request permission  
for pushback

``[aircraft location] REQUEST PUSHBACK``

To request time check

`` REQUEST TIME CHECK ``

when no ATIS broadcast  
is available

`` REQUEST DEPARTURE INFORMATION ``

Taxi procedure  
for departure

``[aircraft type] [wake turbulence category  
if "heavy"] [aircraft location]  
REQUEST TAXI [intentions]``

where detailed taxi  
instructions are required

`` [aircraft type] [wake turbulence  
category if "heavy"]REQUEST  
DETAILEDTAXI INSTRUCTIONS ``

after landing

a) `` REQUEST BACKTRACK ``

b) ``(aircraft location) REQUEST TAXI  
TO (destination on aerodrome)``

VACATE RUNWAY

`` RUNWAY VACATED ``

EXPEDITE TAXI (reason)

`` EXPEDITING ``

[CAUTION] TAXI SLOWER [reason]

`` SLOWING DOWN ``

HOLD POSITION

`` HOLDING ``

HOLD SHORT OF (position)

`` HOLDING SHORT ``

To cross a runway

``REQUEST CROSS RUNWAY (number)``

**NOTE 1 :** The pilot will, when requested, report **"RUNWAY VACATED"**, when the **entire aircraft** is **beyond** the relevant **runway-holding position** .

**NOTE 2 :** words **"ROGER"** and **"WILCO"** are **insufficient** acknowledgement of the instructions HOLD, HOLD POSITION and HOLD SHORT OF (position) .

**NOTE 3 :** In each case, the **acknowledgement shall be** by the phraseology **"HOLDING"** or **"HOLDING SHORT"**, as appropriate .

## ( ATC PHRASEOLOGIES )

Circumstances	Phraseologies
Approach instruction for circling-to-land	CLEARED (type of approach) RUNWAY (number) FOLLOWED BY CIRCLING TO RUNWAY (number)
PREPARATION FOR TAKE-OFF	a) REPORT WHEN READY [FOR DEPARTURE] b) ARE YOU READY [FOR DEPARTURE]? c) ARE YOU READY FOR IMMEDIATE DEPARTURE ? `` READY ``
clearance to enter runway and await take-off clearance	a) LINE UP [AND WAIT] b) LINE UP RUNWAY (number) c) LINE UP. BE READY FOR IMMEDIATE DEPARTURE
conditional clearances	(condition) LINE UP (brief reiteration of the condition)
acknowledgement of a conditional clearance	`` (condition) LINING UP (brief reiteration of the condition) ``
TAKE-OFF CLEARANCE	a) RUNWAY (number) CLEARED FOR TAKE-OFF [REPORT AIRBORNE] b) HOLD POSITION, CANCEL TAKE-OFF I SAY AGAIN CANCEL TAKE-OFF (reasons) `` HOLDING ``
to cancel a take-off clearance	c) STOP IMMEDIATELY (repeat aircraft call sign) STOP IMMEDIATELY `` STOPPING ``
to stop a take-off after an aircraft has commenced take-off roll	`` [aircraft type] (position) (level) FOR LANDING ``
ENTERING AN AERODROME TRAFFIC CIRCUIT	`` (position in circuit, e.g. DOWNWIND) ``
IN THE CIRCUIT APPROACH INSTRUCTIONS	a) MAKE SHORT APPROACH b) MAKE LONG APPROACH ( or EXTEND DOWNWIND ) c) REPORT BASE (or FINAL, or LONG FINAL)

**NOTE :** The report **“LONG FINAL”** is made when aircraft **turn** on to final approach at a **distance greater than 7 km (4 NM)** from **touchdown** or when an aircraft on a **straight-in approach** is **15 km (8 NM)** from **touchdown**.

In both cases a **report “FINAL”** is **required** at **7 km (4 NM)** from **touchdown**.

### ( ATC PHRASEOLOGIES )

Circumstances	Phraseologies
to make an approach descending to an agreed minimum level	“ REQUEST LOW APPROACH( reason) ”
to fly for the purpose of visual inspection by persons on the ground	“ REQUEST LOW PASS (reasons) ”
DELAYING AIRCRAFT	a) CIRCLE THE AERODROME b) ORBIT (RIGHT, or LEFT)
MISSED APPROACH	GO AROUND
COMMUNICATION	“ GOING AROUND ” CONTACT GROUND (frequency)
AFTER LANDING	

### PROCEDURES FOR IN-FLIGHT CONTINGENCIES :

➤ **pilot** shall **advise ATC** as soon as practicable, reminding them of the **type of aircraft** involved and the **nature** of the **problem**, **then** :

1) The radiotelephony distress signal (**MAYDAY**) or urgency signal (**PAN PAN**) preferably spoken **three times** shall be used as appropriate .

2) **leave** the **assigned route** or **track** by initially turning **at least 45 degrees** to the **right** or to the **left**, in order to acquire **track offset 15 NM (28 km)** from the assigned track center line .

3) **if unable** to **maintain** the assigned flight **level**, **select** a final **altitude** which **differs** from those normally used by **150 m (500 ft)** **if** at or **below FL 410**, or by **300 m (1 000 ft)** **if** above **FL 410**; **or**

4) **If able to maintain** the assigned flight level, **once** the aircraft has **deviated 19 km (10 NM)** from the assigned track center line, **climb** or **descend** to select a flight level which **differs** from those normally used by **150 m(500 ft)**, if at or **below FL 410**, or by **300 m (1 000 ft)** if **above FL 410** .

5) **Establish communications** with and alert **nearby aircraft** by broadcasting, at suitable intervals on **121.5 MHz** (or, as a backup, **on the** inter-pilot air-to-air frequency **123.45 MHz**) and where appropriate on the frequency in use:

aircraft identification, flight level, position (including the ATS route designator) and intentions;

6) Maintain a **watch** for conflicting traffic both **visually and** by reference to **ACAS** (if equipped);

7) **Turn on all aircraft exterior lights** (commensurate with appropriate operating limitations); and

8) keep the **SSR** transponder **on at all times** .

## Weather deviation procedures :

**NOTE** : The following procedures are intended for deviations around **adverse meteorological conditions** .

- When the **pilot** initiates communications with ATC, a **rapid response** may be **obtained by** stating “**WEATHER DEVIATION REQUIRED**” to indicate that **priority** is **desired** on the frequency and for ATC response .
- When **necessary**, the pilot should initiate the communications using the urgency call “**PAN PAN**” (preferably spoken **three times**) .
- The pilot shall **inform ATC** when weather deviation is **no longer** required, or when a weather deviation has been completed and the aircraft has returned to its cleared route .

- where a **pilot needs to exercise the authority** of a pilot-in-command under provisions of **Annex 2 (ATC CLEARANCE CANNOT BE OBTAINED)** :
- a) If possible, **deviate away from** an organized track or **route** system;
  - b) **Establish communications** with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including ATS route designator or the track code) **and** intentions, on the frequency in use and on **121.5 MHz** (or, as a backup, on the inter-pilot air-to-air frequency **123.45 MHz**);
  - c) **watch for** conflicting traffic both **visually and** by reference to **ACAS** (if equipped);
  - d) **Turn on all aircraft exterior lights** (commensurate with appropriate operating limitations);
  - e) **For** deviations of **less than 19 km (10 NM)** **remain** at a **level assigned** by ATC;
  - f) For deviations **greater than 19 km (10 NM)**, when the aircraft is approximately 19 km (10 NM) from track, **initiate a level change mentioned** .
  - g) When **returning** to track, **be** at its **assigned flight level** **when** the aircraft is within approximately 19 km (**10 NM**) of the **center** line .

### **Strayed VFR flights and VFR flights encountering adverse meteorological conditions :**

**NOTE** : A **strayed aircraft is** an aircraft which has **deviated significantly** from its intended track **or** which reports that it is **lost** .

- A **VFR flight** reporting that it is **uncertain** of its **position or lost**, **or** encountering **adverse meteorological** conditions, should be **considered** to be in a state of **emergency** and handled as such .

## Fuel dumping :

- An aircraft in an **emergency** or other **urgent** situations **may need to dump fuel** so as to **reduce to maximum landing mass** in order to effect a safe landing .
- When an aircraft operating **within controlled airspace** needs to dump fuel, the flight crew **shall advise ATC** .
- The **ATC unit** should **coordinate** with the **flight crew** the following:
  - a) **The route to be flown**, which, if possible, should be **clear of cities** and towns, preferably over water and away from areas where thunderstorms have been reported or are expected .
  - b) The **level** to be **used**, which should be **not less than 1, 800 m (6, 000 ft)**; and;
  - c) The **duration** of the fuel **dumping** .

## **Other traffic** should be **separated** from the aircraft dumping fuel by:

- a) at least 19 km (**10 NM**) **horizontally**, but **not behind** the aircraft dumping fuel;
- b) **vertical** separation **if behind** the aircraft dumping fuel **within 15 minutes** flying time **or** a distance of 93 km (**50 NM**) **by** :
  - 1) at least 300 m (**1, 000 ft**) **if above** the aircraft dumping fuel; and
  - 2) at least 900 m (**3, 000 ft**) **if below** the aircraft dumping fuel .

## Fuel emergency and minimum fuel :

- **When a pilot reports** a state of **minimum fuel**, the **controller** shall **inform** the **pilot** as soon as practicable of any anticipated **delays** or that **no delays** are **expected** .
- This is **not** an **emergency situation** but an indication that an **emergency** situation is **possible** should **any additional delay occur** .



- The words **MAYDAY FUEL describe** the nature of the **distress condition** .

## USE OF REPETITIVE FLIGHT PLANS (RPLs) :

- RPLs shall **not be used** for flights **other than IFR** flights operated **regularly** on the **same day(s)** of **consecutive weeks** and on **at least ten occasions or every day** over a period of **at least ten consecutive days** .
- RPLs shall **cover** the **entire flight from** the **departure** aerodrome **to** the **destination** aerodrome .
- The minimum lead time for submission of **RPL** shall be **at least two weeks** and **operators** shall **submit listings** .
- **Changes** of a **permanent nature** involving the inclusion of new flights shall be submitted in the form of **amendment** listings, **at least seven days prior** to the change **becoming effective** .
- **Changes** such as **aircraft type** and **wake turbulence category, speed** and/or **cruising level** shall be **notified** for each individual flight as early as possible and **no later than 30 minutes before departure** .
- In case of an **incidental change** in the **aircraft identification**, the **departure aerodrome**, the **route** and/or the **destination** aerodrome, the **RPL** shall be **cancelled** for the day concerned and an individual flight plan shall be submitted .
- Whenever it is **expected** by the operator that a specific flight, for which an RPL has been submitted, is likely to **encounter a delay of 30 minutes or more** in excess of the off-block time stated in that flight plan, the **ATS** unit responsible for the departure aerodrome **shall be notified immediately** .
- The **operator** shall **ensure that** the **latest** flight plan **information**, is **made available** to the **pilot-in-command** .

**NOTIFICATION OF COMMUNICABLE DISEASES, OR OTHER PUBLIC HEALTH RISK,  
ON BOARD AN AIRCRAFT :**

- The **flight crew** of an **en-route** aircraft shall, upon **identifying** a suspected case(s) of **communicable disease**, or other **public health risk, on board** the aircraft, promptly **notify** the **ATS unit** with which the pilot is communicating .

**THE END**

**( GOOD LUCK )**

Class	Type of flight	Separation provided	Service provided	Speed limitation*	Radio communication requirement	Subject to an ATC clearance
A	IFR only	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
B	IFR	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
	VFR	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
C	IFR	IFR from IFR IFR from VFR	Air traffic control service	Not applicable	Continuous two-way	Yes
	VFR	VFR from IFR	1. Air traffic control service for separation from IFR; 2. VFR/VFR traffic information (and traffic avoidance advice on request);	250 KT IAS below 3,050m (10,000 ft) AMSL	Continuous two-way	Yes
D	IFR	IFR from IFR	Air traffic control service, traffic information about VFR flights (and traffic avoidance advice on request)	250 KT IAS below 3,050m (10,000 ft) AMSL	Continuous two-way	Yes
	VFR	Nil	IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request)	250 KT IAS below 3,050m (10,000 ft) AMSL	Continuous two-way	Yes
Class	Type of flight	Separation provided	Service provided	Speed limitation*	Radio communication requirement	Subject to an ATC clearance
E	IFR	IFR from IFR	Air traffic control service and, as far as practical, traffic information about VFR flights	250 KT IAS below 3,050m (10,000 ft) AMSL	Continuous two-way	Yes
	VFR	Nil	Traffic information as far as practical	250 KT IAS below 3,050m (10,000 ft) AMSL	No	No
F	IFR	IFR from IFR as far as practical	Air traffic advisory service; flight information service	250 KT IAS below 3,050m (10,000 ft) AMSL	Continuous two-way	No
	VFR	Nil	Flight information service	250 KT IAS below 3,050m (10,000 ft) AMSL	No	No
G	IFR	Nil	Flight information service	250 KT IAS below 3,050m (10,000 ft) AMSL	Continuous two-way	No
	VFR	Nil	Flight information service	250 KT IAS below 3,050m (10,000 ft) AMSL	No	No

**(I.C.A.O ATS AIRSPACE CLASSIFICATIONS)**

**NOTE :** To answer questions about airspace classifications, refer to this table .