



CHART GLOSSARY and DEFINITION

INDOAVIS[®]

These charts are for training purposes only
and not to be use for flight

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**INTRODUCTION TO INDOAVIS
AERONAUTICAL CHART
USER'S GUIDE**

English Version

**CHART GLOSSARY
AND DEFINITION**

CHART GLOSSARY AND DEFINITION

AERONAUTICAL CHART — A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.

In INDOAVIS Aeronautical Chart into three groups, each group is adjusted to the utilizations. As for the grouping as follows:

1. TERMINAL AERONAUTICAL CHART

- a. CIVIL AIRNAV MANUAL
- b. MILITARY AIRNAV MANUAL (FLIPS)
- c. HELICOPTER AIRNAV MANUAL
- d. AIRPORT FACILITY/DIRECTORY

2. IFR (INSTRUMENT) AERONAUTICAL CHART

- a. EN-ROUTE CHART (High & Low Altitude)
- b. SAFETY ROUTE CHART (Low Altitude)

3. VFR (VISUAL) AERONAUTICAL CHART

- a. WAC-ICAO (World Aeronautical Chart) 1:1.000.000
- b. ONC (Operational Navigation Chart) 1:1.000.000
- c. SAC (Sectional Aeronautical Chart) 1:500.000
- d. TRA (Training Area Chart) 1:250.000
- e. HRC (Helicopter Routing Chart) 1:50.000

ICAO Aeronautical chart series available

Civil Aviation Administration, the Aeronautical Information Service and the sales agents have copies of the ICAO Aeronautical Chart Catalogue (Doc 7101) where all aeronautical charts or chart series produced by this and other countries are listed, and known to be generally available to civil aviation

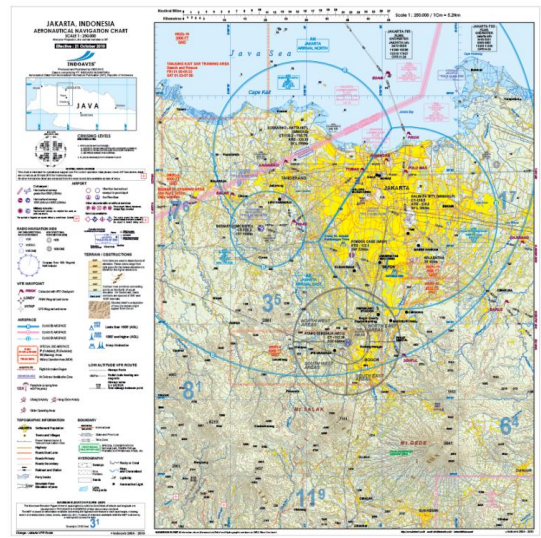
The following ICAO series of aeronautical charts are produced:

1. World Aeronautical Chart - ICAO 1:1.000.000
2. Plotting Chart - ICAO
3. Aerodrome heliport Chart - ICAO
4. Aerodrome Ground Movement Chart - ICAO
5. Aircraft Parking Docking Chart - ICAO
6. Aerodrome Obstacle Chart - ICAO - Type A
7. Aerodrome Obstacle Chart - ICAO - Type C
8. Precision Approach Terrain Chart- ICAO (precision approach Cat II)
9. En-route Chart - ICAO
10. Area Chart - ICAO (arrival and transit routes)
11. Area Chart - ICAO (departure and transit routes)
12. Standard Departure Chart - Instrument (SID) -ICAO
13. Standard Arrival Chart - Instrument (STAR) -ICAO
14. Instrument Approach Chart - ICAO (for each runway and procedure type)
15. Visual Approach Chart - ICAO. (for each runway)

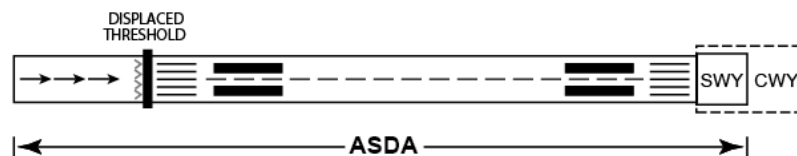
AERONAUTICAL NAVIGATION CHART (ANC) 1:250.000,- — Is the standard INDOAVIS small - scale aeronautical chart series. The ANC and other aeronautical navigation and planning charts provide essential cartographic data appropriate to scale, and are overprinted with stable aeronautical information such as obstructions, aerodromes, special use airspace, navigational aids, Maximum Elevation Figures (MEFs), and related data.

Chart function

- 1) serve as an air navigation aid for flight crews of long range aircraft at high altitudes;
- 2) provide selective checkpoints over extensive ranges for identification at high altitudes and speeds, which are required for visual confirmation of position;
- 3) provide for continuous visual reference to the ground during long range flights over areas lack of radio or other electronic navigation aids, or over areas where visual navigation is preferred or becomes necessary;
- 4) provide a general purpose chart series for long range flight planning and plotting.



ACCELERATE STOP DISTANCE AVAILABLE (ASDA) — The length of the takeoff run available plus the length of the stop-way (SWY), if provided.



ADVISORY ROUTE (ADR) — A designated route along which air traffic advisory services is available.

ADVISORY SERVICE — Advice and information provided by a facility to assist pilots in the safe conduct of flight and aircraft movement.

AERODROME (AD) — 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.

AERODROME ELEVATION (AD ELEV) — The elevation of the reference point of the landing area

AERODROME/HELIPORT CHART — This chart contains detailed aerodrome Heliport data to provide flight crews with information.

AERODROME OPERATING MINIMA - The limits of usability of an aerodrome for:

- a) Take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions;
- b) Landing in precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation; and
- c) Landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and
- d) Landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions.

AERODROME TRAFFIC ZONE (ATZ) — An airspace of detailed dimensions established around an aerodrome for the protection of aerodrome traffic.

AERODROME FLIGHT INFORMATION SERVICE (AFIS) — A directed traffic information and operational information service provided within an aerodrome flight information zone, to all radio equipped aircraft, to assist in the safe and efficient conduct of flight.

AERODROME REFERENCE CODE — A simple method for interrelating the numerous specifications concerning the characteristics of aerodromes so as to provide a series of aerodromes facilities that are suitable for the aeroplanes that are intended to operate at the aerodrome. in the table below:

Code Element 1			Code Element 2	
Code Number	Aeroplane Reference Field Length	Code Letter	Wing Span	Outer Main Gear Wing Span (*)
(1)	(2)	(3)	(4)	(5)
1	Less than 800m	A	Up to but not including 15m	Up to but not including 4.5m
2	800m up to but not including 1200m	B	15m up to but not including 24m	4.5m up to but not including 6m
3	1200m up to but not including 1800m	C	24m up to but not including 36m	6m up to but not including 9m
4	1800m and over	D	36m up to but not including 52m	9m up to but not including 14m
		E	52m up to but not including 65m	9m up to but not including 14m
		F	65m up to but not including 80m	14m up to but not including 16m

(*)Distance between the outside edges of the main gear wheels.

NOTE: Guidance on planning for aeroplanes with wing spans greater than 80m is given in ICAO Doc. 9157 "Aerodrome Design Manual," Parts 1 and 2.

AERODROME REFERENCE POINT (ARP) — The designated geographical location of 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.

AERONAUTICAL INFORMATION CIRCULAR (AIC) — A notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters.

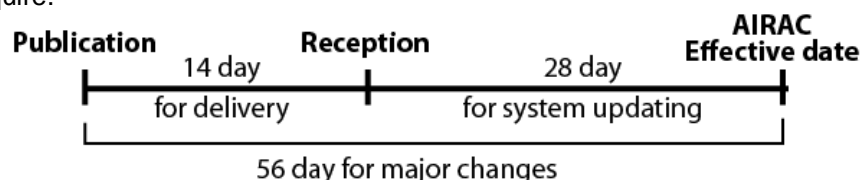
AIRPORT REFERENCE POINT (ARP) — A point on the airport designated as the official airport location.

AIP AMENDMENT (AMDT) — Permanent changes to the information contained in the AIP.

AIP SUPPLEMENT (SUPP) —Temporary changes to the information contained in the AIP which are published by means of special pages.

AIRAC — An acronym (aeronautical information regulation and control) signifying a system aimed at advance notification based on common effective dates, of circumstances that necessitate significant changes in operating practices.

AIRAC SCHEDULE — It may look indeed like a long period, 28 days, or even 56, but it should be understood that aeronautical information changes (mostly published through so called AIRAC Amendments) require.



AIRCRAFT APPROACH CATEGORY — The following ICAO table indicates the specified range of handling speeds (IAS in Knots) for each category of aircraft to perform the maneuvers specified. These speed ranges have been assumed for use in calculating airspace and obstacle clearance for each procedure.

Aircraft Category	Vat	Range of Speeds for Initial Approach	Range of Final Approach Speeds	Max speeds for Visual Maneuvering (Circling)	Maximum speed for Missed Approach	
					Intermediate	Final
A	< 91 kt 169 km/h	91/150 (110*) kt 165/335 (205) Km/h	70/100 kt 130/185 km/h	100 kt 185 km/h	100 kt 185 km/h	110 kt 205 km/h
B	91 / 121 kt 169 / 223 km/h	121 / 180 (140*) 220/335 (260*)	135 155/240	135 kt 250 km/h	130 kt 240 km/h	150 kt 280 km/h
C	121 / 141 kt 224 / 260 km/h	160 / 240 kt 295 / 445 km/h	180 kt 215/295 km/h	180 kt 335 km/h	160 kt 295 km/h	240 kt 444 km/h
D	141 / 166 kt 261 / 306 km/h	185 / 250 kt 345 / 465 km/h	205 kt 240/345 km/h	205 kt 380 km/h	185 kt 345 km/h	265 kt 490 km/h
E	166 / 211 kt 307 / 390 km/h	185 / 250 kt 345 / 220** km/h	240 kt 285/425 km/h	240 kt 445 km/h	230 kt 425 km/h	275 kt 510 km/h
H***	N/A	130/220	110/165	N/A	165	165

- Vat —Speed at threshold based on 1.3 times stall speed in the landing configuration at maximum certificated landing mass.
- *Maximum speed for reversal and racetrack procedures.
- NOTE: The speed table applies to the new ICAO approach procedures which are identifiable by the OCA(H) figures and the PANS-OPS notation on the lower left corner of the approach chart. Old ICAO approach procedures show an OCL instead of OCA(H). Deviations are listed in the Air Traffic Control section.
- *** Helicopter point-in-space procedures based on basic GNSS may be designed using maximum speeds of 120 KIAS for initial and intermediate segments and 90 KIAS on final and missed approach segments, or 90 KIAS for initial and intermediate segments and 70 KIAS on final and missed approach segments based on operational need. Refer to PANS-OPS, Volume II, Part IV, Chapter 1, “

AIR DEFENSE IDENTIFICATION ZONE (ADIZ) — The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

(Indonesia ADIZ Areas : S04°00' E104°00, S04°00 E117°00 – S10°00' E104°00, S10°00' E117°00')



AIRPORT SURVEILLANCE RADAR (ASR) — Approach control radar used to detect and display an aircraft’s position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles.

AIR TRAFFIC CONTROL CLEARANCE — An authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace.

AIR TRAFFIC CONTROL ASSIGNED AIRSPACE (ATCAA) — Airspace of defined vertical/lateral limits, assigned by ATC, for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic.

AIR TRAFFIC SERVICES (ATS) ROUTE — A specified route designated for channeling the flow of traffic as necessary for provision of air traffic services.

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

AIRWAY (ICAO) — A control area or portion thereof established in the form of a corridor equipped with radio navigation aids.

ALONG TRACK DISTANCE — The distance measured from a point-in-space by systems using area navigation reference capabilities that are not subject to slant range errors.

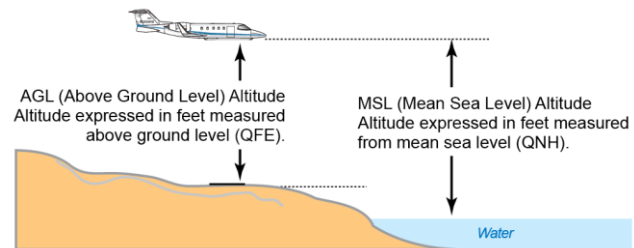
ALTERNATE AERODROME (ICAO) — An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing.

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

ALTIMETER SETTING — The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92 inches of mercury, 1013.2 hectopascals or 1013.2 millibars).

ALTITUDE — The vertical distance of a level, a point, or an object considered as a point, measured from Mean Sea Level (MSL).

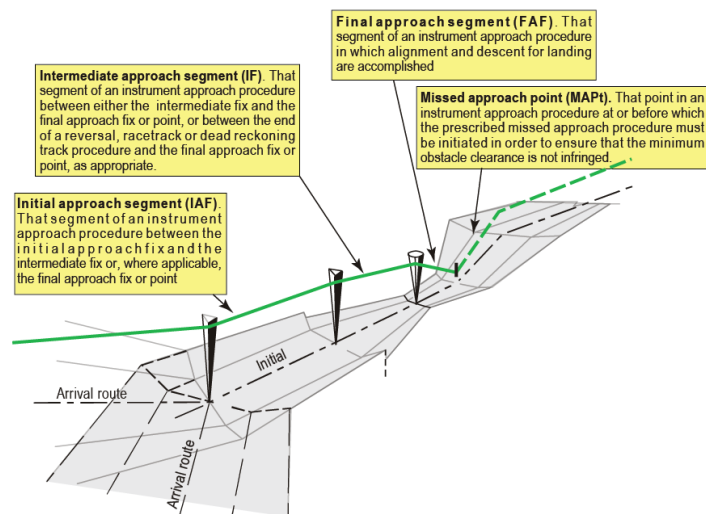
- **Indicated Altitude** — The Altitude as shown by an altimeter. On a pressure barometric altimeter instrument error and uncompensated for variation from standard atmospheric conditions.



APPROACH PROCEDURE WITH VERTICAL GUIDANCE (APV) — An instrument approach based on a navigation system that is not required to meet the precision approach standards of ICAO Annex 10 but provides course and glide path deviation information (sometimes referred to as “semi-precision”). Baro VNAV, LDA with glide path, LNAV/VNAV and LPV are examples of APV approaches.

APPROACH SEGMENTS — The Four Instrument approach segments are

1. Initial approach (IAF)
2. Intermediate approach (IF)
3. Final approach (FAF) and
4. Missed approach point (MAPt).



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.

AREA NAVIGATION (RNAV) — A method of navigation that permits aircraft operations on any desired course within the coverage of station referenced navigation signals or within the limits of self contained system capability.

AREA MINIMUM ALTITUDE (AMA) — The lowest altitude to be used under instrument meteorological conditions (IMC) that will provide a minimum vertical clearance of 300 m (1.000 ft) or in designated mountainous terrain 600 m (2.000 ft) above all obstacles located in the area specified, rounded up to the nearest (next higher) 30 m (100 ft).

ARRIVAL ROUTES — Routes on an instrument approach procedure by which aircraft may proceed from the en-route phase of flight to the initial approach fix.

ATIS - ASOS INTERFACE — A switch that allows ASOS weather observations to be appended to the ATIS broadcast, making weather information available on the same (ATIS) frequency H24. When the tower is open, ATIS information and the hourly weather will be broadcast. When the tower is closed, one-minute weather information updates are broadcast, and the controller can add overnight ATIS information to the ASOS automated voice weather message.

AUTOMATIC DEPENDENT SURVEILLANCE (ADS) — A surveillance technique, in which aircraft automatically provide, via a data link, data derived from on-board navigation and position fixing systems, including aircraft identification, four-dimensional position and additional data as appropriate.

AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS) — The Automated Surface Observation System, in the United States, is a surface weather observing system implemented by the National Weather Service, the Federal Aviation Administration and the Department of Defense. It is designed to support aviation operations and weather forecast activities. The ASOS provides continuous minute-by-minute observations and performs the basic observing functions necessary to generate an aviation routine weather report (METAR) and other aviation weather information. ASOS information may be transmitted over a discrete VHF radio frequency or the voice portion of a local navaid.

AUTOMATED WEATHER OBSERVING SYSTEM (AWOS) — An automated weather reporting system which transmits local real-time weather data directly to the pilot.

- AWOS-A Only reports altimeter setting.
- AWOS-1 Usually reports altimeter setting, wind data, temperature, dewpoint and density altitude.
- AWOS-2 Reports same as AWOS-1 plus visibility.
- AWOS-3 Reports the same as AWOS-2 plus cloud/ceiling data.

AUTOMATED WEATHER SENSOR SYSTEM (AWSS) — A surface weather observing system similar to AWOS and ASOS, providing all the weather information furnished by ASOS systems. The AWSS sensor suite automatically collects, measures, processes, and broadcasts surface weather data including altimeter setting, temperature and dew point, cloud height and coverage, visibility, present weather (rain, drizzle, snow), rain accumulation, freezing rain, thunderstorms, fog, mist, haze, freezing fog, as well as wind speed, direction, and gusts.

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 designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.

BRAKING ACTION (GOOD, FAIR, POOR, NIL) — A report of conditions on the airport movement area providing a pilot with a degree/quality of braking that might be expected. Braking action is reported in terms of good, fair, poor, or nil.

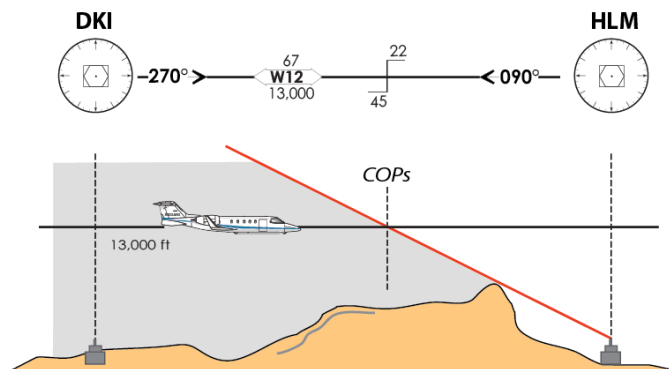
CARDINAL ALTITUDES OR FLIGHT LEVELS — “Odd” or “Even” thousand-foot altitudes or flight levels; e.g., 5000, 6000, 7000, FL60, FL250, FL260, FL270.

CATCH POINT — A fix/waypoint that serves as a transition point from the high altitude waypoint navigation structure to the low altitude structure or an arrival procedure (STAR).

CEILING (ICAO) — The height above the ground or water of the base of the lowest layer of cloud below 6000 meters (20,000 feet) covering more than half the sky.

CHANGEOVER POINTS — COP (Change Over Point) between two stations is indicated by mileages from the station to the point of change.

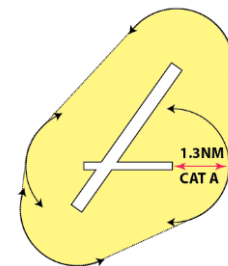
When flying airways, pilots normally change frequencies midway between navigation aids, although there are times when this is not practical. If the navigation signals cannot be received from the second VOR at the midpoint of the route, a changeover point (COP) is depicted and shows the distance in NM to each NAVAID,



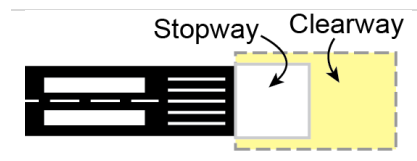
CIRCLING APPROACH — An extension of an instrument approach procedure which provides for visual circling of the aerodrome prior to landing

Visual Maneuvering Area for Circling Approach

Aircraft Category	Maneuvering Speed (kt)	Arc Radius
A	Speed to < 90	1.3 NM
B	91 to 120	1.5 NM
C	121 to 140	1.7 NM
D	41 to 165	2.3 NM
E	Speed over 165	4.5 NM



CLEARWAY (CWY) — A defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aero-plane may make a portion of its initial climb to a specified height.



COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) (USA) — A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an uncontrolled airport. The CTAF may be a UNICOM, Multicom, FSS, or tower frequency.

COMMUNITY AERODROME RADIO STATION (CARS) — An aerodrome radio that provides weather, field conditions, accepts flight plans and position reports.

COMPULSORY REPORTING POINTS — Reporting points which must be reported to ATC. They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by ATC that their aircraft is in "radar contact."

CONTROL AREA (ICAO) — A controlled airspace extending upwards from a specified limit above the earth.

CONTROLLED AIRSPACE — An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

NOTE: Controlled airspace is a generic term which covers ATS airspace Classes "A", "B", "C", "D", and "E".

CONTROL ZONE (ICAO) — A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

CONTOUR LINE — A line on a map or chart connecting points of equal elevation, On Sectionals, Indoavis basic contours are spaced at 500' and 1000' intervals.

COURSE —

- The intended direction of flight in the horizontal plane measured in degrees from north.
- The ILS localizer signal pattern usually specified as front course or back course.
- The intended track along a straight, curved, or segmented MLS path.

CRITICAL HEIGHT— Lowest height in relation to an aerodrome specified level below which an approach procedure cannot be continued in a safe manner solely by the aid of instruments.

DECISION ALTITUDE/HEIGHT (DA/H) — A specified altitude or height (A/H) in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

NOTE:

- a. *Decision altitude (DA) is referenced to mean sea level (MSL) and decision height (DH) is referenced to the threshold elevation.*
- b. *The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.*

DESCENT ANGLE PARAMETERS — The range of acceptable descent angles applicable to non-precision approaches is 2.75°(MINIMUM)-3.77° (MAXIMUM). The preferred range is 2.75°-3.50°. The OPTIMUM angle is 3.00°.

DIRECT ROUTE — A requested route published on a INDOAVIS Enroute or Area chart to assist pilots who have previous knowledge of acceptance of these routes by ATC. Use of a Direct route may require prior ATC approval and may not provide ATC or Advisory services, or be acceptable in flight plans.

DISPLACED THRESHOLD — A threshold that is located at a point on the runway other than the designated beginning of the runway.

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

ENROUTE FLIGHT ADVISORY SERVICE (FLIGHT WATCH) — A service specifically designed to provide, upon pilot request, timely weather information pertinent to the type of flight, intended route of flight, and altitude. The FSSs providing this service are indicated on INDOAVIS Enroute and Area charts.

FEEDER FIX — The fix depicted on instrument approach procedure charts which establishes the starting point of the feeder route.

FEEDER ROUTE — Routes depicted on instrument approach procedure charts to designate routes for aircraft to proceed from the en-route structure to the initial approach fix (IAF).

FINAL APPROACH AND TAKE-OFF AREA (FATO) — A defined area over which the final phase of the approach maneuver to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take-off area available.

FINAL APPROACH COURSE — A published MLS course, a straight line extension of a localizer, a final approach radial/bearing, or a runway centerline all without regard to distance.

FINAL APPROACH (ICAO) — That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified,

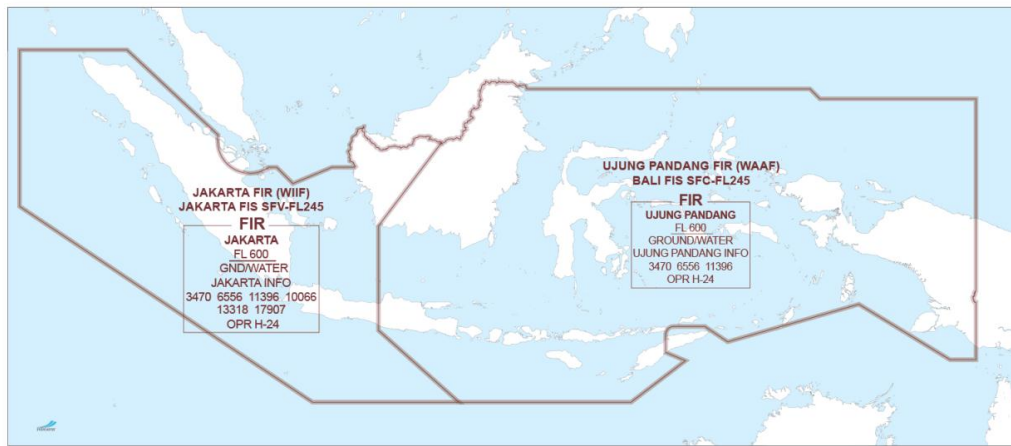
- a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or
- b) at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which:
 - 1) a landing can be made; or
 - 2) a missed approach procedure is initiated

FINAL APPROACH FIX OR POINT (FAF) — That fix or point of an instrument approach procedure where the final approach segment commences.

FINAL APPROACH SEGMENT — That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

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



Indonesia (Jakarta FIR and Ujung Pandang FIR)

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

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

- when set to a QNH altimeter setting, will indicate altitude;
- when set to a QFE altimeter setting, will indicate height above the QFE reference datum;
- when set to a pressure of 1 013.2 hPa, may be used to indicate flight levels.

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

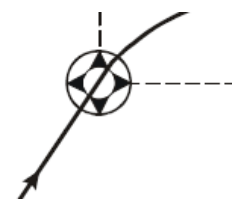
FLY-BY WAYPOINT —

A waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure.



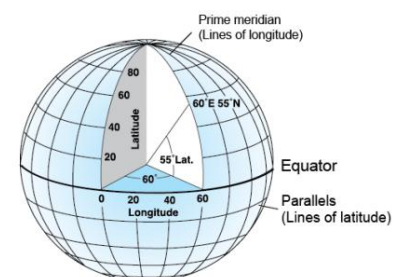
FLY-OVER WAYPOINT —

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



GEODETTIC DATUM — A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.

GEOGRAPHIC COORDINATE (Position) — A geographic coordinate system (GCS) defines locations on the earth using a three-dimensional spherical surface. A GCS includes an angular unit of measure, a prime meridian, and a datum (based on a spheroid). A feature is referenced by its longitude and latitude values. Longitude and latitude are angles measured from the earth's center to a point on the earth's surface. The angles are measured in degrees (or in grads).



GLIDE PATH (ICAO) / GLIDE SLOPE (GS) — A descent profile determined for vertical guidance during a final approach.

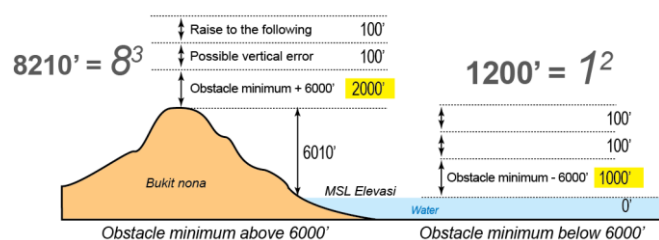
- Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS/MLS; or
- Visual ground aids, such as VASI, which provide vertical guidance for a VFR approach or for the visual portion of an instrument approach and landing.
- PAR, used by ATC to inform an aircraft making a PAR approach of its vertical position (elevation) relative to the descent profile.

GLIDE SLOPE / GLIDE PATH INTERCEPT ALTITUDE — The minimum altitude to intercept the glide slope/path on a precision approach. The intersection of the published intercept altitude with the glide slope/path, designated on INDOAVIS Terminal charts by the start of the glide slope/path symbol, is the precision FAF; however, when ATC directs a lower altitude, the resultant lower intercept position is then the FAF.

GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) — An “umbrella” term adopted by the International Civil Aviation Organization (ICAO) to encompass any independent satellite navigation system used by a pilot to perform onboard position determinations from the satellite data.

GLOBAL POSITIONING SYSTEM (GPS) — A space-based radio positioning, navigation, and time-transfer system. The system provides highly accurate position and velocity information, and precise time, on a continuous global basis, to an unlimited number of properly equipped users. The system is unaffected by weather, and provides a worldwide common grid reference system. The GPS concept is predicated upon accurate and continuous knowledge of the spatial position of each satellite in the system with respect to time and distance from a transmitting satellite to the user.

GRID MINIMUM OFFROUTE ALTITUDE (Grid MORA) — An altitude derived by INDOAVIS or provided by State Authorities. The Grid MORA altitude provides terrain and man-made structure clearance within the section outlined by latitude and longitude lines. MORA does not provide for navigation aid signal coverage or communication coverage.



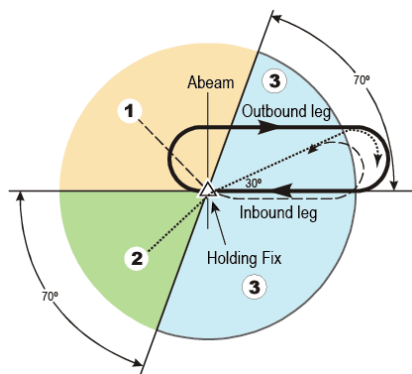
- Grid MORA values derived by INDOAVIS clear all terrain and man-made structures by 1000 feet in areas where the highest elevations are 6000 feet MSL or lower. MORA values clear all terrain and man-made structures by 2000 feet in areas where the highest elevations are 6001 feet MSL or higher. When a Grid MORA is shown as “Un-surveyed” it is due to incomplete or insufficient information.

HEIGHT ABOVE AIRPORT (HAA) — The height of the Minimum Descent Altitude (MDA) above the published airport elevation. This is published in conjunction with circling minimums.

HEIGHT ABOVE TOUCHDOWN (HAT) — The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone of the runway. HAT is published on instrument approach charts in conjunction with all straight-in minimums.

HIGH FREQUENCY COMMUNICATIONS — High radio frequencies (HF) between 3 and 30 MHz used for air-to-ground voice communication in overseas operations.

HOLDING PROCEDURE — A predetermined maneuver which keeps aircraft within a specified airspace while awaiting further clearance from air traffic control. Also used during ground operations to keep aircraft within a specified area or at a specified point while awaiting further clearance from air traffic control.



ENTRY HOLDING (RIGHT TURNS)

1. Parallel Entry

- Upon reaching the fix, turn onto the outbound heading of the holding pattern for the appropriate period of time (1 minute or 1.5 minutes, depending on altitude)
- Turn left to intercept the inbound track or return directly to the fix
- On the second arrival over the fix, turn right and follow the holding pattern

2. Offset Entry

- Upon reaching the fix, turn to a heading that results in a track having an angle of 30° or less from the inbound track reciprocal on the holding side
- Continue for the appropriate period of time (1 or 1.5 minutes based on altitude), then turn right to intercept the inbound track and follow the holding pattern

3. Direct Entry

Upon reaching the fix, turn right and follow the holding pattern

IATA AIRPORT CODE — An IATA airport code, also known as an IATA location identifier, IATA station code or simply a location identifier, is a three-letter code designating many airports around the world, defined by the International Air Transport Association (IATA). The characters prominently displayed on baggage tags attached at airport check-in desks are an example of a way these codes are used.

Example IATA Code

CGK	= Soekarno Hatta, Cengkareng
HLP	= Halim Perdana kusuma, Jakarta
SUB	= Juanda, Surabaya

ICAO AIRPORT CODE — airport code or location indicator is a four-letter alphanumeric code designating each airport around the world. These codes are defined by the International Civil Aviation Organization, and published in ICAO Document 7910: (*Location Indicators*).



Map of world regions classified according to the first letter of the ICAO airport code. (Indonesia is "W")

Example ICAO Code

WIII	= Soekarno Hatta
WIHH	= Halim Perdana kusuma
WARR	= Juanda

ICAO (INTERNATIONAL CIVIL AVIATION ORGANIZATION) — A specialized agency of the United Nations whose objective is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport.



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INDOAVIS (Indoavis Nusantara) — A specialized company of the Indonesia whose objective is to develop the techniques of Aeronautical air navigation services.

The first company in Indonesia which specializes in the field of geo-informatics and Aeronautical Navigation Support / Services

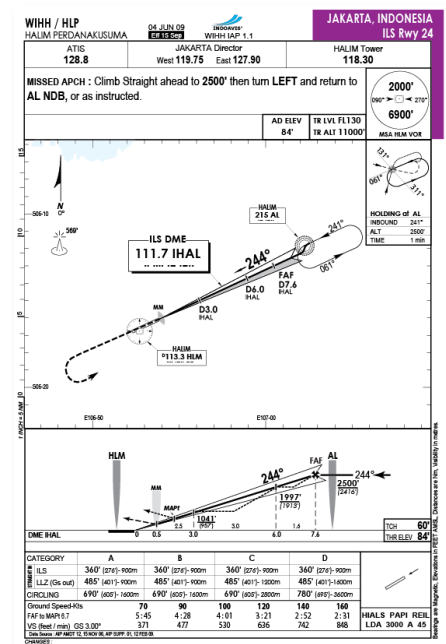
ILS (INSTRUMENT LANDING SYSTEM) CATEGORIES (ICAO) —

- a. ILS Category I — An ILS approach procedure which provides for an approach to a decision height not lower than 200 feet (60m) and a visibility not less than 2400 feet (800m) or a runway visual range not less than 1800 feet (550m).
- b. ILS Category II (Special authorization required)
 - a. An ILS approach procedure which provides for an approach to a decision height lower than 200 feet (60m) but not lower than 100 feet (30m) and a runway visual range not less than 1200 feet (350m).
- c. ILS Category III (Special authorization required)
 - a. IIIA - An ILS approach procedure which provides for approach with either a decision height lower than 100ft (30m) or with no decision height and with a runway visual range of not less than 700ft (200m).
 - b. IIIB - An ILS approach procedure which provides for approach with either a decision height lower than 50ft (15m) or with no decision height and with a runway visual range of less than 700 ft (200m) but not less than 150ft (50m).
 - c. IIIC - An ILS approach procedure which provides for approach with no decision height and no runway visual range limitations.
- d. Some areas require special authorization for ILS Category I approaches. In these areas, an additional category of approach called ILS is available without special authorization. These ILS approaches have minimums higher than a decision height of 200 feet and a runway visual range value of 2600 feet. INDOAVIS approach charts, at these locations, will have a notation in the chart heading or in the minimum box titles.

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

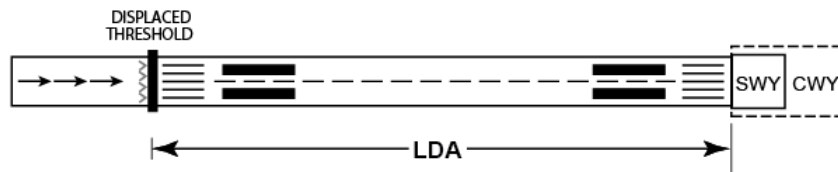
- Non-precision approach (NPA) procedure. An instrument approach procedure which utilizes lateral guidance but does not utilize vertical guidance.
- Approach procedure with vertical guidance (APV). An instrument approach procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.
- Precision approach (PA) procedure. An instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.
- Note.- Lateral and vertical guidance refers to the guidance provided either by:
 - a ground-based navigation aid; or
 - computer-generated navigation data.




INTERNATIONAL AIRPORT (ICAO) — Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

LAND AND HOLD SHORT OPERATIONS — Operations which include simultaneous takeoffs and landings and/or simultaneous landings when a landing aircraft is able and is instructed by the controller to hold short of the intersecting runway / taxiway or designated hold short point. Pilots are expected to promptly inform the controller if the hold short clearance cannot be accepted.

LANDING DISTANCE AVAILABLE (LDA) (ICAO) — The length of runway which is declared available and suitable for the ground run of an airplane landing.



LANDING MINIMA — The speed table related aircraft approach speeds to the rate of descent for ILS glide slope (descen in feet per minutes). For non-precision approach it related speed to the distance show from the final approach point (FAP) or other specified fix to the missed approach point (MAPt).

CATEGORY	A	B	C	D			
ILS	360' (276)-900m	360' (276)-900m	360' (276)-900m	360' (276)-900m			
LLZ (Gs out)	485' (401)-900m	485' (401)-900m	485' (401)-1200m	485' (401)-1600m			
CIRCLING MDA(H)	690' (605)-1600m	690' (605)-1600m	690' (605)-2800m	780' (695)-3600m			
Ground Speed-Kts	70	90	100	120	140	160	HIALS PAPI REIL LDA 2800 A 45
FAP to MAPt 6.7	5:45	4:28	4:01	3:21	2:52	2:31	
VIS (feet / min) GS 3"	377	484	538	646	853	861	

Data Source: AIP AMDT 12, 14, 15 NOV 06.
Change: Jakarta Appch. Freq, Instr. Appch. Minima.

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- A, B, C, D** Aircraft categories
- ILS** ILS Decision altitude (DA)
- LLZ (GS out)** Localizer approach (ILS without GS)
- 360'** Minimum Descent Altitude (MDA) MSL Altitude
- (276)** LLZ-Height above Runway at minimum Descent Altitude (HAT Height Above Touchdown)
- 900m** Ground Visibility in metres or kilometre
- CIRCLING** Circling landing minimum application for all runway
- MDA(H)** Minimum Descen Altitude (Height)
- FAP / FAF** Beginning of final approach segment (precision approach) FAP (ICAO) / FAF (US)
- VIS** Visibility
- RVR** Runway Visual Range

LATERAL NAVIGATION (LNAV) — LNAV minimums are for lateral navigation only, and the approach minimum altitude will be published as a minimum descent altitude (MDA). LNAV provides the same level of service as the present GPS stand-alone approaches. LNAV minimums support the following navigation systems: WAAS, when the navigation solution will not support vertical navigation; and, GPS navigation systems which are presently authorized to conduct GPS/GNSS approaches.

LOCAL AIRPORT ADVISORY — A service provided by flight service stations or the military at airports not serviced by an operating control tower. This service consists of providing information to arriving and departing aircraft concerning wind direction and speed, favored runway, altimeter setting, pertinent known traffic, pertinent known field conditions, airport taxi routes and traffic patterns, and authorized instrument approach procedures. This information is advisory in nature and does not constitute an ATC clearance.

LOCALIZER PERFORMANCE WITH VERTICAL GUIDANCE (LPV) — Identifies the APV minimums that incorporate electronic lateral and vertical guidance. The lateral guidance is equivalent to localizer, and the protected area is considerably smaller than the protected area for the present LNAV and LNAV/VNAV lateral protection. Aircraft can fly these minimums with a statement in the Aircraft Flight Manual (AFM) that the installed equipment supports LPV approaches. This includes Class 3 and 4 TSO-C146 WAAS equipment, and future LAAS equipment.

LOW FREQUENCY (LF) — The frequency band between 30 and 300 kHz.

MAGNETIC VARIATION — The orientation of a horizontal magnetic compass with respect to true north. Because there is a continuous small change of direction of lines of magnetic force over the surface of the earth, magnetic variation at most locations is not constant over long periods of time.

MANDATORY ALTITUDE — An altitude depicted on an instrument approach procedure chart requiring the aircraft to maintain altitude at the depicted value.

MANDATORY FREQUENCY (MF) — A frequency designated at selected airports that are uncontrolled during certain hours only. Aircraft operating within the designated MF Area, normally 5 NM radius of the

airport, must be equipped with a functioning radio capable of maintaining two-way communications. INDOAVIS charts list the MF frequency and the area when other than the standard 5 NM.

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

MARKING — A symbol or group of symbols displayed on the surface of the movement area in order to convey aeronautical information.

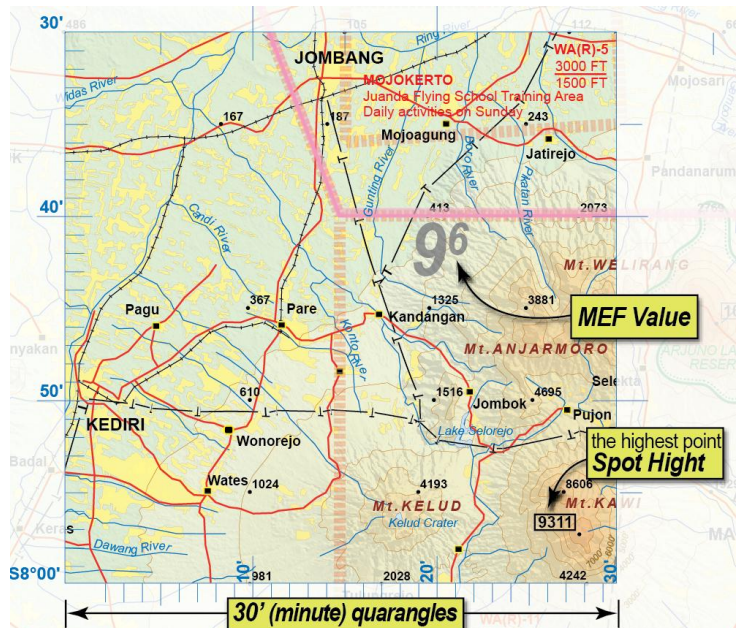
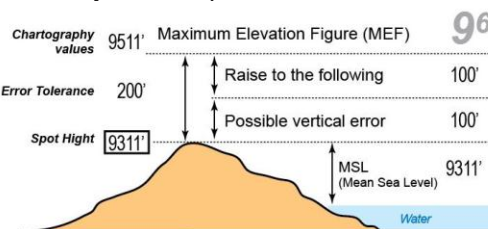
MAXIMUM AUTHORIZED ALTITUDE (MAA) — A published altitude representing the maximum usable altitude or flight level for an airspace structure or route segment.

MAXIMUM ELEVATION FIGURE (MEF)

MEF is The Maximum Elevation Figure shown in quadrangles bounded by ticked lines of latitude and longitude are represented in THOUSAND & HUNDREDS of feet above mean sea level.

Example 9311 feet **9⁶**

The MEF is based on information available concerning the highest known feature and additional of (Possible vertical error and raise to the following 100 feet level) in each quadrangle, including terrain and obstructions (trees, towers, antennas, etc). In areas of extensive unreliable relief the MEF is shown by a note spread across the area

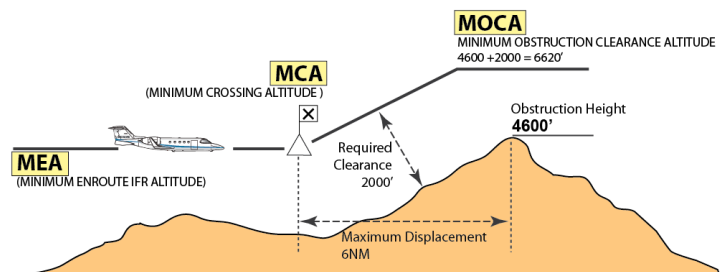


Examples of Indoavis SAC (Sectional Navigation Chart) Scale 1:500.000 map in one quadrant of latitude longitude coordinates of lines each 30' Minutes and for ONC (Operational Navigation Chart) Scale 1:1.000.000 quadrant of latitude longitude coordinates of lines each 1° Degree

MEDIUM FREQUENCY (MF) — The frequencies between 300 kHz and 3 MHz.

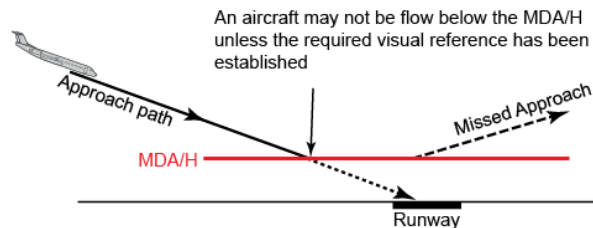
MINIMUM CROSSING ALTITUDE (MCA)

— The lowest altitude at certain fixes at which an aircraft must cross when proceeding in the direction of a higher minimum en-route IFR altitude (MEA).



MINIMUM DESCENT ALTITUDE/HEIGHT (MDA/H)

— A specified altitude or height in a non-precision approach or circling approach below which descent may not be made without visual reference



MINIMUM ENROUTE IFR ALTITUDE (MEA) — The lowest published altitude between radio fixes that meets obstacle clearance requirements between those fixes and in many countries assures acceptable navigational signal coverage. The MEA applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

MINIMUM OBSTRUCTION CLEARANCE ALTITUDE (MOCA) — The lowest published altitude in effect between radio fixes on VOR airways, off airway routes, or route segments which meets obstacle clearance requirements for the entire route segment and in the USA assures acceptable navigational signal coverage only within 22 nautical miles of a VOR.

MINIMUM OFF-ROUTE ALTITUDE (MORA) — The MORA provides known obstruction clearance 10 NM either side of the route centerline including a 10 NM radius beyond the radio fix reporting or mileage break defining the route segment. For terrain and man-made structure clearance refer to Grid MORA.

MINIMUM RECEPTION ALTITUDE (MRA) — The lowest altitude at which an intersection can be determined.

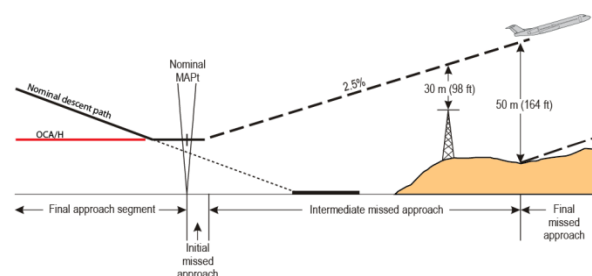
MINIMUM SECTOR ALTITUDE (MSA) Altitude depicted on an instrument approach chart and identified as the minimum safe altitude which provides 1000 feet of obstacle clearance within a 25NM radius from the navigational facility upon which the MSA is predicated. If the radius limit is other than 25 NM, it is stated. This altitude is for EMERGENCY USE ONLY and does not necessarily guarantee Navaid reception. When the MSA is divided into sectors, with each sector a different altitude, the altitudes in these sectors are referred to as “minimum sector altitudes”.



MINIMUM VECTORING ALTITUDE (MVA) — The lowest MSL altitude at which an IFR aircraft will be vectored by a radar controller, except as otherwise authorized for radar approaches, departures and missed approaches. The altitude meets IFR obstacle clearance criteria. It may be lower than the published MEA along an airway or J-route segment. It may be utilized for radar vectoring only upon the controller's determination that an adequate radar return is being received from the aircraft being controlled. Charts depicting minimum vectoring altitudes are normally available only to the controllers, not to pilots.

MISSED APPROACH POINT (MAP) (ICAO) — That point in an instrument approach procedure at or before which the prescribed missed approach procedure must be initiated in order to ensure that the minimum obstacle clearance is not infringed.

- A manoeuvre conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP.
- A term used by the pilot to inform ATC that he/she is executing the missed approach.
- At locations where ATC radar service is provided the pilot should conform to radar vectors, when provided by ATC, in lieu of the published missed approach procedure.



MOUNTAINOUS AREA (ICAO) — An area of changing terrain profile where the changes of terrain elevation exceed 3000 feet (900m) within a distance of 10 NM.

NON - PRECISION APPROACH PROCEDURE — A standard instrument approach procedure in which no electronic glideslope is provided; e.g., VOR, TACAN, NDB, LOC, ASR, LDA, or SDF approaches.

NO PROCEDURE TURN (NoPT) — No procedure turn is required nor authorized.

OBSTACLE CLEARANCE ALTITUDE (OCA)/H — The lowest altitude (OCA), or alternatively the lowest height above the elevation of the relevant runway threshold or above the aerodrome elevation as applicable (OCH), used in establishing compliance with the appropriate obstacle clearance criteria.

- **Note 1.**— *Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.*
- **Note 2.**— *For convenience when both expressions are used they may be written in the form “obstacle clearance altitude/height” and abbreviated “OCA/H”.*

OBSTACLE LIMITATION SURFACE (OLS) — The Obstacle Limitation Surfaces (OLS) are a series of surfaces that define the limits to which objects may project into the airspace.

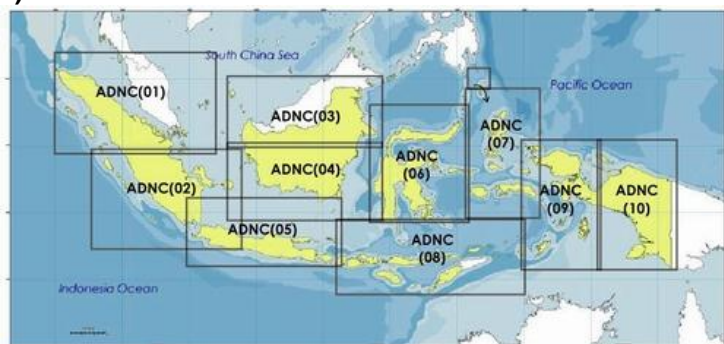
The OLS comprises the following:

- | | |
|--|------------------------------|
| • Transitional surface | • Outer horizontal surface |
| • Approach surface/ Take-off climb surface | • Inner approach surface |
| • Inner horizontal surface | • Inner transitional surface |
| • Conical surface | • Balked landing surface |

OBSTRUCTION CLEARANCE LIMIT (OCL) — The height above aerodrome elevation below which the minimum prescribed vertical clearance cannot be maintained either on approach or in the event of a missed approach.

OPERATIONAL NAVIGATION CHART (ONC)

— The ONC is the standard worldwide small- scale (1: 1,000,000) aeronautical chart series, and contains cartographic data with an aeronautical overprint depicting obstructions, aerodromes, special use airspace, navigational aides, Maximum Elevation Figures (MEFs), and related data. Because of scale, some features, including obstructions, are generalized in developed regions. Designed for medium altitude high- speed visual and radar navigation



Coverage of the Indoavis Operational Navigation Charts for Indonesia and surrounding countries

PITCH POINT— A fix/waypoint that serves as a transition point from a departure procedure or the low altitude ground-based navigation structure into the high altitude waypoint system.

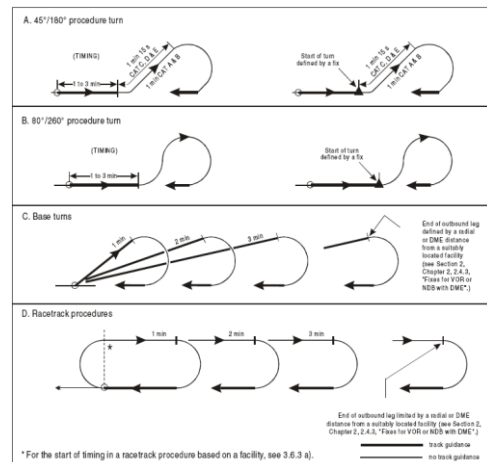
PRECISION APPROACH PROCEDURE — A standard instrument approach procedure in which an electronic glideslope / glidepath is provided; e.g., ILS, MLS, PAR.

PROCEDURE ALTITUDES — Are recommended altitudes developed in coordination with Air Traffic Control requirements to accommodate a stabilized descent profile on a prescribed descent angle on the final approach course and sometimes also in the intermediate approach segment. Procedure altitudes are never less than segment minimum safe altitudes.

PROCEDURE TURN (PT) (ICAO) — A manoeuvre 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:

- a. Procedure turns are designated “left” or “right” according to the direction of the initial turn.
- b. Procedure turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual approach procedure.



PROCEDURE TURN (PT) (USA) — The maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course. The outbound course, direction of turn, distance within which the turn must be completed, and minimum altitude are specified in the procedure. However, unless otherwise restricted, the point at which the turn may be commenced and the type and rate of turn are at the discretion of the pilot.

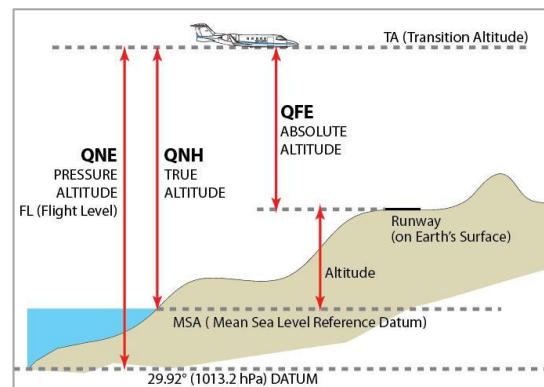
PROCEDURE TURN INBOUND — That point of a procedure turn manoeuvre where course reversal has been completed and an aircraft is established inbound on the intermediate approach segment or final approach course. A report of “procedure turn inbound” is normally used by ATC as a position report for separation purposes.

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

QFE — Height above airport elevation (or runway threshold elevation) based on local station pressure.

QNE — Altimeter setting 29.92 inches of mercury, 1013.2 hectopascals or 1013.2 millibars.

QNH — Altitude above mean sea level based on local station pressure.



Quality assurance — All the planned and systematic activities implemented within the quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfil requirements for quality (ISO 8402*).

Quality control — The operational techniques and activities that are used to fulfill requirements for quality (ISO 8402*).

RACETRACK PROCEDURE — A procedure designed to enable the aircraft to reduce altitude during the initial approach segment and/or establish the aircraft inbound when the entry into a reversal procedure is not practical.

RADAR WEATHER ECHO INTENSITY LEVELS — Existing radar systems cannot detect turbulence. However, there is a direct correlation between the degree of turbulence and other weather features associated with thunderstorms and the radar weather echo intensity. The National Weather Service has categorized radar weather echo intensity for precipitation into six levels. These levels are sometimes expressed during communications as “VIP LEVEL” 1 through 6 (derived from the component of the radar

that produces the information — Video Integrator and Processor). The following list gives the “VIP LEVELS” in relation to the precipitation intensity within a thunderstorm :

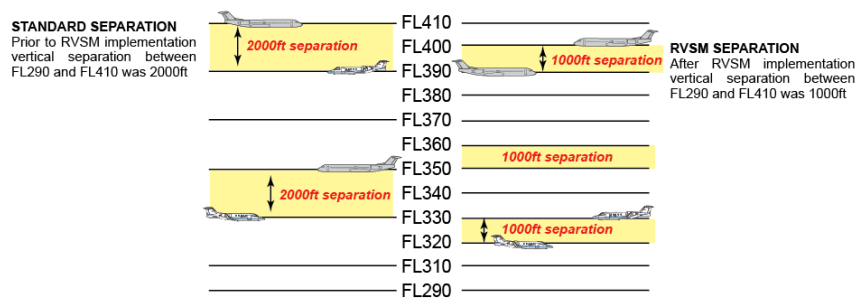
- Level 1. WEAK
- Level 2. MODERATE
- Level 3. STRONG
- Level 4. VERY STRONG
- Level 5. INTENSE
- Level 6. EXTREME

RADIO ALTIMETER / RADAR ALTIMETER — Aircraft equipment which makes use of the reflection of radio waves from the ground to determine the height of the aircraft above the surface.

RAPID EXIT TAXIWAY (ICAO) — A taxiway connected to a runway at an acute angle and designed to allow landing airplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

REDUCED VERTICAL SEPARATION MINIMUMS (RVSM) —

A reduction in the vertical separation between flight levels 290 – 410 from 2000 to 1000 feet



RELIEF — The inequalities in elevation of the surface of the Earth represented on aeronautical charts by contours, hypsometric tints, shading or spot elevations.

REQUIRED NAVIGATION PERFORMANCE (RNP) — A statement of navigation position accuracy necessary for operation within a defined airspace. RNP is performance-based and not dependent on a specific piece of equipment. RNP includes a descriptive number, the value being an indicator of the size of the containment area (e.g., RNP-0.3, RNP-1, RNP-3, etc.).

RNAV APPROACH — An instrument approach procedure which relies on aircraft area navigation equipment for navigation guidance.

ROUTE MINIMUM OFF-ROUTE ALTITUDE (Route MORA) — This is an altitude derived by INDOAVIS. The Route MORA altitude provides reference point clearance within 10 NM of the route centerline (regardless of the route width) and end fixes. Route MORA values clear all reference points by 1000 feet in areas where the highest reference points are 5000 feet MSL or lower. Route MORA values clear all reference points by 2000 feet in areas where the highest reference points is 5001 feet MSL or higher. When a Route MORA is shown along a route as “unknown” it is due to incomplete or insufficient information.

RUNWAY EDGE LIGHTS — Are provided for a runway intended for use at night or for a precision approach runway intended for use by day or night. Runway edge lights shall be fixed lights showing variable white, except that:

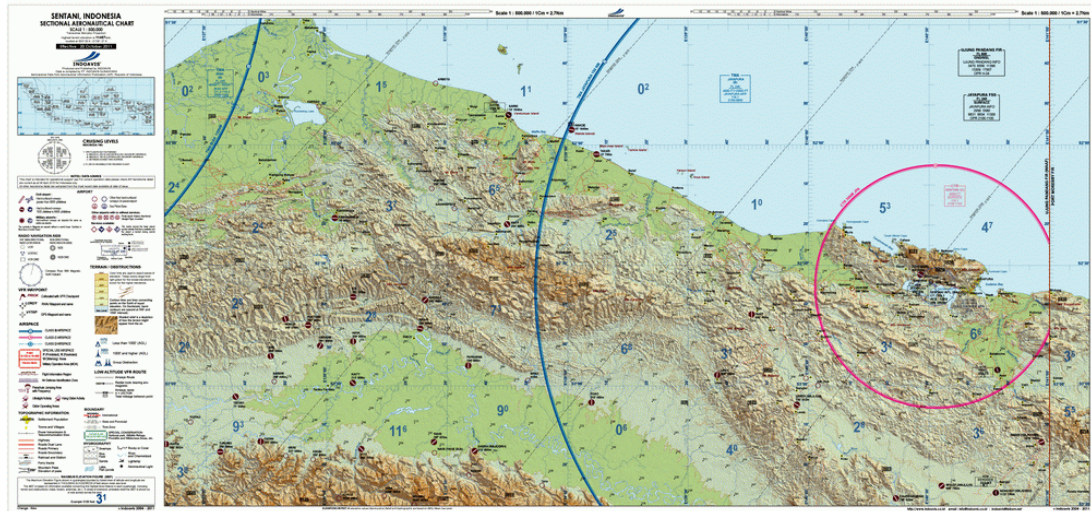
- a. in the case of a displaced threshold, the lights between the beginning of the runway and the displaced threshold shall show red in the approach direction; and
- b. a section of the lights 600m or one-third of the runway length, whichever is the less, at the remote end of the runway from the end at which the takeoff run is started, may show yellow.

RUNWAY MARKINGS —

- a. Basic marking — Markings on runways used for operations under visual flight rules consisting of centerline markings and runway direction numbers and, if required, letters.
- b. Instrument marking — Markings on runways served by non visual navigation aids and intended for landings under instrument weather conditions, consisting of basic marking plus threshold markings.
- c. All-weather (precision instrument) marking.

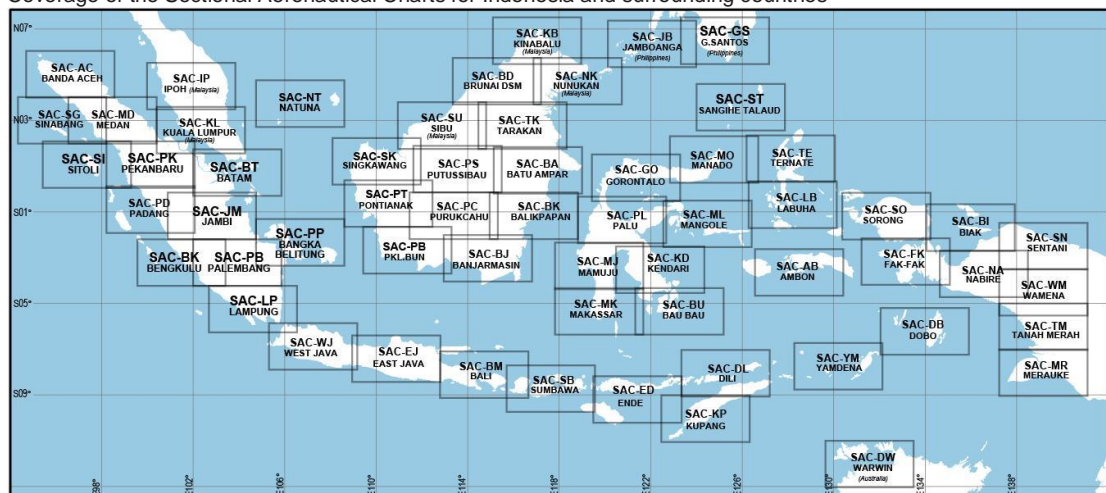
RUNWAY END SAFETY AREA (RESA) — are designated areas at each end of the runway intended to minimize the risk of damage to an aeroplane where an aeroplane overruns or undershoots a runway. The RESA is beyond and in addition to the runway strip.

SECTIONAL AERONAUTICAL CHART (SAC) 1:500.000 — is the standard aviation medium-scale aeronautical chart series. The SAC and other aeronautical navigation and planning charts provide essential cartographic data appropriate to scale, and are overprinted with stable aeronautical information such as obstructions, aerodromes, special use airspace, navigational aids, Maximum Elevation Figures (MEFs), and related data.



- **DATA DENSITY/SCALE:** 1:500,000
- **CONTENT:** Cartographic data with aeronautical overprint depicting obstructions, aerodromes, special use airspace, navigational aids and related data. Because of scale, some features, including obstructions, are generalized in developed regions (only the highest obstruction within ticked area or urban quadrant is shown).
- **MEDIA:** Paper chart (100 Cm x 50 Cm)
- **AREA COVERAGE:** All navigationally significant land masses Indonesia. Generally, are associated with each Operational Navigation Chart (ONC). SACs may substitute for larger scale products when the larger standard scale provides no appreciable increase in detail.

Coverage of the Sectional Aeronautical Charts for Indonesia and surrounding countries



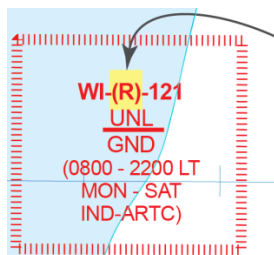
- **APPLICATIONS:** Designed for very low-altitude (below 500 feet above ground level) through medium-altitude high-speed visual and radar navigation. Also used for mission planning/analysis and intelligence briefings, and are source for navigational filmstrips, special purpose, and cockpit/visual display products.

SEGMENT MINIMUM ALTITUDE (SMA), or SEGMENT MINIMUM SAFE ALTITUDE (SMSA) — An altitude that provides minimum obstacle clearance in each segment of a non-precision approach. Segment minimum (safe) altitudes can be considered “do not descend below” altitudes and can be lower than *procedure* altitudes which are specifically developed to facilitate a constant rate or stabilized descent.

SELECTIVE CALL SYSTEM (SELCAL) — A system which permits the selective calling of individual aircraft over radiotelephone channels linking a ground station with the aircraft.

SIDESTEP MANEUVER — A visual maneuver accomplished by a pilot at the completion of an instrument approach to permit a straight-in landing on a parallel runway not more than 1200 feet to either side of the runway to which the instrument approach was conducted.

SPECIAL USE AIRSPACE — Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special use airspace are:



- (A) Alert
- (T) Training
- (C) Caution
- (W) Warning
- (D) Danger
- (P) Prohibited
- (R) Restricted
- (TRA) Temporary Reserved Airspace
- (TSA) Temporary Segregated Area
- (MOA) Military Operations Area

STANDARD INSTRUMENT ARRIVAL (STAR) — A designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

STANDARD INSTRUMENT DEPARTURE (SID) — A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified point, normally on a designated ATS route, at which the en-route phase of a flight commences.

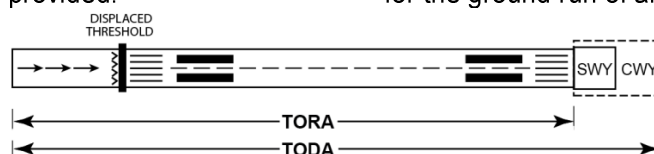
STATION DECLINATION — The orientation with respect to true north of VHF transmitted signals. The orientation is originally made to agree with the magnetic variation (an uncontrollable global phenomenon) at the site. Hence station declination (fixed by man) may differ from changed magnetic variation until the station is reoriented.

SUNSET AND SUNRISE — The mean solar times of sunset and sunrise as published in the Nautical Almanac, converted to local standard time for the locality concerned. Within Alaska, the end of evening civil twilight and the beginning of morning civil twilight, as defined for each locality.

SURVEILLANCE APPROACH (ASR) — An instrument approach wherein the air traffic controller issues instructions, for pilot compliance, based on aircraft position in relation to the final approach course (azimuth), and the distance (range) from the end of the runway as displayed on the controller’s radar scope. The controller will provide recommended altitudes on final approach if requested by the pilot.

TAKE-OFF DISTANCE AVAILABLE (TODA) — The length of the takeoff run available plus the length of the clearway, if provided.

TAKE-OFF RUN AVAILABLE (TORA) — The length of runway declared available and suitable for the ground run of an airplane taking off.



TERMINAL CONTROL AREA — A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

TERMINAL ARRIVAL ALTITUDE (TAA) — The lowest altitude that will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an arc of a circle defined by a 46-km (25 NM) radius centred on the initial approach fix (IAF), or where there is no IAF on the intermediate approach fix (IF), delimited by straight lines joining the extremity of the arc to the IF. The combined TAAs associated with an approach procedure shall account for an area of 360 degrees around the IF.

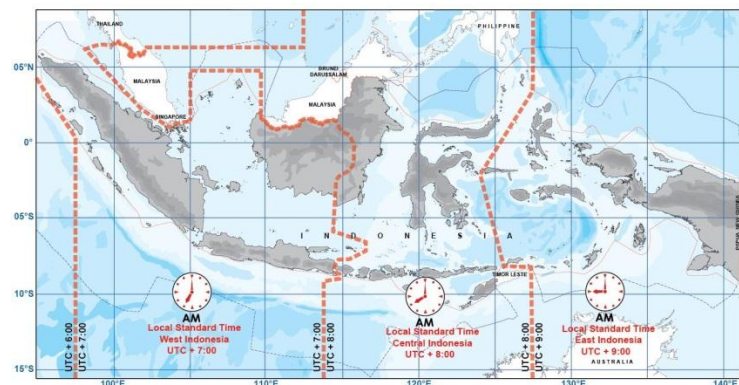
THRESHOLD — The beginning of that portion of the runway usable for landing and take-off.

THRESHOLD CROSSING HEIGHT — The theoretical height above the runway threshold at which the aircraft's glideslope antenna would be if the aircraft maintains the trajectory established by the mean ILS glideslope or MLS glidepath.

TIME ZONE - A day is defined as the time required for the Earth to make one complete rotation of 360°. Since the day is divided into 24 hours, the Earth revolves at the rate of 15° an hour.

Indonesia West = UTC + 7hr
Indonesia Center = UTC + 8hr
Indonesia East = UTC + 9hr

Indonesia Time zone

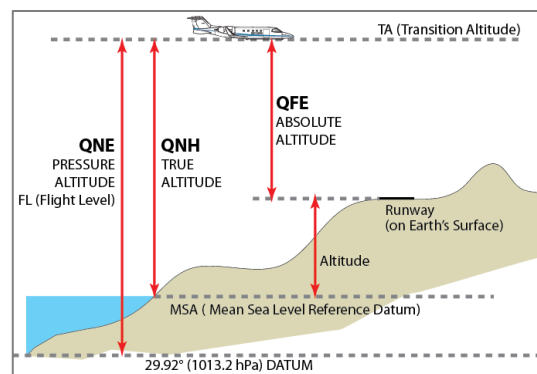


TOUCHDOWN ZONE ELEVATION (TDZE) — The highest elevation in the first 300' of the landing surface.

TRANSITION ALTITUDE (QNH) — The altitude in the vicinity of an airport at or below which the vertical position of an aircraft is controlled by reference to altitudes (MSL).

TRANSITION HEIGHT (QFE) — The height in the vicinity of an airport at or below which the vertical position of an aircraft is expressed in height above the airport reference datum.

TRANSITION LEVEL (QNE) — The lowest flight level available for use above the transition altitude.

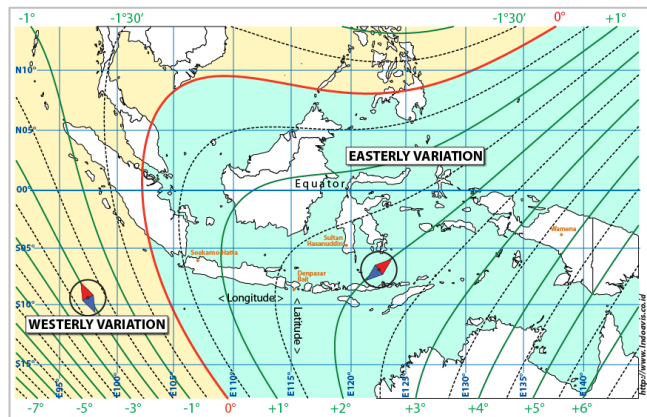


TRANSITION LAYER — The airspace between the transition altitude and the transition level. Aircraft descending through the transition layer will use altimeters set to local station pressure, while departing aircraft climbing through the layer will be using standard altimeter setting (QNE) of 29.92 inches of Mercury, 1013.2 millibars, or 1013.2 hectopascals.

VARIATION — Variation is the angle between True North and the direction indicated by a freely suspended compass needle, influenced only by the Earth's magnetic field. Variation is termed East or West according to whether magnetic North lies to the East or West of true North.

Sample of Indonesia Airport in Magnetic Variation :

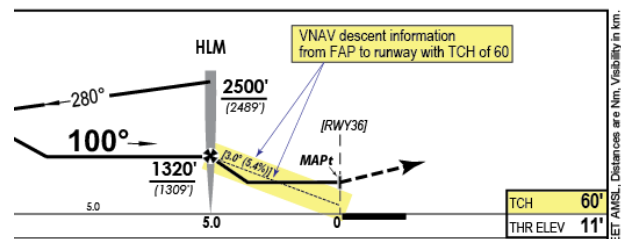
- WIII - Soekarno Hatta (Jakarta) is 0.38°
- WARJ - Adi Sutjipto (Yogyakarta) is 1.21°
- WAAA - S.Hasanuddin (Makassar) is 1.43°
- WAJW – Wamena (Papua) is 4°.



On the west coast of the Indonesia, the compass needle points to the east of true north; on the east coast, the compass needle points to the west of true north.

VERTICAL NAVIGATION (VNAV) — That function of RNAV equipment which provides guidance in the vertical plane

The descent angle shown on some non-precision approaches describing the geometric descent path from the Final approach point (FAP), or on occasion from an intervening step down fix, to the Threshold Crossing Height (TCH). This angle may or may not coincide with the angle projected by a Visual Glide Slope Indicator (VASI, PAPI, PLASI, etc.)



VISIBILITY — The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night.

- Flight Visibility — The visibility forward from the cockpit of an aircraft in flight.
- Ground Visibility — The visibility at an aerodrome as reported by an accredited observer.
- Runway Visual Range (RVR)— The range over which the pilot of an aircraft on the centerline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centerline.

VISUAL APPROACH (ICAO) — An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

VISUAL APPROACH (USA) — An approach conducted on an instrument flight rules (IFR) flight plan which authorizes the pilot to proceed visually and clear of clouds to the airport. The pilot must, at all times, have either the airport or the preceding aircraft in sight. This approach must be authorized and under the control of the appropriate air traffic control facility. Reported weather at the airport must be ceiling at or above 1000 feet and visibility of 3 miles or greater.

VISUAL DESCENT POINT (VDP) — A defined point on the final approach course of a non-precision straight-in approach procedure from which normal descent from the MDA to the runway touchdown point may be commenced, provided the approach threshold of that runway, or approach lights, or other markings identifiable with the approach end of that runway are clearly visible to the pilot.

WAYPOINT — A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation.

WEATHER SYSTEMS PROCESSOR (WSP) — An add-on weather processor to selected Airport Surveillance Radar (ASR)-9 facilities that adds Doppler weather radar capability and provides wind shear and microburst warnings. The system gives controllers timely and accurate warnings for relaying to pilots via radio communications. The WSP also provides controllers with thunderstorm cell locations and movement as well as the predicted future position and intensity of wind shifts that may affect airport operations. The system can also process precipitation data to reduce false severe weather reports caused by anomalous propagation.