AIR TRAFFIC SERVICES PLANNING MANUAL

PART V

TERMS AND REFERENCES
PART V

SECTION 1. TERMS AND ABBREVIATIONS
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Chapter 1
Glossary of Terms

1.1 INTRODUCTION

Terms which are defined in the ICAO Lexicon (Doc 9294) and the Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) are used in accordance with the meanings and usages given therein. However, there still remains a wide variety of terms throughout the world used to describe facilities, services, procedures and concepts for planning air traffic services (ATS). As far as possible, the terms used in this document, and defined below, are those which have the widest international use.

1.2 AIR TRAFFIC SERVICE TERMS

When the following terms are used in this manual, they have the following meanings:

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

Note.— See definition of Transferring unit/controller.

Acknowledgement. Notification that a given communication has been correctly received and understood.

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

Advisory airspace. A generic term meaning variously, advisory area(s) or advisory route(s).

Advisory area. A designated area within a flight information region where air traffic advisory service is available.

Advisory route. A route within a flight information region along which air traffic advisory service is available.

Note.— Air traffic control service provides a much more complete service than air traffic advisory service; advisory areas and routes are therefore not established within controlled airspace, but air traffic advisory service may be provided below and above control areas.

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.

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 taxi circuit. The specified path of aircraft on the manoeuvring area during specific wind conditions.

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.

Aerodrome traffic zone. An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.
Aeronautical fixed service (AFS). A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services.

Aeronautical fixed station. A station in the aeronautical fixed service.

Aeronautical ground light. Any light specially provided as an aid to air navigation, other than a light displayed on an aircraft.

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

Aeronautical mobile service. A radiocommunication service between aircraft stations and aeronautical stations, or between aircraft stations.

Aeronautical station. A land station in the aeronautical mobile service carrying on a service with aircraft stations. In certain instances, an aeronautical station may be placed on board a ship or an earth satellite.

Aeronautical telecommunication service. A telecommunication service provided for any aeronautical purpose.

Aeronautical telecommunication station. A station in the aeronautical telecommunication service.

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

AFIL. An alpha character group used to designate an air-filed flight plan.

Agreed reporting point. A point specified in the route description of a flight plan and agreed between the operator and the air traffic services unit to serve as a reporting point for the flight concerned.

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 call sign. A group of alphanumeric characters used to identify an aircraft in air-ground communication.

Aircraft Identification. A group of letters, figures or a combination thereof which is either identical to, or the coded equivalent of, the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications.

Aircraft observation. The evaluation of one or more meteorological elements made from an aircraft in flight.

Aircraft type designator. A group of alphanumeric characters used to identify, in an abbreviated form, a type of aircraft.

Air-filed flight plan (AFIL). A flight plan provided to an air traffic services unit by an aircraft during its flight.

Air-ground communication. Two-way communication between aircraft and stations or locations on the surface of the earth.

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

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

Air route facilities. Facilities provided to permit safe operation of aircraft along an air route, including visual and radio navigation aids for approach and landing at aerodromes, and communication services, meteorological services and air traffic services and facilities.

Airspace reservation. A defined volume of airspace normally under the jurisdiction of one aviation authority and temporarily reserved, by common agreement, for exclusive use by another aviation authority.

Airspace volume concept. A concept of controlled airspace organization which allows an aircraft operator complete freedom to manoeuvre within a designated airspace.

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

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

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

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

*Note 1.* For convenience, the term air traffic control clearance is frequently abbreviated to clearance when used in appropriate contexts.

*Note 2.* The abbreviated term clearance may be prefixed by the words taxi, take-off, departure, en route, approach or landing to indicate the particular portion of flight to which the air traffic control clearance relates.

**Air traffic control service.** A service provided for the purpose of:

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

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

**Air traffic service.** A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service, approach control service or aerodrome control service.

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

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

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

**Airway.** A control area or portion thereof established in the form of a corridor equipped with radio navigational aids.

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

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

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

**Alphanumeric characters (alphanumerics).** A collective term for letters and figures (digits).

**Alphanumeric display.** A presentation of letters and figures either on a radar display or on a separate screen or panel.

**Alternate aerodrome.** An aerodrome specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the aerodrome of intended landing.

*Note.* An alternate aerodrome may be the aerodrome of departure.

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

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

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

**Approach funnel.** A specified airspace around a nominal approach path within which an aircraft approaching to land is considered to be making a normal approach.

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

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

**Appropriate authority.**

1) Regarding flight over the high seas: The relevant authority of the State of Registry.
2) Regarding flight other than over the high seas: The relevant authority of the State having sovereignty over the territory being flown over.

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

**Apron management service.** A service provided to regulate the activities and movement of aircraft and vehicles on an apron.

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

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

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

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

**Assignment, assign.** Distribution (of frequencies) to stations. Distribution (of SSR codes) to aircraft.

**ATC loop.** An ordered cycle of information or data flow, computation, co-ordination, decision making, control and monitoring, which constitutes the complete function of an air traffic control unit.

**ATIS.** The symbol used to designate automatic terminal information service.

**ATS airspace.** Collective term for airspace within which one or more air traffic services are provided to aircraft.

**ATS route.** A specified route designed for channelling the flow of traffic as necessary for the 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.*

**Automatic terminal information service.** The provision of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts throughout the day or a specified portion of the day.

**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.*

**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.

**Blind velocity.** The radial velocity of a moving target such that the target is not seen on primary radars fitted with certain forms of fixed echo suppression.

**Bright display.** A radar display capable of being used under relatively high ambient light levels.

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

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

**Clearance function.** The formulation and transmission of a clearance by an air traffic control unit as well as the acknowledgement and acceptance of such clearance by the pilot.

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

**Clearance void time.** A time specified by an air traffic control unit at which a clearance ceases to be valid unless the aircraft concerned has already taken action to comply therewith.

**Code (SSR Code).** The number assigned to a particular multiple pulse reply signal transmitted by a transponder.

**Computer.** A device which performs sequences of arithmetical and logical steps upon data without human intervention.

*Note.— When the word computer is used in this document it may denote a computer complex, which includes one or more computers and peripheral equipment.*
Conference communications. Communication facilities whereby direct-speech conversation may be conducted between three or more locations simultaneously.

Conflict. Predicted converging of aircraft in space and time which constitutes a violation of a given set of separation minima.

Conflict detection. The discovery of a conflict as a result of a conflict search.

Conflict resolution. The determination of alternative flight paths which would be free from conflicts and the selection of one of these flight paths for use.

Conflict search. Computation and comparison of the predicted flight paths of two or more aircraft for the purpose of determining conflicts.

Contact point. A specified position, time or level at which an aircraft is required to establish radiocommunication with an air traffic control unit.

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

Control assistant. A person who assists in the provision of air traffic services but who is not authorized to make decisions regarding clearances, advice or information to be issued to aircraft.

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

Note.— The term controlled aerodrome indicates that air traffic control service is provided to aerodrome traffic but does not necessarily imply that a control zone exists, since a control zone is required at aerodromes where air traffic control service will be provided to IFR flights, but not at aerodromes where it will be provided only to VFR flights.

Controlled airspace. An airspace of defined dimensions within which air traffic control service is provided to controlled flights.

Controlled airspace (instrument restricted). Controlled airspace within which only IFR flights are permitted.

Controlled airspace (instrument/visual). Controlled airspace within which only IFR and controlled VFR flights are permitted.
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 1.— Decision altitude (DA) is referenced to mean sea level (MSL) and decision height (DH) is referenced to the threshold elevation.

Note 2.— 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 nominal flight path.

Decoder (or ground decoder, or ground decoding equipment). The device used to decipher replies received from transponders.

Departure point. Aerodrome or point in space from which departure takes place.

DETRESFA. The code word used to designate a distress phase.

Display. A visual presentation of data in a manner which permits interpretation by a controller.

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.

Diversion. The act of proceeding to an aerodrome other than one at which a landing was intended.

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.

En-route clearance. A clearance covering the flight path of an aircraft after take-off to the point at which an approach to land is expected to commence.

Note.— In some circumstances it may be necessary to subdivide this clearance, e.g. into sections divided by control area boundaries or into the departure, climb, or descent phases of flight.

Entry fix. The first reporting point, determined by reference to a navigation aid, over which an aircraft passes or is expected to pass upon entering a flight information region or a control area.

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

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

Note.— The actual time of leaving the holding point will depend upon the approach clearance.

Exit fix. The last reporting point, determined by reference to a navigation aid, over which an aircraft passes or is expected to pass before leaving a flight information region or a control area.

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

Note.— When the word “message” is used as a suffix to this term, it denotes the content and format of the filed flight plan data as transmitted.

Final approach. 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 points in the vicinity of an aerodrome from which:

1) a landing can be made; or

2) a missed approach procedure is initiated.
Flight crew member. A licensed crew member charged with duties essential to the operation of an aircraft during flight time.

Flight data. Data regarding the actual or intended movement of aircraft, normally presented in coded or abbreviated form.

Flight information. Information useful for the safe and efficient conduct of flight, including information on air traffic, meteorological conditions, aerodrome conditions or air route facilities.

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

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

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

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

Note 1.— A pressure type altimeter calibrated in accordance with the standard atmosphere:

a) when set to a QNH altimeter setting, will indicate altitude;
b) when set to QFE altimeter setting, will indicate height above the QFE reference datum;
c) when set to a pressure of 1013.2 hPa (1013.2 mb) 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.

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

Note.— Specifications for flight plans are contained in Annex 2. A model flight plan form is contained in Appendix 2 to this document.

Flight plan data. Data selected from the flight plan for purposes of processing, display or transfer.

Flight progress board. A board designed and used for the tabular display of flight data.

Flight progress display. A display of data from which the actual and intended progress of flights may be readily determined.

Flight progress strip. Strip used for the display of flight data on a flight progress board.

Flight status. An indication of whether a given aircraft requires special handling by air traffic services units or not.

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

Flow control. Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome, so as to ensure the most effective utilization of the airspace.

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

Garbling. The degradation of code information due to the simultaneous presence in a decoder of overlapping reply pulse trains.

Glide path. A descent profile determined for vertical guidance during a final approach.

Ground speed. The speed of an aircraft relative to the surface of the earth.

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

Ground visibility. The visibility at an aerodrome, as reported by an accredited observer.

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

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

Holding point. A specified location, identified by visual or other means, in the vicinity of which the position of an
aircraft in flight is maintained in accordance with air traffic control clearances.

**Holding procedure.** A predetermined manoeuvre which keeps an aircraft within a specified airspace whilst awaiting further clearance.

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

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

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

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

**Indicated airspeed.** The uncorrected reading on the airspeed indicator.

**Initial approach.** That part of an instrument approach procedure consisting of the first approach to the first navigational facility associated with the procedure, or to a predetermined fix.

**Initial approach segment.** That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

**Instrument approach procedure.** A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix or, where applicable, from the beginning of a defined arrival route, to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply.

**Instrument flight rules.** A set of rules governing the conduct of flight under instrument meteorological conditions.

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

Note 1.—The specified minima for visual meteorological conditions are contained in Chapter 4 of Annex 2.

Note 2.—In a control zone, a VFR flight may proceed under instrument meteorological conditions if and as authorized by air traffic control.

**International NOTAM Office.** An office designated by a State for the exchange of NOTAM internationally.

**Joining point.** The point at which an aircraft enters or is expected to enter a control area from uncontrolled airspace.

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

**Lateral separation.** Separation between aircraft expressed in terms of distance or angular displacement between tracks.

**Leaving point.** The point at which an aircraft leaves or is expected to leave a control area for uncontrolled airspace.

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

**Limited route concept.** A concept of controlled airspace organization which requires an aircraft operator to choose between a limited number of specified ATS routes for a flight from one point to another.

**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.

**Longitudinal separation.** Separation between aircraft expressed in units of time or distance along track.

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

**Message.** A communication sent from one location to another and comprising an integral number of fields.

**Message element.** The smallest assembly of characters, in a message, which has an independent meaning.

Note.—A message element is analogous to a word in plain language.

**Message field.** An assigned area of a message containing specified elements of data.
Message format. The disposition and structure of the message fields which constitute a message.

Meteorological information. Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

Meteorological office. An office designated to provide meteorological service for international air navigation.

Meteorological report. A statement of observed meteorological conditions related to a specified time and location.

Missed approach procedure. The procedure to be followed if the approach cannot be continued.

Mode (SSR Mode). The letter or number assigned to a specific pulse spacing of the interrogation signals transmitted by an interrogator. There are 4 modes, A, B, C and D specified in Annex 10, corresponding to four different interrogation pulse spacings.

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

Non-radar separation. The separation used when aircraft position information is derived from sources other than radar.

NOTAM. A notice 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.

Class I distribution. Distribution by means of telecommunication.

Class II distribution. Distribution by means other than telecommunication.

Obstacle clearance altitude/height (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.

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 flight.

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

Pilot-in-command. The pilot responsible for the operation and safety of the aircraft during flight time.

Positional response. That element of an SSR response which represents the actual position of the associated aircraft on the display.

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.

Note.—Precision approach radars are designated to enable pilots of aircraft to be given guidance by radio-communication during the final stages of the approach to land.

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

Primary radar. A radar system which uses reflected radio signals.

Printed communications. Communications which automatically provide a permanent printed record at each terminal of a circuit of all messages which pass over such circuit.

Procedure turn. 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 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 circumstance of each individual instrument approach procedure, the only restriction being that the obstacle clearance specified in PANS-OPS (Doc 8168) not be infringed.

* As defined in Annex 8.
**Profile.** The orthogonal projection of a flight path or portion thereof on the vertical surface containing the nominal track.

**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.

**Radar.** A radio detection device which provides information on range, azimuth and/or elevation of objects.

**Radar approach.** An approach, executed by an aircraft, under the direction of a radar controller.

**Radar blip.** A generic term for the visual indication, in non-symbolic form, on a radar display of the position of an aircraft obtained by primary or secondary radar.

**Radar clutter.** The visual indication on a radar display of unwanted signals.

**Radar contact.** The situation which exists when the radar blip or radar position symbol of a particular aircraft is seen and identified on a radar display.

**Radar control.** Term used to indicate that radar-derived information is employed directly in the provision of air traffic control service.

**Radar controller.** A qualified air traffic controller holding a radar rating appropriate to the functions to which he is assigned.

**Radar display.** An electronic display of radar-derived information depicting the position and movement of aircraft.

**Radar echo.** The visual indication on a radar display of a radar signal reflected from an object.

**Radar heading.** A magnetic heading given by a controller to a pilot on the basis of radar-derived information for the purpose of providing navigational guidance.

**Radar identification.** The process of correlating a particular radar blip or radar position symbol with a specific aircraft.

**Radar map.** Information superimposed on a radar display to provide ready indication of selected features.

**Radar monitoring.** The use of radar for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path.

**Radar position symbol (RPS).** A generic term of the visual indication in a symbolic form, on a radar display, of the position of an aircraft obtained after digital computer processing of positional data derived from primary radar and/or SSR.

**Radar response (or SSR response).** The visual indication in non-symbolic form, on a radar display, of a radar signal transmitted from an object in reply to an interrogation.

**Radar separation.** The separation used when aircraft position information is derived from radar sources.

**Radar service.** Term used to indicate a service provided directly by means of radar.

**Radar tracking.** The act, by either a human or a computer, of following the movements of specific aircraft by means of radar for the purpose of ensuring a continuous indication of the identity, position, track and/or height of the aircraft.

**Radar track position.** An extrapolation of aircraft position by the computer based upon radar information and used by the computer for tracking purposes.

Note.—In some cases, information other than radar-derived information is used to assist the tracking processes.

**Radar unit.** That element of an air traffic services unit which uses radar equipment to provide one or more services.

**Radar vectoring.** Provision of navigational guidance to aircraft in the form of specific headings, based on the use of radar.

**Receiving unit/controller.** Air traffic services unit/air traffic controller to which a message is sent.

Note.—See definition of sending unit/controller.

**Release time.** Time prior to which an aircraft should be given further clearance or prior to which it should not proceed in case of radio failure.

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

**Rescue co-ordination centre.** A unit responsible for promoting efficient organization of search and rescue
service and for co-ordinating the conduct of search and rescue operations within a search and rescue region.

**Rescue unit.** A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue.

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

**Route description.** The unambiguous delineation of a route in terms of an ordered sequence of ATS route designators and/or significant points.

**Route segment.** A portion of a route to be flown, as defined by two consecutive significant points specified in a flight plan.

**Route stage.** A route or portion of a route flown without an intermediate landing.

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

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

**Secondary radar.** A radar system wherein a radio signal transmitted from the radar station initiates the transmission of a radio signal from another station.

**Secondary surveillance radar (SSR).** A system of secondary radar using ground transmitters/receivers (interrogators) and airborne transponders conforming to specifications developed by ICAO.

**Sending unit/controller.** Air traffic services unit/air traffic controller transmitting a message.

*Note.— See definition of receiving unit/controller.*

**Separation.** Spacing between aircraft, levels or tracks.

**Shoreline.** A line following the general contour of the shore, except that in cases of inlets or bays less than 30 NM in width, the line shall pass directly across the inlet or bay to intersect the general contour on the opposite side.

**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 operations.

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

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

**Simultaneous mode.** A mode of ATS data interchange where information extracted from the filed flight plan is sent simultaneously in a filed flight plan message to all ATS units concerned along the route of flight.

**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.

*Note.— Combinations of ice, snow and/or standing water may, especially when rain, sleet or snow is falling, produce substances with specific gravities in excess of 0.8. These substances, due to their high water/ice content, will have a transparent rather than a cloudy appearance and, at the higher specific gravities, will be readily distinguishable from slush.*

**Snow (on the ground).**

a) Dry snow. Snow which can be blown if loose or, if compacted by hand, will fall apart upon release; specific gravity: up to but not including 0.35.

b) Wet snow. Snow which, if compacted by hand, will stick together and tend to or form a snowball; specific gravity: 0.35 up to but not including 0.5.

c) Compacted snow. Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into chunks if picked up; specific gravity: 0.5 and over.

**Special VFR flight.** A controlled VFR flight authorized by air traffic control to operate within a control zone under meteorological conditions below the visual meteorological conditions.

**Standard altimeter setting.** A pressure setting of 1013.2 hPa (1013.1 mb) which, when set on the subscale of the sensitive altimeter, will cause the altimeter to read zero when at mean sea level in the ICAO standard atmosphere.
**Step-by-step mode.** A mode of ATS data interchange where each ATS unit, as the flight progresses, transmits a current flight plan message to the next unit.

**Sub-system.** Any system which is associated with the air traffic control system as a provider and/or recipient of information relating to the provision of air traffic control service.

**Surveillance radar.** Radar equipment used to determine the position of an aircraft in range and azimuth.

**Synthetic display.** A display of computer-generated information, normally comprising aircraft positions and associated data presented in alphanumeric or symbolic form.

**Tabular display.** A display of information in the form of a table.

**Target.** In radar, 1) generally, any discrete object which reflects or retransmits energy back to the radar equipment; 2) specifically, an object of radar search or surveillance.

**Taxiing.** Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing and, in the case of helicopters, operation over the surface of an aerodrome within a height band associated with ground effect and at speeds associated with taxiing, i.e. air-taxiing.

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

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

**Terminal area sequencing.** The process of organizing traffic entering and departing from a terminal area into an orderly flow.

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

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

**Touchdown.** The point where the nominal glide path intercepts the runway.

Note. — Touchdown as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.

**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).

**Transfer of control.** Transfer of responsibility for providing air traffic control service.

Note. — When the word “process” is used as a suffix to this term, it signifies the series of actions taken by two air traffic control units for the purpose of effecting transfer of responsibility from one unit to the other.

**Transfer of control point.** A defined point located along the flight path 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.

**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 next air traffic control unit/air traffic controller along the route of flight.

Note. — See definition of Accepting unit/controller.

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

**Transition layer.** The airspace between the transition altitude and the transition level.

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

**Transponder.** A receiver/transmitter which will generate a reply signal upon proper interrogation; the interrogation and reply being on different frequencies.
Part V.— Terms and references
Section I, Chapter I.— Glossary of terms

True airspeed. The speed of the aeroplane relative to undisturbed air.

Uncertainty phase. A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

Unlimited route concept. A concept of controlled airspace organization which allows an operator complete freedom to choose the route to be taken by a flight from one point to another provided that the route is adequately defined in the flight plan and adhered to as accurately as circumstances permit.

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

Note.— Unmanned free balloons are classified as heavy, medium or light in accordance with specifications contained in Annex 2, Appendix D.

Vertical separation. Separation between aircraft expressed in units of vertical distance.

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

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

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.

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

Note.— The specified minima are contained in Annex 2, Chapter 4.

VMC. The symbol used to designate visual meteorological conditions.

Way-point. A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation.
Chapter 2
Commonly Used Abbreviations

2.1 INTRODUCTION

Abbreviations which are defined in the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (Doc 8400) are used in accordance with the meanings and usages given therein. However, there still remains a wide variety of abbreviations and codes in use throughout the world in international aeronautical telecommunications service, aeronautical information documents and air traffic services. As far as possible, the abbreviations used in this document and outlined below are those which have the widest international use.

2.2 ABBREVIATIONS

2.2.1 When the following abbreviations are used in this manual, they have the following meanings:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC</td>
<td>area control centre or area control</td>
</tr>
<tr>
<td>ADF</td>
<td>automatic direction-finder</td>
</tr>
<tr>
<td>ADIZ</td>
<td>Air Defence Identification Zone</td>
</tr>
<tr>
<td>ADREP</td>
<td>accident/incident reporting system</td>
</tr>
<tr>
<td>ADSEL</td>
<td>address selective</td>
</tr>
<tr>
<td>AFI</td>
<td>African-Indian Ocean Region</td>
</tr>
<tr>
<td>AFIS</td>
<td>aeronautical flight information service</td>
</tr>
<tr>
<td>AFTN</td>
<td>aeronautical fixed telecommunication network</td>
</tr>
<tr>
<td>AGA</td>
<td>Aerodromes, Air Routes and Ground Aids</td>
</tr>
<tr>
<td>AGL</td>
<td>above ground level</td>
</tr>
<tr>
<td>AIP</td>
<td>aeronautical information publication</td>
</tr>
<tr>
<td>AIRAC</td>
<td>aeronautical information regulation and control</td>
</tr>
<tr>
<td>AIS</td>
<td>aeronautical information service</td>
</tr>
<tr>
<td>AMR</td>
<td>airport movement radar</td>
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<tr>
<td>APP</td>
<td>approach control</td>
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<tr>
<td>ASDE</td>
<td>airport surface detection equipment</td>
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<tr>
<td>ASR</td>
<td>aerodrome surveillance radar</td>
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<tr>
<td>ATC</td>
<td>air traffic control</td>
</tr>
<tr>
<td>ATFM</td>
<td>air traffic flow management</td>
</tr>
<tr>
<td>ATIS</td>
<td>automatic terminal information service</td>
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<tr>
<td>ATS</td>
<td>air traffic services</td>
</tr>
<tr>
<td>ATSPM</td>
<td>Air Traffic Services Planning Manual</td>
</tr>
<tr>
<td>BRITE</td>
<td>bright radar indicator tower equipment</td>
</tr>
<tr>
<td>CAA</td>
<td>Civil Aviation Authority (UK)</td>
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<tr>
<td>CAT</td>
<td>Category</td>
</tr>
<tr>
<td>CCTV</td>
<td>closed circuit television</td>
</tr>
<tr>
<td>CIDIN</td>
<td>common ICAO data interchange network communications</td>
</tr>
<tr>
<td>COM</td>
<td>current flight plan</td>
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<tr>
<td>CPL</td>
<td>cathode-ray tube</td>
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<tr>
<td>CTA</td>
<td>control area</td>
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<tr>
<td>CW</td>
<td>continuous wave</td>
</tr>
<tr>
<td>DABS</td>
<td>discrete address beacon system</td>
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<tr>
<td>DAVSS</td>
<td>Doppler acoustic vortex sensing equipment</td>
</tr>
<tr>
<td>DH</td>
<td>decision height</td>
</tr>
<tr>
<td>DVOR</td>
<td>Doppler VHF omni-directional radio range (VOR)</td>
</tr>
<tr>
<td>DME</td>
<td>distance measuring equipment</td>
</tr>
<tr>
<td>DF</td>
<td>direction finder</td>
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<tr>
<td>EDP</td>
<td>electronic data processing</td>
</tr>
<tr>
<td>EST</td>
<td>estimate</td>
</tr>
<tr>
<td>ETA</td>
<td>estimated time of arrival</td>
</tr>
<tr>
<td>ETG</td>
<td>electronic target generator (APP — radar simulator)</td>
</tr>
<tr>
<td>EUR</td>
<td>European Region</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration (United States)</td>
</tr>
<tr>
<td>FACSFAC</td>
<td>Fleet Area Control Surveillance Facility (United States)</td>
</tr>
<tr>
<td>FIC</td>
<td>flight information centre</td>
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<tr>
<td>FIR</td>
<td>flight information region</td>
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<tr>
<td>FIS</td>
<td>flight information service</td>
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<td>FL</td>
<td>flight level</td>
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<td>FPL</td>
<td>filed flight plan</td>
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<tr>
<td>FSS</td>
<td>Flight Service Station</td>
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<tr>
<td>GMT</td>
<td>Greenwich Mean Time</td>
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<tr>
<td>GWVSS</td>
<td>ground wind vortex sensing system</td>
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<tr>
<td>HELIOPS</td>
<td>helicopter operations</td>
</tr>
<tr>
<td>HF</td>
<td>high frequency</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IFATCA</td>
<td>International Federation of Air Traffic Controllers’ Associations</td>
</tr>
<tr>
<td>IFALPA</td>
<td>International Federation of Airline Pilots’ Associations</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<td>-------------</td>
<td>----------------------------------------------------------------------------</td>
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<tr>
<td>IFIP</td>
<td>International Federation for Information Processing</td>
</tr>
<tr>
<td>IFR</td>
<td>instrument flight rules</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
</tr>
<tr>
<td>ILS</td>
<td>instrument landing system</td>
</tr>
<tr>
<td>IMC</td>
<td>instrument meteorological conditions</td>
</tr>
<tr>
<td>INS</td>
<td>inertial navigation systems</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>ITU</td>
<td>International Telecommunication Union</td>
</tr>
<tr>
<td>LARS</td>
<td>lower airspace radar service</td>
</tr>
<tr>
<td>LF</td>
<td>low frequency</td>
</tr>
<tr>
<td>LOP</td>
<td>line of position</td>
</tr>
<tr>
<td>LORAN</td>
<td>long range air navigation system</td>
</tr>
<tr>
<td>MET</td>
<td>meteorology</td>
</tr>
<tr>
<td>MF</td>
<td>medium frequency</td>
</tr>
<tr>
<td>MLS</td>
<td>microwave landing system</td>
</tr>
<tr>
<td>MNPS</td>
<td>minimum navigation performance specifications</td>
</tr>
<tr>
<td>MOAs</td>
<td>military operations areas</td>
</tr>
<tr>
<td>NAT</td>
<td>North Atlantic Region</td>
</tr>
<tr>
<td>NAT/SPG</td>
<td>North Atlantic Systems Planning Group</td>
</tr>
<tr>
<td>NDB</td>
<td>non-directional radio beacon</td>
</tr>
<tr>
<td>NTZ</td>
<td>no transgression zone</td>
</tr>
<tr>
<td>OAC</td>
<td>oceanic area control centre</td>
</tr>
<tr>
<td>OFIS</td>
<td>operational flight information service</td>
</tr>
<tr>
<td>OPS</td>
<td>operations</td>
</tr>
<tr>
<td>PAC</td>
<td>Pacific Region</td>
</tr>
<tr>
<td>PANS-RAC</td>
<td>Procedures for Air Navigation Services — Rules of the Air and Air Traffic Services</td>
</tr>
<tr>
<td>PAR</td>
<td>precision approach radar</td>
</tr>
<tr>
<td>PCS</td>
<td>power conditioning system</td>
</tr>
<tr>
<td>PPI</td>
<td>plan position indicator</td>
</tr>
<tr>
<td>PSR</td>
<td>primary surveillance radar</td>
</tr>
<tr>
<td>PVOR</td>
<td>precision VHF omni-directional radio range (VOR)</td>
</tr>
<tr>
<td>RGCSP</td>
<td>Review of the General Concept of Separation Panel</td>
</tr>
<tr>
<td>RPL</td>
<td>repetitive flight plan</td>
</tr>
<tr>
<td>rpm</td>
<td>revolutions per minute</td>
</tr>
<tr>
<td>RPS</td>
<td>radar position symbol</td>
</tr>
<tr>
<td>RNAV</td>
<td>area navigation</td>
</tr>
<tr>
<td>RTF</td>
<td>radiotelephony</td>
</tr>
<tr>
<td>RVR</td>
<td>runway visual range</td>
</tr>
<tr>
<td>SAM</td>
<td>South America Region</td>
</tr>
<tr>
<td>SAR</td>
<td>search and rescue</td>
</tr>
<tr>
<td>SARPs</td>
<td>Standards and Recommended Practices</td>
</tr>
<tr>
<td>SID</td>
<td>standard instrument departure</td>
</tr>
<tr>
<td>SIGMET</td>
<td>significant meteorological surface material</td>
</tr>
<tr>
<td>SMGC</td>
<td>surface movement guidance control</td>
</tr>
<tr>
<td>SMR</td>
<td>surface movement radar</td>
</tr>
<tr>
<td>SPI</td>
<td>special position identification pulse</td>
</tr>
<tr>
<td>SSR</td>
<td>secondary surveillance radar</td>
</tr>
<tr>
<td>SST</td>
<td>supersonic transport</td>
</tr>
<tr>
<td>STAR</td>
<td>standard (instrument) arrival route</td>
</tr>
<tr>
<td>TACAN</td>
<td>tactical air navigation aid</td>
</tr>
<tr>
<td>TAS</td>
<td>true airspeed</td>
</tr>
<tr>
<td>TMA</td>
<td>terminal control area</td>
</tr>
<tr>
<td>TMC</td>
<td>terminal control</td>
</tr>
<tr>
<td>TSB</td>
<td>time reference scanning beam</td>
</tr>
<tr>
<td>TVOR</td>
<td>terminal VHF omni-directional radio range (VOR)</td>
</tr>
<tr>
<td>TWR</td>
<td>aerodrome control tower or aerodrome control</td>
</tr>
<tr>
<td>UHF</td>
<td>ultra high frequency</td>
</tr>
<tr>
<td>UIR</td>
<td>upper flight information region</td>
</tr>
<tr>
<td>UPS</td>
<td>uninterruptible power supply</td>
</tr>
<tr>
<td>UTC</td>
<td>Co-ordinate Universal Time</td>
</tr>
<tr>
<td>VAS</td>
<td>vortex advisory system</td>
</tr>
<tr>
<td>VDF</td>
<td>very high frequency (VHF) direction-finder (DF)</td>
</tr>
<tr>
<td>VFR</td>
<td>visual flight rules</td>
</tr>
<tr>
<td>VHF</td>
<td>very high frequency</td>
</tr>
<tr>
<td>VLF</td>
<td>very low frequency</td>
</tr>
<tr>
<td>VMC</td>
<td>visual meteorological conditions</td>
</tr>
<tr>
<td>VOR</td>
<td>very high frequency (VHF) omni-directional radio range</td>
</tr>
<tr>
<td>VORTAC</td>
<td>collocated VHF omni-directional radio range (VOR) and tactical air navigation (TACAN)</td>
</tr>
<tr>
<td>VWS</td>
<td>vortex wake system</td>
</tr>
<tr>
<td>WVAS</td>
<td>automated wake vortex avoidance system</td>
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- 1.1 Conventions and related acts ............... V-2-1-1
- 1.2 Annexes to the Convention on International Civil Aviation ............... V-2-1-1
- 1.3 Procedures for air navigation services ............. V-2-1-1
- 1.4 Regional supplementary procedures ............ V-2-1-1
- 1.5 Technical publications ....................... V-2-1-1
Chapter 1
References and Source Documents

1.1 CONVENTIONS AND RELATED ACTS

a) Convention on International Civil Aviation (Doc 7290)
b) Convention for the Suppression of Unlawful Seizure of Aircraft (Doc 8920)
c) Convention for the Suppression of Unlawful Acts Against the Safety of Civil Aviation (Doc 8966)

d) Convention on International Civil Aviation
   (Doc 73'30)

1.2 ANNEXES TO THE
CONVENTION ON INTERNATIONAL CIVIL AVIATION

a) Annex 1 — Personnel Licensing
b) Annex 2 — Rules of the Air
c) Annex 3 — Meteorological Service for International Air Navigation
d) Annex 4 — Aeronautical Charts
e) Annex 5 — Units of Measurement to be Used in Air and Ground Operations
f) Annex 6 — Operation of Aircraft
   Part I — International Commercial Air Transport
   Part II — International General Aviation
g) Annex 8 — Airworthiness of Aircraft
h) Annex 10 — Aeronautical Telecommunications
   Volume I (Part I — Equipment and Systems; Part II — Radio Frequencies)
i) Annex 10 — Aeronautical Telecommunications
   Volume II (Communications Procedures including those with PANS status)
j) Annex 11 — Air Traffic Services
k) Annex 12 — Search and Rescue
l) Annex 13 — Aircraft Accident Investigation
m) Annex 14 — Aerodromes
n) Annex 15 — Aeronautical Information Services
o) Annex 17 — Security — Safeguarding International Civil Aviation Against Acts of Unlawful Interference

1.3 PROCEDURES FOR AIR NAVIGATION SERVICES

a) ICAO Abbreviations and Codes (Doc 8400)
b) Aircraft Operations (Doc 8168)
   Volume I — Flight Procedures
   Volume II — Construction of Visual and Instrument Flight Procedures
c) Rules of the Air and Air Traffic Services (Doc 4444)

1.4 REGIONAL SUPPLEMENTARY PROCEDURES

Regional Supplementary Procedures (Doc 7030)

1.5 TECHNICAL PUBLICATIONS

a) AGA — Aerodromes, Air Routes and Ground Aids
   1) Aerodrome Design Manual (Doc 9157)
   2) Airport Planning Manual (Doc 9184)
      Part 1. Master Planning
      Part 2. Design and Planning
      Part 3. Master Planning
      Part 4. Design and Planning
   3) Airport Services Manual (Doc 9137)
      Part 1. Rescue and Fire Fighting
      Part 2. Operations
      Part 3. Airfield Design
      Part 4. Fire Fighting
      Part 5. Maintenance
      Part 6. Operations
   4) Heliport Manual (Doc 9261)
   5) Surface Movement Guidance and Control Systems.
      (Circular 148)

b) AIG — Accident Investigation and Prevention
   1) Accident/Incident Reporting Manual (ADREP Manual) (Doc 9156)
   2) Manual of Aircraft Accident Investigation (Doc 6920)
c) AIS — Aeronautical Information and Charts
   1) Aeronautical Chart Manual (Doc 8697)
   2) Aeronautical Information Services Manual (Doc 8126)
   3) Measures to Improve the Aeronautical Information Services (Circular 156)

d) COM — Communications
   1) Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services (Doc 8585)
   2) Location Indicators (Doc 7910)
      Volume I
      Volume II — Instrument Landing System (ILS)
   4) Aviation Use of Omega (Circular 139)
   5) Microwave Landing System (MLS) Advisory Circular Issue No. 1 (Circular 165)
   6) Secondary Surveillance Radar Mode S Advisory Circular (Circular 174)
   7) ATS Speech Circuits — Guidance Material on Switched Network Planning (Circular 183)

e) MET — Meteorology
   1) Manual of Runway Visual Range Observing and Reporting Practices (Doc 9328)
   2) Manual on Co-ordination Between Air Traffic Services and Aeronautical Meteorological Services (Doc 9377-AN/915)

f) OPS/AIR — Operations and Airworthiness
   1) Airworthiness Technical Manual (Doc 9051)
   2) Manual on the Use of the Collision Risk Model (CRM) for ILS Operations (Doc 9274)
   3) Manual of All-Weather Operations (Doc 9365)
   4) Instrument Flight Procedures Construction Manual (Doc 9368)
   5) Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft (Doc 9388)
   6) Guidance Material on SST Aircraft Operations (Circular 126)

g) PEL/TRG — Personnel Licensing and Training Practices
   2) Training Manual (Doc 7192)
      Part A-1 — General Considerations
      Part D-2 — Air Traffic Controller

h) RAC/SAR — Rules of the Air, Air Traffic Services and Search and Rescue
   1) Aircraft Type Designators (Doc 8643)
   2) Search and Rescue Manual (Doc 7333)
      Part 1 — The Search and Rescue Organization
      Part 2 — Search and Rescue Procedures
   3) Methodology for the Derivation of Separation Minima Applied to the Spacing Between Parallel Tracks in ATS Route Structures (Circular 120)
ICAO TECHNICAL PUBLICATIONS

The following summary gives the status, and also describes in general terms the contents of the various series of technical publications issued by the International Civil Aviation Organization. It does not include specialized publications that do not fall specifically within one of the series, such as the Aeronautical Chart Catalogue or the Meteorological Tables for International Air Navigation.

International Standards and Recommended Practices are adopted by the Council in accordance with Articles 54, 37 and 90 of the Convention on International Civil Aviation and are designated, for convenience, as Annexes to the Convention. The uniform application by Contracting States of the specifications contained in the International Standards is recognized as necessary for the safety or regularity of international air navigation while the uniform application of the specifications in the Recommended Practices is regarded as desirable in the interest of safety, regularity or efficiency of international air navigation. Knowledge of any differences between the national regulations or practices of a State and those established by an International Standard is essential to the safety or regularity of international air navigation. In the event of non-compliance with an International Standard, a State has, in fact, an obligation, under Article 38 of the Convention, to notify the Council of any differences. Knowledge of differences from Recommended Practices may also be important for the safety of air navigation and, although the Convention does not impose any obligation with regard thereto, the Council has invited Contracting States to notify such differences in addition to those relating to International Standards.

Procedures for Air Navigation Services (PANS) are approved by the Council for world-wide application. They contain, for the most part, operating procedures regarded as not yet having attained a sufficient degree of maturity for adoption as International Standards and Recommended Practices, as well as material of a more permanent character which is considered too detailed for incorporation in an Annex, or is susceptible to frequent amendment, for which the processes of the Convention would be too cumbersome.

Regional Supplementary Procedures (SUPPS) have a status similar to that of PANS in that they are approved by the Council, but only for application in the respective regions. They are prepared in consolidated form, since certain of the procedures apply to overlapping regions or are common to two or more regions.

The following publications are prepared by authority of the Secretary General in accordance with the principles and policies approved by the Council.

Technical Manuals provide guidance and information in amplification of the International Standards, Recommended Practices and PANS, the implementation of which they are designed to facilitate.

Air Navigation Plans detail requirements for facilities and services for international air navigation in the respective ICAO Air Navigation Regions. They are prepared on the authority of the Secretary General on the basis of recommendations of regional air navigation meetings and of the Council action thereon. The plans are amended periodically to reflect changes in requirements and in the status of implementation of the recommended facilities and services.

ICAO Circulars make available specialized information of interest to Contracting States. This includes studies on technical subjects.