

KURDISTAN REGIONAL GOVERNMENT



SULAYMANIYAH INTERNATIONAL AIRPORT

MATS

CHAPTER 5

**Air Traffic Services
Standards And Procedures
(First Edition)**

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CHAPTER 5
AIR TRAFFIC SERVICES
STANDARDS AND PROCEDURES

5.1 GENERAL

5.1.1 The procedures contained herein are intended to form the basis of ATS within Sulaymaniyah TMA and control zone. Qualified controller can use his own discretion and initiative in particular circumstances if by so doing traffic will be expedited without any reduction of safety standards.

5.1.2 The objectives of ATS as prescribed by ICAO Annex 11 do not include prevention of collision within terrain, so that the procedures described herein do not relieve the pilot from his responsibility for ensuring that any instructions or clearances issued by ATC are safe in this respect, except when an IFR flight is vectored by radar.

5.1.3 ATC is required to take into consideration terrain clearance when issuing any instructions or clearances.

5.1.4 Dimensional Units Used in ATS

The dimensional units used in connection with Air Traffic Services within Sulaymaniyah TMA and Control Zone are as follows : -

Dimensions *****	Units *****
Distance in navigation, position reports. etc	Nautical Miles (NM)
Short distances such as those relating to Aerodrome (e.g, runway length, distances of obstructions from runway or facilities from the aerodrome.	Meters

Dimensions *****	Units *****
Altitudes, Elevations and Heights	Feet
Depth of Water on Runway	Centimeters or Millimeters
Aircraft Vertical Speed	Feet per Minute
Aircraft Horizontal Speed	Knots
Wind Direction	Degrees Magnetic
Wind Speed	Knots
Visibility	Meters up to 5000m, Kilometers when 6 km or more
Runway Visual Range (RVR)	Meters
Altimeter Setting	Hecto pascals , Inches on request
Temperature	Degrees Celsius
Weight	Metric Tons or Kilograms
Time	Hours, Minutes and Seconds, the Day of 24 hours, UTC. Day begins at 0000 and ends at 2400.

5.1.5 Where Air Traffic Services are established, information shall be published as necessary to permit the utilization of such services.

5.2 OBJECTIVES OF AIR TRAFFIC SERVICES

The objectives of Air Traffic Services shall be to :

- a. Prevent Collision between aircraft;
- b. Prevent Collision between aircraft on the manoeuvring area and obstructions on that area;
- c. Expedite and maintain an orderly flow of air traffic,
- d. Provide advice and information useful for the safe and efficient conduct of flights;
- e. Notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

Note 1. The objectives of the ATCS, as prescribed above, do not include prevention of collision with terrain. The procedures prescribed in this document do not, therefore, relieve the pilot-in-command of his responsibilities for ensuring that any clearance, issued by an ATCU is safe in this respect; except when an IFR flight is vectored by radar. (See Doc 4444, Note 3 of item 4.10.3.2 and Note 3 of item 5.9)

Note 2. ATCU is required to take into account terrain clearance when issuing any instructions or clearances.

5.3 DIVISIONS OF AIR TRAFFIC SERVICES

The Air Traffic Services shall comprise three services identified as follows :

5.3.1 The Air Traffic Control Service, to accomplish objectives (a, b, and c) of 5.2 above, this service being divided in three parts as follows :

- a. **Area Control Service :** The provision of Air Traffic Control Service for Controlled Flights, except for those parts of such flights described in 5.3.1 (b and c), in order to accomplish objectives (a and c) of 5.2.
- b. **Approach Control Service :** The provisions of Air Traffic Control Service for those parts of Controlled Flights associated with arrival or departure, in order to accomplish objectives (a and c) of 5.2.
- c. **Aerodrome Control Service :** The provision of Air Traffic Control Service for Aerodrome Traffic, except for those parts of flights described in 5.3.1 (b), in order to accomplish objectives (a, b and c) of 5.2.

5.3.2 The Flight Information Service : To accomplish objective (d) of 5.2.

5.3.3 The Alerting Service: To Accomplish Objective (e) of 5.2.

5.4 DETERMINATION OF THE NEED FOR AIR TRAFFIC SERVICES

5.4.1 Civil Aviation Authority and Airport Authority are responsible to determine the need for the provision of Air Traffic Services taking into consideration the following :

- a. The types of air traffic involved;**
- b. The density of air traffic;**
- c. The meteorological conditions;**
- d. Any other relevant factors.**

Note. Due to the number of elements involved, it has not been possible to develop specific data to determine the need for air traffic services in a given area or at a given location.

For Example :

- a. a mixture of different types of air traffic with aircraft of varying speeds (conventional jet, etc.) might necessitate the provision of air traffic services, whereas a relatively greater density of traffic where only one type of operations is involved would not ;*
- b. meteorological conditions might have consideration effect in areas where is a constant flow of air traffic (e.g scheduled traffic) whereas similar or worse meteorological conditions might be relatively unimportant in an area where air traffic would be discontinued in such conditions (e.g. local VFR Flights);*

c. open stretches of water, mountainous, uninhabited or desert areas might necessitate the provision of air traffic services even though the frequency of operations is extremely low.

5.4.2 The carriage of Airborne Collision Avoidance Systems (ACAS) by aircraft in a given area shall not be a factor in determining the need for Air Traffic Services in that data.

5.5 DESIGNATION OF THE PORTIONS OF THE AIRSPACE

5.5.1 The designation of the particular portions of the airspace or the particular aerodromes shall be as follows :

5.5.1.1 Flight Information Region (FIR)

5.5.1.1.1 Those portions of the airspace where it is determined that Flight Information Service and Alerting Service will be provided shall be Designated as Flight Information Region (FIR).

5.5.1.1.2 Flight Information Region shall be delineated to cover the whole of the air route structure to be served by such region.

5.5.1.1.3 A Flight Information Region shall include all airspace within its lateral limits, except as limited by an Upper Flight Information Region (UIR).

5.5.1.1.4 Where a Flight Information Region is limited by an Upper Flight Information Region, the lower limit specified for the Upper Flight Information Region shall constitute the upper vertical limit of the lower Flight Information Region and shall coincide with a VFR cruising levels.

5.5.1.2 Control Areas

5.5.1.2.1 Control areas include :

- a. Airways, and**
- b. Terminal Control Area (TMA).**

5.5.1.2.2 A lower limit of a control area shall be established at a height above the ground or water of not less than 200m (700 ft).

5.5.1.2.3 Air Traffic Control Service shall be provided to IFR flights operating within Control Areas.

5.5.1.2.4 Those portions of controlled airspace wherein it is determined that Air Traffic Control Service will also be provided to VFR Flights shall be designated as Class B, C, or D airspace.

5.5.1.3 Control Zone

5.5.1.3.1 The lateral limits of a Control Zone shall extend to at least 9.3 km (5 NM) from the center of the aerodrome or aerodromes concerned in the direction from which approaches may be made.

Note. A Control Zone may include two or more aerodromes situated close together.

5.5.1.3.2 If the Control Zone is located within the lateral limits of a control area, it shall extend upwards from the surface of the earth to at least the lower limit of the control area.

5.5.1.3.3 Air Traffic Control Service shall be provided to IFR and Special VFR flights operating within Control Zone.

5.5.1.4 Controlled Aerodrome

Those aerodromes where it is determined that air traffic control service will be provided to aerodrome traffic.

5.6 ATS AIR SPACE CLASSIFICATIONS (See Table 5 – 1)

5.6.1 ATS Airspaces shall be classified and designated in accordance with the following :

CLASS "A"

- 1. IFR Flights ONLY are permitted.**
- 2. All Flights are provided with Air Traffic Control Service.**
- 3. All Flights are separated from each other.**

CLASS " B "

- 1. IFR and VFR Flights are permitted.**
- 2. All Flights are provided with Air Traffic Control Service.**
- 3. All Flights are separated from each other.**

CLASS " C "

- 1. IFR and VFR Flights are permitted.**
- 2. All Flights are provided with Air Traffic Control Service.**
- 3. Separation :**
 - a. IFR Flights are separated from other IFR Flights.**
 - b. IFR Flights are separated from VFR Flights.**
 - c. VFR Flights are separated from IFR Flights.**
 - d. VFR Flights receive traffic information in respect of other VFR Flights. So VFR Flights is not separated from other VFR Flights.**

CLASS " D "*********

- 1. IFR Flights and VFR Flights are permitted.**
- 2. IFR Flights are provided with Air Traffic Control Service.**
- 3. VFR Flights receive traffic information.**
- 4. Separation :**
 - a. IFR Flights are separated from other IFR Flights.**
 - b. IFR Flights receive traffic information in respect of VFR Flights.**
 - c. VFR Flights receive traffic information in respect of all other Flights. So separation is not provided between VFR Flights and all other flights.**

CLASS " E "*********

- 1. IFR Flights and VFR Flights are permitted.**
- 2. IFR Flights are provided with Air Traffic Control Service.**
- 3. VFR Flights receive traffic information as far as practicable.**
- 4. Separation :**
 - a. IFR Flights are separated from other IFR Flights.**
 - b. IFR Flights receive traffic information as far as practicable in respect of VFR Flights.**
 - c. VFR Flights receive traffic information as far as practicable in respect of all other Flights. So separation is not provided between VFR Flights and all other Flights.**

Note 1. Class "E" airspace shall not be used for control zones.

Note 2. Airspace Classes "A", "B", "C", "D" and "E" are Controlled Airspace.

CLASS " F "

- 1. IFR Flights and VFR Flights are permitted.**
- 2. IFR Flights receive an Air Traffic Advisory Service and Flight Information Service if requested.**
- 3. VFR Flights receive Flight Information Service if requested.**
- 4. Separation**
 - a. IFR from IFR as far as practicable.**
 - b. VFR Flights receive Flight information service if requested. So separation is not provided between VFR Flights**

CLASS " G "

- 1. IFR Flights and VFR Flights are permitted.**
- 2. IFR Flights and VFR Flights Receive Flight Information Service if requested.**
- 3. Separation : NIL**

Note. Airspace Classes " F " and " G " are Uncontrolled Airspace.

ATS AIRSPACE CLASSES – SERVICES PROVIDED AND FLIGHT REQUIREMENTS

Class	Type of flight	Separation provided	Service provided	Speed limitation	Radio communication	Subject to an ATC clearance
A	IFR only	All aircraft	Air traffic control service	Not applicable	Continuous two – way	YES
B	IFR	All aircraft	Air traffic control service	Not applicable	Continuous two-way	YES
	VFR	All aircraft	Air traffic control service	Not applicable	Continuous two – way	YES
C	IFR	IFR from IFR IFR from VFR	Air traffic control service	Not applicable	Continuous two-way	YES
	VFR	VFR from IFR	1. Air traffic control service for separation from IFR; 2. VFR/VFR traffic information and traffic avoidance advice on request	250 kt IAS below 3050 m (10000 ft) AMSL	Continuous two-way	YES
D	IFR	IFR from IFR	Air traffic control service, traffic information about VFR flights and traffic avoidance advice on request	250 kt IAS below 3050 m (10000 ft) AMSL	Continuous two – way	YES
	VFR	NIL	IFR/VFR and VFR/VFR traffic information and avoidance advice on request	250 kt IAS below 3050 m (10000 ft) AMSL	Continuous two-way	YES
E	IFR	IFR from IFR	Air traffic control service and, as far as practical, traffic information about VFR flights	250 kt IAS below 3050 m (10000 ft) AMSL	Continuous two-way	YES
	VFR	NIL	Traffic information as far as practical	250 kt IAS below 3050 m (10000 ft) AMSL	NO	NO
F	IFR	IFR from IFR as far as practical	Air traffic advisory service, flight information service	250 kt IAS below 3050 m (10000 ft) AMSL	Continuous two-way	NO
	VFR	NIL	Flight information service	250 kt IAS below 3050 m (10000 ft) AMSL	NO	NO
G	IFR	NIL	Flight information service	250 kt IAS below 3050 m (10000 ft) AMSL	Continuous two-way	NO
	VFR	NIL	Flight information service	250 kt IAS below 3050 m (10000 ft) AMSL	NO	NO

Table 5 - 1

Note. When the height of the transition altitude is lower than 3050 m (10 000) AMSL, FL 100 should be used in lieu of 10 000 ft.

5.7 DESIGNATION OF THE AIR TRAFFIC SERVICES UNITS

5.7.1 Air Traffic Control (ATC) Units

- a. Area Control Center (ACC) : To provide Area Control Service, Flight Information Service and Alerting service.
- b. Approach Control Office : To provide Approach Control Service, Flight Information Service and Alerting Service.
- c. Aerodrome Control Tower : To provide Aerodrome control Service, Flight Information Service and Alerting Service.

5.7.2 Flight Information Center (FIC): To provide Flight Information service and Alerting Service.

5.8 RESPONSIBILITY FOR THE PROVISION OF AIR TRAFFIC SERVICES

5.8.1 Responsibility for the Provision of Air Traffic Control Service.

5.8.1.1 Area control service shall be provided :

- a. by an area control center; or
- b. by the unit providing approach control service in a control zone or in a control area of limited extent which is designated for the provision of approach control service, when no ACC is established.

5.8.1.2 Approach control service shall be provided :

- a. by an aerodrome control tower or an ACC, when it is necessary or desirable to combine under the responsibility of one unit the functions of approach control service and those of the aerodrome control service or the area control service.
- b. by an approach control unit, when it is necessary or desirable to establish a separate unit.

Note. Approach control service may be provided by a unit co-located with an ACC, or by a control sector within an ACC.

5.8.1.3 Aerodrome control service shall be provided by aerodrome control tower.**5.8.2 Responsibility for the provision of Flight Information Service and Alerting Service :****5.8.2.1 Flight Information Service (FIS) and alerting service shall be provided as follows :**

- a. Within a Flight Information Region (FIR) : by a flight information center (FIC), unless the responsibility for providing such services is assigned to an Air Traffic Control Unit having adequate facilities for the exercise of such responsibilities.
- b. within Controlled Airspace and at Controlled Aerodromes : by the relevant Air Traffic Control Unit.

5.9 DIVISIONS OF RESPONSIBILITY FOR CONTROL BETWEEN AIR TRAFFIC CONTROL UNITS

5.9.1 Between a unit providing Aerodrome Control Service and a unit providing Approach Control Service.

5.9.1.1 ARRIVING AIRCRAFT

5.9.1.1.1 Control of an arriving aircraft shall be transferred from the unit providing Approach Control Service to a unit providing Aerodrome Control Service when the aircraft :

a. is in the vicinity of the aerodrome, and

1. it is considered that approach and landing will be completed in visual reference to the ground, or

2. has reached uninterrupted Visual Meteorological Conditions (VMC), or

b. is at a prescribed Point or Level, or

c. has Landed

As specified in Letter Of Agreement (LOA) or ATS unit instructions.

5.9.1.1.2 Transfer of communication to the aerodrome controller should be effected at such a POINT, LEVEL or TIME that clearance to land or alternative instructions, as well as information on Essential Local Traffic, can be issued in a timely manner.

5.9.1.2 DEPARTING AIRCRAFT

5.9.1.2.1 Control of a departing aircraft shall be transferred from the unit providing Aerodrome Control Service to the unit providing Approach Control Service :

a. when Visual Meteorological Conditions (VMC) prevail in the vicinity of the aerodrome :

- 1. prior to the time the aircraft leaves the vicinity of the aerodrome,**
- 2. prior to the aircraft entering Instrument Meteorological Conditions (IMC), or**
- 3. when the aircraft is at a prescribed POINT or LEVEL,**

as specified in letter of agreement(LOA) or ATS unit instructions.

b. When Instrument Meteorological Conditions (IMC) prevail at the aerodrome :

- 1. immediately after the aircraft is airborne, or**
- 2. when the aircraft is at a prescribed POINT or LEVEL,**

as specified in Letter Of Agreement (LOA) or local instructions.

5.9.1.2.2 Transfer of communication to the Approach Controller should be effected at such a POINT, LEVEL or TIME as specified in Letter Of Agreement (LOA).

5.9.2 Between a unit providing Approach Control Service And a unit providing Area Control Service.

5.9.2.1 A unit providing Approach Control Service shall be responsible for the control of :

- a. arriving aircraft that have been released to it by the Area Control Center (ACC).**
- b. Departing aircraft until such aircraft are released to the ACC.**

5.9.2.2 A unit providing Approach Control Service shall assume control of arriving aircraft, provided such aircraft have been released to it, upon arrival of the aircraft at the POINT, LEVEL or TIME agreed for transfer of control, and shall maintain control during approach to the aerodrome.

5.10 WAKE TURBULENCE CATEGORIES

Note. The term “ Wake Turbulence “ is used in this context to describe the effect of the rotating air mass generated behind the wing tips of large jet aircraft, in preference to the term “ Wake Vortex “ which describes the nature of the air mass. Detailed characteristics of Wake Vortices and their effect on aircraft are contained in the Air Traffic Services Planning Manual (Doc 9426), Part II, Section 5.

5.10.1 Wake turbulence separation minima shall be based on a grouping of aircraft types into three categories according to the Maximum Certified Take – Off Mass as follows :

- a. LIGHT (L) – aircraft types of 7 000 kg or less;**
- b. MEDIUM (M) – aircraft type more than 7 000 kg but less than 136 000 kg; and**
- c. HEAVY (H) – all aircraft types of 136 000 kg or more.**

5.10.2 Helicopters should be kept well clear of light aircraft when hovering or while air taxiing.

Note 1. Helicopters produce vortices when in flight and there is some evidence that, per kilogram of gross mass, their vortices are more intense than those of fixed-wing aircraft.

Note 2. The provisions governing wake turbulence non-radar and radar separation minima are set forth in Chapter 11 and Chapter 17 of this manual respectively.

5.11 POSITION REPORTING

5.11.1 Position report shall be made by the aircraft as soon as possible over or after passing, each designated compulsory reporting point. Additional reports over other points may be requested by the appropriate ATS Unit.

5.11.2 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.

5.11.3 Contents Of Voice Position Reports

5.11.3.1 The position reports shall contain the following elements of information in the order listed :

- a. aircraft identification**
- b. position**
- c. time**
- d. flight level or altitude, including passing level and cleared level if not maintaining the cleared level.**
- e. Next position and time.**

EXAMPLE : IAW176 passed Kirkuk at time 1330 passing Flight Level 180 descending to 11 000 Feet Estimate SUL VOR at 1350.

5.11.4 Transmission Of ADS Reports

5.11.4.1 The position reports shall be made automatically to ATS unit serving the airspace in which the aircraft is operating. The requirements for the transmission and contents of Automatic Dependent Surveillance (ADS) reports shall be established by the controlling ATC unit on the basis of current operational conditions and communicated to the aircraft and acknowledged through an ADS agreement.

5.11.4.2 ADS reports shall be composed of data blocks selected from the following:

a. Aircraft Identification

b. Basic ADS

latitude
longitude
altitude
time
figure of merit

c. Ground Vector

track
ground speed
rate of climb or descend

d. Air Vector

heading
Mach or Indicated Air Speed (IAS)
Rate of climb or descend

e. Projected Profile

next waypoint

estimated altitude at next waypoint

estimated time at next waypoint

(next + 1) waypoint

estimated altitude at (next + 1) waypoint

estimated time at (next + 1) waypoint

f. Meteorological Information

wind speed

wind direction

wind quality flag

temperature

turbulence (if available)

humidity (if available)

g. Short – Term Intent

latitude at projected intent point

longitude at projected intent point

altitude at projected intent point

time of projection

If an altitude, track or speed change is predicted to occur between the aircraft 's current position and the projected intent point, additional information would be provided in an intermediate intent block as follows :

distance from current point to change point

track from current point to change point

altitude at change point

predicted time to change point

h. Extended projected profile (in response to an interrogation from the ground system)

next waypoint

estimated altitude at next waypoint

estimated time at next waypoint

(next + 1) waypoint

estimated altitude at (next + 1) waypoint

estimated time at (next + 1) waypoint

(next + 2) waypoint

estimated altitude at (next + 2) waypoint

estimated time at (next + 2) waypoint

{ repeated for up to (next + 128) waypoints }

5.11.4.3 The basic ADS data block shall be required from all ADS equipped aircraft. Remaining ADS data blocks shall be included as necessary. In addition to any requirements concerning its transmission for ATS purposes, data block " f "(Meteorological Information) shall be transmitted in accordance with Annex 3, 5.4.1. ADS emergency and / or urgency reports shall include the emergency and / or urgency status in addition to the relevant ADS report information.

5.12 FAILURE OR IRREGULARITY OF SYSTEMS AND EQUIPMENT

5.12.1 ATC units shall immediately report in accordance with local instructions any failure or irregularity of COMMUNICATION, NAVIGATION and SURVEILLANCE systems or any other safety - significant systems or equipment which could adversely affect the safety or efficiency of flight operations and / or the provision of Air Traffic Control Service.
