

Unit - 2**AIR TRAFFIC SERVICES**

Area control service, assignment of cruising levels minimum flight altitude ATS routes and significant points – RNAV and RNP – Vertical, lateral and longitudinal separations based on time / distance –ATC clearances – Flight plans – position report

1. Area control service

Area Control Center (ACC) is a facility responsible for controlling aircraft en route in a particular volume of airspace (a Flight Information Region) at high altitudes between airport approaches and departures. In the United States, such a Center is referred to as an Air Route Traffic Control Center (ARTCC). A Center typically accepts traffic from, and ultimately passes traffic to, the control of a Terminal Control Center or of another Center. Most Centers are operated by the national governments of the countries in which they are located. The general operations of Centers worldwide, and the boundaries of the airspace each Center controls, are governed by the ICAO.

In some cases, the function of an Area Control Center and a Terminal Control Center are combined in a single facility. For example, NATS combines the London Terminal Control Centre (LTCC) and London Area Control Centre (LACC) in Swanwick in the UK.

Sectors use distinct radio frequencies for communication with aircraft. Each sector also has secure landline communications with adjacent sectors, approach controls, areas, ARTCCs, flight service centers, and military aviation control facilities. These landline communications are shared among all sectors who need them and are available on a first-come, first-served basis. Aircraft passing from one sector to another shall be handed off and requested to change frequencies to contact the next sector controller. Sector boundaries are specified by an aeronautical chart.

Air traffic controllers working within a Center communicate via radio with pilots of instrument flight rules aircraft passing through the Center's airspace. A Center's communication frequencies (typically in the very high frequency amplitude modulation aviation bands, 118 MHz to 137 MHz, for

overland control) are published in aeronautical charts and manuals, and will also be announced to a pilot by the previous controller during a hand-off.

Oceanic air traffic control

Some Centers have ICAO-designated responsibility for airspace located over an ocean such as ZNY and ZOA, the majority of which is international airspace. Because substantial volumes of oceanic airspace lie beyond the range of ground-based radars, oceanic airspace controllers have to estimate the position of an airplane from pilot reports and computer models (procedural control), rather than observing the position directly (radar control, also known as positive control). Pilots flying over an ocean can determine their own positions accurately using the Global Positioning System and can supply periodic updates to a Center. See also Air traffic control: Radar Coverage.

A Center's control service for an oceanic FIR may be operationally distinct from its service for a domestic overland FIR over land, employing different communications frequencies, controllers, and a different ICAO code.

2. Minimum cruising level

Except when specifically authorized by the appropriate authority, cruising levels below the minimum flight altitudes established by the State shall not be assigned.

Area control centre's shall, when circumstances warrant it, determine the lowest usable flight level or levels for the whole or parts of the control area for which they are responsible, and use it when assigning flight levels and pass it to pilots on request.

3. Assignment of cruising levels

Except when traffic conditions and co-ordination procedures permit authorization of cruise climb, an area control centre shall normally authorize only one cruising level for an aircraft beyond its control area, i.e. that cruising level at which the aircraft will enter the next control area whether contiguous or not. Aircraft will be advised to request en route any subsequent cruising level changes desired.

Aircraft authorized to employ cruise climb techniques shall be cleared to operate between two levels or above a level.

If it is necessary to adjust the cruising level of an aircraft operating along an established ATS route extending partly within and partly outside controlled airspace and where the respective series of cruising levels are not identical, such adjustment shall, whenever possible, be effected within controlled airspace and, if suitably located, over a radio navigation aid.

When an aircraft has been cleared into a centre's control area at a cruising level which is below the established minimum cruising level for a subsequent portion of the route, action should be initiated by that area control centre to issue a revised clearance to the aircraft even though the pilot has not requested the necessary cruising level change.

When necessary, an aircraft may be cleared to change cruising level at a specified time, place or rate.

In so far as practicable, cruising levels of aircraft flying to the same destination shall be assigned in a manner that will be correct for an approach sequence at destination.

An aircraft at a cruising level shall normally have priority over other aircraft desiring that cruising level. When two or more aircraft are at the same cruising level, the preceding aircraft shall normally have priority.

An aircraft may be assigned a level previously occupied by another aircraft after the latter has reported vacating it. If, however, severe turbulence is known to exist, or the aircraft concerned is effecting a cruise climb, such assignment shall be withheld until the aircraft vacating the level has reported at another level separated by the required minimum.

The cruising levels, or, in the case of cruise climb, the range of levels, to be assigned to controlled flights shall be selected from those allocated to IFR flights in:

4. Area Navigation (RNAV)

RNAV is a method of navigation that permits aircraft operation on any desired flight path within the coverage of ground or space based navigation aids or within the limits of the capability of self-contained aids, or a combination of these. In the future, there will be an increased dependence on the use of RNAV in lieu of routes defined by ground-based navigation aids.

RNAV routes and terminal procedures, including departure procedures (DPs) and standard terminal arrivals (STARs), are designed with RNAV systems in mind. There are several potential advantages of RNAV routes and procedures:

- Time and fuel savings.
- Reduced dependence on radar vectoring, altitude, and speed assignments allowing a reduction in required ATC radio transmissions, and
- More efficient use of airspace.

In addition to information found in this manual, guidance for domestic RNAV DPs, STARs, and routes may also be found in Advisory Circular 90-100A, U.S. Terminal and En Route Area Navigation (RNAV) Operations.

RNAV Operations

RNAV procedures, such as DPs and STARs, demand strict pilot awareness and maintenance of the procedure centerline. Pilots should possess a working knowledge of their aircraft navigation system to ensure RNAV procedures are flown in an appropriate manner. In addition, pilots should have an understanding of the various waypoint and leg types used in RNAV procedures; these are discussed in more detail below.

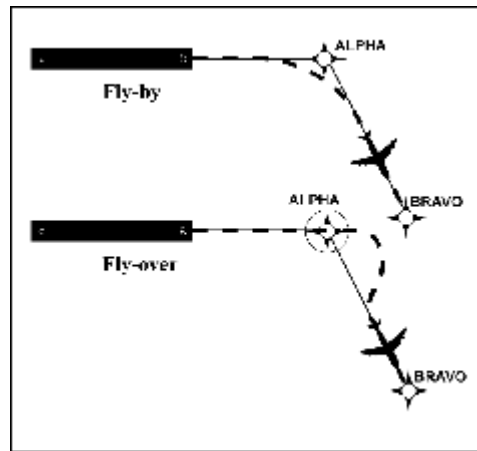
Waypoints

A waypoint is a predetermined geographical position that is defined in terms of latitude/longitude coordinates. Waypoints may be a simple named point in space or associated with existing navaids, intersections, or fixes. A waypoint is most often used to indicate a change in direction, speed, or altitude along the desired path. RNAV procedures make use of both fly-over and fly-by waypoints.

Fly-by waypoints Fly-by waypoints are used when an aircraft should begin a turn to the next course prior to reaching the waypoint separating the two route segments. This is known as turn anticipation.

Fly-over waypoints Fly-over waypoints are used when the aircraft must fly over the point prior to starting a turn.

Fly-by and Fly-over Waypoints



RNAV Leg Types. A leg type describes the desired path proceeding, following, or between waypoints on an RNAV procedure. Leg types are identified by a two-letter code that describes the path (e.g., heading, course, track, etc.) and the termination point (e.g., the path terminates at an altitude, distance, fix, etc.). Leg types used for procedure design are included in the aircraft navigation database, but not normally provided on the procedure chart. The narrative depiction of the RNAV chart describes how a procedure is flown. The “path and terminator concept” defines that every leg of a procedure has a termination point and some kind of path into that termination point. Some of the available leg types are described below.

5. Required Navigation Performance (RNP)

RNP is RNAV with on-board navigation monitoring and alerting, RNP is also a statement of navigation performance necessary for operation within a defined airspace. A critical component of RNP is the *ability of the aircraft navigation system to monitor its achieved navigation performance, and to identify for the pilot*

whether the operational requirement is, or is not being met during an operation. This on-board performance monitoring and alerting capability therefore allows a lessened reliance on air traffic control intervention (via radar monitoring, automatic dependent surveillance (ADS), multilateration, communications), and/or route separation to achieve the overall safety of the operation. RNP capability of the aircraft is a major component in determining the separation criteria to ensure that the overall containment of the operation is met.

Required navigation performance (RNP) is a type of performance-based navigation (PBN) that allows an aircraft to fly a specific path between two 3D-defined points in space. RNAV and RNP systems are fundamentally similar. The key difference between them is the requirement for on-board performance monitoring and alerting. A navigation specification that includes a requirement for on-board navigation performance monitoring and alerting is referred to as an RNP specification. One not having such a requirement is referred to as an RNAV specification.

RNP also refers to the level of performance required for a specific procedure or a specific block of airspace. An RNP of 10 means that a navigation system must be able to calculate its position to within a circle with a radius of 10 nautical miles. An RNP of 0.3 means the aircraft navigation system must be able to calculate its position to within a circle with a radius of 3 tenths of a nautical mile.

A related term is ANP which stands for "actual navigation performance". ANP refers to the current performance of a navigation system while "RNP" refers to the accuracy required for a given block of airspace or a specific instrument procedure.

Some oceanic airspace has an RNP of 4 or 10. The level of RNP an aircraft is capable of determines the separation required between aircraft.

RNP approaches with RNP values currently down to 0.1 allow aircraft to follow precise three-dimensional curved flight paths through congested airspace, around noise sensitive areas, or through difficult terrain.^[1]

U.S. Standard RNP Levels

RNP Level	Typical Application	Primary Route Width (NM) - Centerline to Boundary
0.1 to 1.0	RNP AR Approach Segments	0.1 to 1.0
0.3 to 1.0	RNP Approach Segments	0.3 to 1.0
1	Terminal and En Route	1.0
2	En Route	2.0

Uses of Suitable RNAV Systems

Subject to the operating requirements, operators may use a suitable RNAV system in the following ways.

1. Determine aircraft position relative to, or distance from a, TACAN, NDB, compass locator, DME fix; or a named fix defined by a VOR radial, TACAN course, NDB bearing, or compass locator bearing intersecting a VOR or localizer course.
2. Navigate to or from a VOR, TACAN, NDB, or compass locator.
3. Hold over a VOR, TACAN, NDB, compass locator, or DME fix.
4. Fly an arc based upon DME.

6. SEPARATION OF AIRCRAFT IN THE PROVISION OF AREA CONTROL SERVICE

General provisions for the separation of controlled traffic

Vertical or horizontal separation shall be provided:

- a) between all flights in Class A and B airspaces;
- b) between IFR flights in Class C, D and E airspaces;
- c) between IFR flights and VFR flights in Class C airspace;
- d) between IFR flights and special VFR flights; and
- e) between special VFR flights, when so prescribed by the appropriate ATS authority; except, for the cases under b) above in airspace Classes D and E, during the hours of daylight when flights have been

cleared to climb or descend subject to maintaining own separation and remaining in visual meteorological conditions

1. No clearance shall be given to execute any maneuver that would reduce the spacing between two aircraft to less than the separation minimum applicable in the circumstances.
2. Larger separations than the specified minima should be applied whenever wake turbulence or exceptional circumstances such as unlawful interference call for extra precautions. This should be done with due regard to all relevant factors so as to avoid impeding the flow of air traffic by the application of excessive separations.
3. Where the type of separation or minimum used to separate two aircraft cannot be maintained, action shall be taken to ensure that another type of separation or another minimum exists or is established prior to the time when the previously used separation would be insufficient.

VERTICAL SEPARATION

Vertical separation application

Vertical separation is obtained by requiring aircraft using prescribed altimeter setting procedures to operate at different levels expressed in terms of flight levels or altitudes in accordance with the provisions.

Vertical separation minimum

The vertical separation minimum (VSM) shall be:

- a) within designated airspace, subject to regional air navigation agreement: a nominal 300 m (1 000 ft) below FL 410 or a higher level where so prescribed for use under specified conditions, and a nominal 600 m (2 000 ft) at or above this level; and
- b) Within other airspace: a nominal 300 m (1 000 ft) below FL 290 and a nominal 600 m (2 000 ft) at or above this level.

Minimum cruising level

1. Except when specifically authorized by the appropriate authority, cruising levels below the minimum flight altitudes established by the State shall not be assigned.

2. Area control centres shall, when circumstances warrant it, determine the lowest usable flight level or levels for the whole or parts of the control area for which they are responsible, and use it

Assignment of cruising levels

1. Except when traffic conditions and co-ordination procedures permit authorization of cruise climb, an area control centre shall normally authorize only one cruising level for an aircraft beyond its control area, i.e. that cruising level at which the aircraft will enter the next control area whether contiguous or not. Aircraft will be advised to request en route any subsequent cruising level changes desired.
2. Aircraft authorized to employ cruise climb techniques shall be cleared to operate between two levels or above a level.
3. If it is necessary to adjust the cruising level of an aircraft operating along an established ATS route extending partly within and partly outside controlled airspace and where the respective series of cruising levels are not identical, such adjustment shall, whenever possible, be effected within controlled airspace and, if suitably located, over a radio navigation aid.
4. When an aircraft has been cleared into a centre's control area at a cruising level which is below the established minimum cruising level for a subsequent portion of the route, action should be initiated by that area control centre to issue a revised clearance to the aircraft even though the pilot has not requested the necessary cruising level change.
5. When necessary, an aircraft may be cleared to change cruising level at a specified time, place or rate.
6. In so far as practicable, cruising levels of aircraft flying to the same destination shall be assigned in a manner that will be correct for an approach sequence at destination.
7. An aircraft at a cruising level shall normally have priority over other aircraft desiring that cruising level. When two or more aircraft are at the same cruising level, the preceding aircraft shall normally have priority.
8. An aircraft may be assigned a level previously occupied by another aircraft after the latter has reported vacating it. If, however, severe turbulence is known to exist, or the aircraft concerned is effecting a cruise climb, such

assignment shall be withheld until the aircraft vacating the level has reported at another level separated by the required minimum.

9. The cruising levels, or, in the case of cruise climb, the range of levels, to be assigned to controlled flights shall be selected from those allocated to IFR flights.

Vertical separation during ascent or descent

Pilots in direct communication with each other may, with their concurrence, be cleared to maintain a specified vertical separation between their aircraft during ascent or descent.

Lateral separation

Lateral separation shall be applied so that the distance between those portions of the intended routes for which the aircraft are to be laterally separated is never less than an established distance to account for navigational inaccuracies plus a specified buffer. This buffer shall be determined by the appropriate authority and included in the lateral separation minima as an integral part thereof.

Lateral separation of aircraft at the same level is obtained by requiring operation on different routes or in different geographical locations as determined by visual observation, by the use of navigation aids or by the use of area navigation equipment.

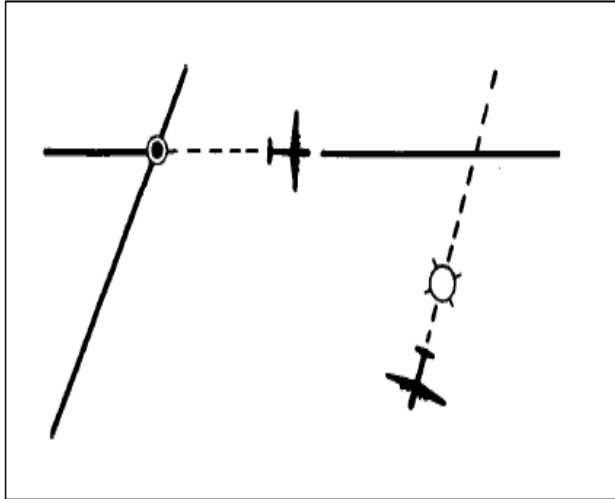
When information is received indicating navigation equipment failure or deterioration below the navigation performance requirements, ATC shall then, as required, apply alternative separation minima.

Lateral separation criteria and minima

Means by which lateral separation may be applied include the following:

Using the same or different geographic locations:

By position reports which positively indicate the aircraft are over different geographic locations as determined visually or by reference to a navigation aid



Using the same navigation aid or method.:

By requiring aircraft to fly on specified tracks which are separated by a minimum amount appropriate to the navigation aid or method employed as follows:

- a) VOR: at least 15 degrees and at a distance of 28 km (15 NM) or more from the facility
- b) NDB: at least 30 degrees and at a distance of 28 kmm (15 NM) or more from the facility (see Figure III-3);
- c) dead reckoning (DR): aircraft established on tracks diverging by at least 45 degrees and at a distance of 28 km (15 NM) or more from the point of intersection of the tracks, this point being determined either visually or by reference to a navigation aid and both aircraft are established outbound from the intersection (see Figure III-4); or
- d) RNAV operations: aircraft established on tracks which diverge by at least 15 degrees. Lateral separation exists when the protected airspace associated with the track of one aircraft does not overlap with the protected airspace associated with the track of the other aircraft. This is determined by applying the angular difference between two tracks and the appropriate protected airspace value. The derived value is expressed as a distance from the intersection of the two tracks at which lateral separation exists.

When aircraft are operating on tracks which are separated by considerably more than the foregoing minimum figures, States may reduce the distance at which lateral separation is achieved.

Using different navigation aids or methods

Lateral separation between aircraft using different navigation aids, or when one aircraft is using RNAV equipment, shall be established by ensuring that the derived protected airspaces for the navigation aid(s) or RNP do not overlap.

RNAV operations (where RNP is specified) on parallel tracks or ATS routes

Within designated airspace or on designated routes, where RNP is specified, lateral separation between RNAV-equipped aircraft may be obtained by requiring aircraft to be established on the centre lines of parallel tracks or ATS routes spaced at a distance which ensures that the protected airspace of the tracks or ATS routes does not overlap.

Transitioning into airspace where a greater lateral separation minimum applies

By requiring aircraft to fly on specified tracks:

- a) which are separated by an appropriate minimum; and then
- b) diverge by at least 15 degrees until the applicable lateral separation minimum is established; and
- c) it is possible to ensure, by means approved by the appropriate ATS authority, that aircraft have the navigation capability necessary to ensure accurate track guidance.

Longitudinal separation

Longitudinal separation shall be applied so that the spacing between the estimated positions of the aircraft being separated is never less than a prescribed minimum. Longitudinal separation between aircraft following the same or diverging tracks may be maintained by application of the Mach number technique, when so prescribed on the basis of regional air navigation agreement.

Longitudinal separation shall be established by requiring aircraft to depart at a specified time, to lose time to arrive over a geographical location at a specified time, or to hold over a geographical location until a specified time.

Longitudinal separation between supersonic aircraft during the transonic acceleration and supersonic phases of flight should normally be established by appropriate timing of the start of transonic acceleration rather than by the imposition of speed restrictions in supersonic flight.

For the purpose of application of longitudinal separation, the terms *same track*, *reciprocal tracks* and *crossing tracks* shall have the following meanings:

- a) Same track (see Figure III-5 below): same direction tracks and intersecting tracks or portions thereof, the angular difference of which is less than 45 degrees or more than 315 degrees, and whose protection areas overlap.
- b) Reciprocal tracks (see Figure III-6 below): opposite tracks and intersecting tracks or portions thereof, the angular difference of which is more than 135 degrees but less than 225 degrees, and whose protection areas overlap.
- c) Crossing tracks (see Figure III-7 below): intersecting tracks or portions thereof other than those specified in a) and b) above.

Longitudinal separation minima based on time

Aircraft at the same cruising level

Aircraft flying on the same track:

- a) 15 minutes (see Figure III-8); or
- b) 10 minutes, if navigation aids permit frequent determination of position and speed (see Figure III-9); or
- c) 5 minutes in the following cases, provided that in each case the preceding aircraft is maintaining a true airspeed of 37 km/h (20 kt) or more faster than the succeeding aircraft (see Figure III-10):
 - between aircraft that have departed from the same aerodrome;
 - between en-route aircraft that have reported over the same exact reporting point;
 - between departing and en-route aircraft after the en-route aircraft has reported over a fix that is so located in relation to the departure point as to ensure that five-minute separation can be established at the point the departing aircraft will join the air route;
- d) 3 minutes in the cases listed under c) provided that in each case the preceding aircraft is maintaining a true airspeed of 74 km/h (40 kt) or more faster than the succeeding aircraft (see Figure III-11).

Aircraft flying on crossing tracks:

- a) 15 minutes (see Figure III-12); or
- b) 10 minutes if navigation aids permit frequent determination of position and speed (see Figure III-13).

Aircraft climbing or descending

Traffic on the same track. When an aircraft will pass through the level of another aircraft on the same track, the following minimum longitudinal separation shall be provided:

- a) 15 minutes while vertical separation does not exist (see Figures III-14A and III-14B); or
- b) 10 minutes while vertical separation does not exist, provided that such separation is authorized only where navigation aids permit frequent determination of position and speed (see Figures III-15A and III-15B); or
- c) 5 minutes while vertical separation does not exist, provided that the level change is commenced within 10 minutes of the time the second aircraft has reported over an exact reporting point (see Figures III-16A and III-16B).

Traffic on crossing tracks:

- a) 15 minutes while vertical separation does not exist (see Figures III-17A and III-17B); or
- b) 10 minutes while vertical separation does not exist if navigation aids permit frequent determination of position and speed (see Figures III-18A and III-18B).

Traffic on reciprocal tracks. Where lateral separation is not provided, vertical separation shall be provided for at least ten minutes prior to and after the time the aircraft are estimated to pass, or are estimated to have passed (see Figure III-19). Provided that it has been determined that the aircraft have passed each other, this minimum need not apply.

Longitudinal separation minima based on distance using DME

Separation shall be established by maintaining not less than specified distance(s) between aircraft positions as reported by reference to DME in conjunction with other appropriate navigation aids. Direct controller-pilot communication shall be maintained while such separation is used.

Aircraft at the same cruising level

Aircraft on the same track:

- a) 37 km (20 NM), provided:
 - each aircraft utilizes “on-track” DME stations; and

- ii) separation is checked by obtaining simultaneous DME readings from the aircraft at frequent intervals to ensure that the minimum will not be infringed (see Figure III-20);

b) 19 km (10 NM) provided:

- the leading aircraft maintains a true airspeed of 37 km/h (20 kt) or more faster than the succeeding aircraft;
- ii) each aircraft utilizes “on-track” DME stations; and
- iii) separation is checked by obtaining simultaneous

DME readings from the aircraft at such intervals as are necessary to ensure that the minimum is established and will not be infringed (see Figure III-21).

Aircraft on crossing tracks: The longitudinal separation prescribed in 8.3.1.1.1 shall also apply provided that each aircraft reports distance from the station located at the crossing point of the tracks and that the relative angle between the tracks is less than 90 degrees (see Figures III-22A and III-22B).

Aircraft climbing or descending on the same track: 19 km (10 NM) while vertical separation does not exist, provided:

- a) each aircraft utilizes “on-track” DME stations;
- b) one aircraft maintains a level while vertical separation does not exist; and
- c) separation is established by obtaining simultaneous

Aircraft on reciprocal tracks: Aircraft utilizing on-track DME may be cleared to climb or descend to or through the levels occupied by other aircraft utilizing on-track DME, provided that it has been positively established that the aircraft have passed each other and are at least 10 NM apart, or such other value as prescribed by the appropriate ATS authority.

7. AIR TRAFFIC CONTROL CLEARANCES

Issuance of air traffic control clearances

Departing aircraft

Area control centers shall forward a clearance to approach control offices or aerodrome control towers with the least possible delay after receipt of request made by these units, or prior to such request if practicable.

En-route aircraft

- 1) Air traffic control clearances must be issued early enough to ensure that they are transmitted to the aircraft in sufficient time for it to comply with them.
- 2) Aircraft on flight plans specifying that the initial portion of the flight will be uncontrolled, and that the subsequent portion of the flight will be subject to air traffic control by an area control centre after the control area of origin, shall be advised to contact the area control centre in whose area controlled flight will be commenced for clearance.
- 3) Aircraft on flight plans specifying that the first portion of the flight will be subject to air traffic control, and that the subsequent portion will be uncontrolled, shall normally be cleared to the point at which the controlled flight terminates.
- 4) An area control centre may request an adjacent area control centre to clear aircraft to a specified point during a specified period.
- 5) After the initial clearance has been issued to an aircraft at the point of departure, it will be the responsibility of the appropriate area control centre to issue an amended clearance whenever necessary and to issue traffic information if required.
- 6) During the transonic and supersonic phases of a flight, amendments to the clearance should be kept to a minimum and must take due account of the operational limitations of the aircraft in these flight phases.
- 7) When so requested by the pilot, an aircraft shall be cleared for cruise climb whenever traffic conditions and coordination procedures permit. Such clearance shall be for cruise climb either above a specified level or between specified levels.
- 8) When so requested by the pilot, an aircraft should, in so far as practicable, be authorized to absorb a specified period of notified terminal delay by cruising at a reduced speed for the latter portion of its flight. The specified period may be the whole or part of the notified terminal delay.
- 9) Where an aircraft files, at the departure aerodrome, flight plans for the various stages of flight through intermediate stops, the initial clearance limit will be the first destination aerodrome and new clearances must be issued for subsequent portions of the flight.

- a) The flight plan for the second stage, and that for each subsequent stage, of a flight through intermediate stops will become active for ATS and SAR purposes only when the appropriate ATS unit has received notification that the aircraft has departed from the relevant departure aerodrome, except as provided for in b.
- b) By prior arrangement between air traffic control units and the operators, aircraft operating on an established schedule may be cleared through intermediate stops provided, if the proposed route of flight is through more than one control area, scheduled aircraft may be cleared through intermediate stops within other control areas only after co-ordination between the area control centres concerned.

Description of air traffic control clearances

- A clearance limit shall be described by specifying the name of the appropriate reporting point, or aerodrome, or controlled airspace boundary.
- When prior co-ordination has been effected with units under whose control the aircraft will subsequently come, or if there is reasonable assurance that it can be effected a reasonable time prior to their assumption of control, the clearance limit shall be the destination aerodrome or, if not practicable, an appropriate intermediate point, and coordination shall be expedited so that a clearance to the destination aerodrome may be issued as soon as possible.
- If an aircraft has been cleared to an intermediate point in an adjacent control area, the appropriate area control centre will then be responsible for issuing, as soon as practicable, an amended clearance to the destination aerodrome.
- When the destination aerodrome is outside a control area, the area control centre responsible for the last control area through which an aircraft will pass shall issue appropriate clearance for flight to the limit of that control area.

Route of flight

- The route of flight shall be detailed in each clearance when deemed necessary. The phrase “cleared via flight planned route” may be used to describe any route or portion thereof, provided the route or portion thereof is identical to that filed in the flight plan and sufficient routing details are given to definitely establish the aircraft on its route. The phrases “cleared via (designation) departure” or “cleared via (designation) arrival” may be used

when standard departure or arrival routes have been established by the appropriate ATS authority and published in Aeronautical Information Publications.

- The phrase “cleared via flight planned route” shall not be used when granting a reclearance.

Clearances to fly maintaining own separation while in visual meteorological conditions

When so requested by an aircraft and provided it is agreed by the pilot of the other aircraft and so authorized by the appropriate ATS authority, an area control centre may clear a controlled flight operating in airspace Classes D and E in visual meteorological conditions during the hours of daylight to fly subject to maintaining own separation to one other aircraft and remaining in visual meteorological conditions. When a controlled flight is so cleared, the following shall apply:

- the clearance shall be for a specified portion of the flight at or below 3 050 m (10 000 ft), during climb or descent and subject to further restrictions as and when prescribed on the basis of regional air navigation agreements;
- if there is a possibility that flight under visual meteorological conditions may become impracticable, an IFR flight shall be provided with alternative instructions to be complied with in the event that flight in VMC cannot be maintained for the term of the clearance;
- the pilot of an IFR flight, on observing that conditions are deteriorating and considering that operation in VMC will become impossible, shall inform ATC before entering IMC and shall proceed in accordance with the alternative instructions given.

Clearance of a requested change in flight plan

- When issuing a clearance covering a requested change in flight plan (route or cruising level) the exact nature of the change shall be included in the clearance.
- If a level change is involved and more than one level is contained in the flight plan, all such levels shall be included in the clearance.
- When traffic conditions will not permit clearance of a requested change in a flight plan, the words “unable to clear” shall be used. When warranted by circumstances, an alternative flight plan should be offered.

When the alternative flight plan mentioned in 15.3 is offered, the complete clearance, as amended, or that part of the clearance containing the alternative shall be included.

8. Flight plan

A flight plan form based on the model in Appendix 2 should be provided for and should be used by operators and air traffic services units for the purpose of completing flight plans.

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

Operators and air traffic services units should comply with the instructions for completion of a flight plan form and a repetitive flight plan listing form given in Appendix 2.

An operator unable to satisfy a prescribed route or area RNP should, prior to departure, advise ATC of the RNP types the aircraft is certified to meet.

Submission of a flight plan

Prior to departure

Except when other arrangements have been made for submission of repetitive flight plans, a flight plan submitted prior to departure should be submitted to the air traffic services reporting office at the departure aerodrome. If no such unit exists at the departure aerodrome, the flight plan should be submitted to the unit serving or designated to serve the departure aerodrome.

In the event of a delay of thirty (30) minutes in excess of the estimated off-block time for a controlled flight or a delay of one hour for an uncontrolled flight for which a flight plan has been submitted, the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable.

A flight plan to be submitted during flight should normally be transmitted to the aeronautical telecommunication station serving the air traffic services unit in charge of the flight information region, control area, advisory area or advisory route in or on which the aircraft is flying, or in or through which the aircraft wishes to fly. When this is not practicable, it should be transmitted to another aeronautical

telecommunication station for retransmission as required to the appropriate air traffic services unit.

Acceptance of a flight plan

The first air traffic services unit receiving a flight plan, or change thereto, shall

- check it for compliance with the format and data conventions;
- check it for completeness and, to the extent possible, for accuracy;
- take action, if necessary, to make it acceptable to the air traffic services; and indicate acceptance of the flight plan or change thereto, to the originator.



2. On routes not defined by designated significant points, position reports shall be made as soon as possible after the first half hour of flight and at hourly intervals thereafter, except as provided in 3. Additional reports at shorter intervals of time may be requested by the appropriate air traffic services unit when so required for air traffic services purposes.
3. Under conditions specified by the appropriate ATS authority, flights may be exempted from the requirement to make position reports at each designated compulsory reporting point or interval. In applying this paragraph, account should be taken of the meteorological requirement for the making and reporting of routine aircraft observations.
4. The position reports required by 1 and 2 shall be made to the air traffic services unit serving the airspace in which the aircraft is operated. In addition, when so prescribed by the appropriate ATS authority in aeronautical information publications or requested by the appropriate air traffic services unit, the last position report before passing from one flight information region or control area to an adjacent flight information region or control area shall be made to the air traffic services unit serving the airspace about to be entered.
5. If a position report is not received at the expected time, subsequent control shall not be based on the assumption that the estimated time is accurate. Immediate action shall be taken to obtain the report if it is likely to have any bearing on the control of other aircraft.

Contents of position reports

The position reports required by 14.1.1 and 14.1.2 shall contain the following elements of information, except that elements (4), (5) and (6) may be omitted from position reports transmitted by radiotelephony, when so prescribed on the basis of regional air navigation agreements:

- 1) Aircraft identification
- 2) Position
- 3) Time
- 4) Flight level or altitude
- 5) Next position and time over
- 6) Ensuing significant point.