

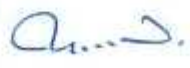





**REQUIREMENTS TO BE SATISFIED BY THE AIR
NAVIGATION SERVICE PROVIDERS**

AIR NAVIGATION ORDER

VERSION : 1.0
DATE OF IMPLEMENTATION : 31-05-2011
OFFICE OF PRIME INTEREST : Airspace and Air Navigation Standards Branch - DAAR

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TYPE OF DOCUMENT	AIR NAVIGATION ORDER (ANO).		
STATUS OF DOCUMENT	CONTROLLED		

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A. AUTHORITY:

A1. This Air Navigation Order (ANO) has been issued by the Director General CAA in pursuance of Rules 4(3), 5, 59, 66, 67, 180, 360 and all other enabling provisions of Civil Aviation Rules, 1994 (CARs, 94).

B. PURPOSE:

B1. The purpose of this ANO is to establish the minimum requirements that shall be met and satisfied by the Air Navigation Service Providers.

C. SCOPE:

C1. The requirements contained in this ANO shall be applicable to all aspects of Air Traffic Management/Services, Procedure Design units / organizations, Aeronautical Information Service, Aeronautical Charts, Meteorological Service, Search and Rescue Organizations and units, Communication, Navigation & Surveillance (CNS) equipment and facility providers.

C2. The Authority [including Principal Director (Regulatory Division), Directorate of Airspace and Aerodrome Regulations and its allied branches] shall ensure that Air Navigation Service Providers not only satisfy but also continue to meet the prescribed requirements in the provision of Air Navigation Services.

C3. The Air Navigation Service Providers shall ensure that all the operational personnel are adequately trained, fully conversant and follow the relevant Rules, Regulations, ANOs, Standards and procedures in its entirety to enable them to perform the assigned functions in order to ensure safety of aircraft operations.

D. DESCRIPTION:

D1. DEFINITIONS:

D1.1 The following terms when used in this ANO, have the meanings assigned to them respectively. Any term used in this ANO but not defined, shall have the same meaning as given in Civil Aviation Ordinance 1960, Pakistan Civil Aviation Authority Ordinance 1982, CARs, 1994, relevant regulations and Air Navigation Orders (ANOs).

D1.1.1 AERONAUTICAL INFORMATION:

Information resulting from the assembly, analysis and formatting of aeronautical data.

D1.1.2 AERONAUTICAL INFORMATION SERVICE (AIS):

A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation.

D1.1.3 AERONAUTICAL TELECOMMUNICATION SERVICE:

A telecommunication service provided for any aeronautical purpose.

D1.1.4 AIR NAVIGATION SERVICES:

Services provided to air traffic during all phases of operations including Air Traffic Management (ATM), Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS); Communications, Navigation and Surveillance (CNS), Meteorological Services for air navigation (MET), Search and Rescue (SAR), Aeronautical Charts (Cartographic Service) and aeronautical information services (AIS).

D1.1.5 AIR NAVIGATION SERVICE PROVIDER:

The entities responsible for the provision of Air Navigation Services i.e. Air Traffic Management (ATM) / Air Traffic Services (ATS), Procedure Design Services i.e. Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS); Communications, Navigation and Surveillance (CNS), Meteorological Services for air navigation (MET), Search and Rescue (SAR), Aeronautical Charts (Cartographic Service) and Aeronautical Information Services (AIS).

D1.1.6 AIR TRAFFIC MANAGEMENT (ATM):

The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the

provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.

D1.1.7 AIR TRAFFIC SERVICES:

A generic term meaning variously, flight information services, alerting services, air traffic advisory services, air traffic control services, area control services, approach control services or aerodrome control services established under Rule 66.

D1.1.8 AUTHORITY:

The Civil Aviation Authority established under Section 3 of the Pakistan Civil Aviation Authority Ordinance, 1982.

D1.1.9 CONVENTION:

The Convention on International Civil Aviation concluded at Chicago on the seventh day of December, 1944, and includes the international standards and recommended practices and procedures adopted by the International Civil Aviation Organization in pursuance of Article 37 of the Convention.

D1.1.10 DIRECTOR-GENERAL:

The Director General of the Authority.

D2. BASIC REQUIREMENTS:

D2.1 GENERAL:

D2.1.1 Air Navigation Service Providers shall have:

D2.1.1.1 written job descriptions (JDs) for their operational and technical officials;

D2.1.1.2 a procedure to develop a training programme, including refresher training where necessary for its operational/technical officials;

D2.1.1.3 a procedure to maintain training records or files for all operational and technical officials;

D2.1.1.4 ensure availability of current applicable regulatory documents in each ANS unit; and

D2.1.2 ELIMINATION OF DEFICIENCIES:

D2.1.2.1 ANSPs shall have a procedure for the elimination of deficiencies:

D2.1.2.2 identified within the framework of Planning and Implementation Regional Groups (PIRGs) forwarded to it by DAAR;

D2.1.2.3 identified by the ANS Inspectors; and

D2.1.2.4 reported by safety managers, operators and any other person.

D2.2 AIR TRAFFIC SERVICES:

D2.2.1 The service provider responsible for the provision of Air Traffic Services shall:

D2.2.1.1 develop policy and procedures for determining the capacity of the ATS system including the number of ATS Officials required to ensure the provision of an adequate ATS system in accordance with the guidelines prescribed in Para 3.1 of ICAO Doc 4444;

D2.2.1.2 develop policy and procedures to enable recruitment and retention of appropriately qualified and experienced ATS officials to satisfy the relevant rules & regulations; and

D2.2.1.3 develop procedures to ensure the continued competency of Air Traffic Controllers on new equipment, procedures and updated communications to satisfy the provisions applicable for the licensing & rating of air traffic controllers.

D2.2.2 The service provider responsible for the provision of Air Traffic Services shall:

D2.2.2.1 formulate and adopt; policies and procedures in line with the guidelines provided on human factor principles (with regards to Human Centred Automation, Situational Awareness and Managing errors, etc) in ICAO Doc 9758;

D2.2.2.2 establish and implement monitoring mechanism for vertical and horizontal deviations in the airspace where reduced separation minimum is applicable; and

D2.2.2.3 establish ATC contingency procedures for:

D2.2.2.3.1 radio communication contingencies;

D2.2.2.3.2 emergency separation;

D2.2.2.3.3 short-term conflict alert (STCA); and

D2.2.2.3.4 minimum safe altitude warning (MSAW).

D2.3 PROCEDURE DESIGN (PANS-OPS) SERVICES (CONSTRUCTION OF VISUAL AND INSTRUMENT FLIGHT PROCEDURES):

D2.3.1 The Air Navigation Service Provider responsible for the provision of PANS-OPS Services, shall:

D2.3.1.1 develop policy and procedures to enable recruitment and retention of appropriately qualified and experienced Procedure Design officials to meet the regulatory provisions contained in ANO-006-DRAN;

D2.3.1.2 develop procedures to ensure the continued competency of Procedure Designers on new equipment, procedures and updated communications regarding ICAO Doc 8168 – PANS-OPS; and

D2.3.1.3 develop operations manual describing the establishment and functions of the procedure design organization and mechanism used to perform these functions.

D3. DOCUMENTATION REQUIREMENTS:

D3.1 OPERATIONAL AND TECHNICAL MANUALS:

D3.1.1 Air Navigation Service Providers shall ensure:

D3.1.1.1 development of operational manuals i.e. Manual of Air Traffic Services, Station Air Traffic Instructions, Technical Manual for the use of equipment and reporting of un-serviceabilities and Standard Operating Procedures for other associated matters.

D3.1.1.2 ensure provision and availability of copies of the relevant operational / technical manuals, and all other relevant documents, necessary for the provision of the services in each concerned unit;

D3.1.1.3 ensure provision and availability of updated and current copies of the relevant operational and administrative manuals/documents for the provision of services; and

D3.1.1.4 establish a procedure to control/update all of the above documents acceptable to the DGCAA.

D3.1.2 ANS providers shall forward the Manual of Air Traffic Services and any changes thereto to DAAR for evaluation and submission to DGCAA for the approval for implementation.

D3.1.3 ANS providers shall forward a copy of the Station Air Traffic Instructions, Local instructions, inter/intra unit coordination procedures and other manuals to DAAR for information and record.

D3.2 LOGBOOKS:

D3.2.1 The ANSP(s) shall establish procedures and ensure that a logbook is kept and maintained at each operational/maintenance position. The logbook, as a minimum shall clearly indicate the following:

D3.2.1.1 Name of the unit;

D3.2.1.2 Date;

- D3.2.1.3 Sunrise and sunset time in UTC;
- D3.2.1.4 BMCT and EECT time;
- D3.2.1.5 Time of events/incidents/accidents/unserviceability/serviceability/action taken etc.;
- D3.2.1.6 Text/Summary of each event/incident/accident/unserviceability/serviceability etc.; and
- D3.2.1.7 Signature and name of the duty official.

D4. OPERATIONAL REQUIREMENTS:

D4.1 GENERAL:

D4.1.1 Air Navigation Service Provider(s) shall establish systems and procedures to provide the air navigation services in accordance with the relevant Aviation Legislation, Civil Aviation Rules, Operating Regulations, Air Navigation Orders, guidelines provided in corresponding ICAO Documents and other requirements specified by the Director General from time to time.

D4.2 AIR TRAFFIC MANAGEMENT:

D4.2.1 The service provider(s) responsible for the provision of Air Traffic services shall establish systems and procedures to provide those services in accordance with the airspace classification and associated requirements.

D4.2.2 SURVEILLANCE SERVICES:

D4.2.2.1 The service provider(s) responsible for the provision of Air Traffic services shall establish procedures to ensure that, where surveillance systems are used to support the provision of Air Traffic Services, all such services shall be provided in accordance with procedures published in ICAO PANS-ATM (Doc.4444), except for the difference published in AIP Pakistan and procedures issued by the Director General from time to time.

D4.2.3 RADIO TELEPHONY PROCEDURES AND PHRASEOLOGY:

D4.2.3.1 The service provider(s) responsible for the provision of Air Traffic services shall establish systems and procedures to ensure that the radiotelephony procedures and communication procedures used are in accordance with the requirements specified in relevant Civil Aviation Rules, Operating Regulations and Air Navigation Orders pertaining to:

D4.2.3.1.1 Communication Procedures;

D4.2.3.1.2 Air Traffic Services (ANO-002-DRAN);

D4.2.3.1.3 Rules of the Air(ANO-003-DRAN);

D4.2.3.1.4 Interception of Civil Aircraft (ANO-004-DRAN);

D4.2.3.1.5 PANS-ATM Doc 4444 – Air Traffic Management except for the differences notified and published in AIP;

D4.2.3.1.6 Doc 9432 – Manual of Radio Telephony; and

D4.2.3.1.7 any other requirements issued by Director General from time to time.

D4.2.4 FLIGHT PLANS:

D4.2.4.1 The service provider(s) responsible for the provision of Air Traffic services shall establish procedures for the acceptance and actioning/dissemination of flight plans in accordance with the relevant Civil Aviation Rules, requirements specified in the ICAO PANS-ATM Doc.4444 and any other requirements issued by Director General from time to time.

D4.2.5 SEPARATION CRITERIA AND MINIMA:

D4.2.5.1 The service provider(s) responsible for the provision of Air Traffic services shall establish procedures to ensure that separation between aircraft shall be applied in accordance with the ICAO Doc.4444 - PANS-ATM and Regional Supplementary Procedures, except for those where different minima has been prescribed by the Director General and published in AIP Pakistan.

D4.2.6 METEOROLOGICAL INFORMATION:

D4.2.6.1 The service provider(s) responsible for the provision of Air Traffic services shall make adequate arrangements with PMD for the receipt and provision of meteorological information to aircraft in accordance with Rule 74 & 75 of CARs-1994, Regulations and Air Navigation Orders pertaining to Air Traffic Services and Meteorological Services.

D4.2.6.1.1 The service provider(s) responsible for the provision of Air Traffic services, shall establish systems and procedures to ensure that relevant meteorological information is obtained and provided in accordance with the requirements specified in relevant Rules, Operating Regulations and Air Navigation Orders pertaining to Meteorological Service for Air Navigation and any other requirements specified by the Director General from time to time.

D4.2.7 SAFETY MANAGEMENT SYSTEM:

D4.2.7.1 The service provider(s) responsible for the provision of Air Traffic Services shall:

D4.2.7.1.1 establish procedures to ensure that a Safety Management System (SMS) is established in accordance with the requirements specified in relevant Rules, Operating Regulations, Air Navigation Orders pertaining to Air Traffic Services, Safety Oversight of Air Navigation Services and Aerodromes and any other requirements issued by the Director General from time to time;

D4.2.7.1.2 establish safety performance indicators and safety performance targets acceptable to the Director General in respect of hazards identified in the system for the purpose of monitoring and improving safety performance in the ATS System;

D4.2.7.2 ensure that safety assessments have been carried out for any significant safety related change to the ATS system and shall establish a method for post implementation monitoring to verify that the defined level of safety continues to be met;

D4.2.7.3 ensure that the appointed Safety Manager, who is responsible for the implementation and maintenance of SMS is adequately qualified to fulfill his responsibilities and adequate qualified personnel are available at the level of the service provider to conduct safety reviews;

D4.2.7.4 establish and implement a runway safety programme; and

D4.2.7.5 shall establish and implement a system for reporting of ATC incidents

D4.2.8 ACTION AFTER SERIOUS INCIDENT OR ACCIDENT:

D4.2.8.1 The service provider(s) responsible for the provision of Air Traffic services, in order to comply with the relevant National Aviation Legislation, CARs-1994, Operating Regulations, ANOs, shall establish procedures to follow, after a serious incident or accident acceptable to the Director General.

D4.3 PROCEDURE DESIGN SERVICES (PANS-OPS):

D4.3.1 Procedure Design Organization:

D4.3.1.1 shall be responsible for the development of PANS-OPS – Visual and Instrumental Flight Procedures in accordance with the Rules, Operating Regulations, Air Navigation Orders pertaining to Design Criteria Instrument Flight Procedures, guidance provided in ICAO PANS-OPS Aircraft Operations Doc 8168 – Construction of Visual and Instrumental Flight Procedures and any other requirements specified by the Director General from time to time;

D4.3.2 shall ensure that the deficiencies identified by the PANS-OPS Inspectors of Pakistan CAA are addressed in accordance with the applicable regulatory provisions.

D4.3.3 The Procedure Design office/organization shall ensure that all PANS-OPS regulatory provisions are met in the development of procedures and while redressing the deficiencies pointed out by the PANS-OPS inspectors.

D4.3.4 The Private Aerodrome Operator(s):

D4.3.4.1 shall be responsible for the development and/or making the arrangements for the development of PANS-OPS – Visual and Instrumental Flight Procedures for their aerodrome(s) in accordance with the applicable Rules, Operating Regulations, Air Navigation Orders pertaining to Design Criteria Instrument Flight Procedures, guidance provided in ICAO PANS-OPS Aircraft Operations Doc 8168 – Construction of Visual and Instrumental Flight Procedures Manual and any other requirements specified by the Director General from time to time; and

D4.3.4.2 shall ensure that the deficiencies identified by the PANS-OPS Inspectors of Pakistan CAA are addressed in accordance with the applicable regulatory provisions.

D4.4 COMMUNICATION, NAVIGATION AND SURVEILLANCE (CNS) RELATED EQUIPMENT AND SYSTEMS:

D4.4.1 The service provider(s), responsible for the provision ANS in general and ATS in particular, shall establish systems and procedures including CNS Equipment, to ensure that these services are in conformity with the regulatory requirements specified in the relevant Rules, Regulations, Air Navigation Orders pertaining to ATS & CNS, and any other requirements specified by the Director General from time to time.

D4.5 AERONAUTICAL INFORMATION SERVICE / AERONAUTICAL CHARTS:

D4.5.1 Aeronautical Information Service and Cartographic Service (Aeronautical Charts) providers shall ensure its provision in accordance with the requirements specified in the relevant Rules, Operating Regulations and Air Navigation Orders pertaining to AIS and AC and any other requirements specified by the Director General from time to time.

D4.5.2 The aerodrome operators in accordance with the requirements specified in the Rules, Operating Regulations and Air Navigation Orders pertaining to AIS and AC and any other requirements specified by the Director General; shall be responsible for the provision of aeronautical data/charts pertaining to their aerodromes to the Operations Directorate of Pakistan CAA for its publication in AIP Pakistan.

D4.6 METEOROLOGICAL SERVICES:

D4.6.1 The Pakistan Meteorological Department shall be responsible for the provision of Meteorological Services to ATS Units and Aircraft operators in accordance with the requirements specified in the Rule 74 & 75 of CARs-1994, relevant Regulations and Air Navigation Orders pertaining to Meteorological Services and any other requirements specified by the Director General CAA from time to time.

D4.7 SEARCH AND RESCUE:

D4.7.1 The service provider(s) responsible for the provision of Search and Rescue (i.e. ANSP & APS Division of PCAA and other Aerodrome operators), shall provide and arrange these services in accordance with the Rule 76 & 77 of CARs-1994, Regulations and Air Navigation Orders, pertaining to Search and Rescue and any other requirements specified by the Director General from time to time.

D4.7.2 The ATS providers/Aerodrome Operators shall put in place adequate procedures and plans of operation in each RCC and rescue unit in accordance with the provisions of ANO-005-DRAN-1.0 and IAMSAR Manual, in consultation with the agencies likely to be involved in the SAR operations and in the implementation of the National SAR Plan.

D5. SAFETY OVERSIGHT:

D5.1 SAFETY OVERSIGHT FUNCTIONS OF THE AUTHORITY:

D5.1.1 As Pakistan CAA is responsible for the regulation and control of civil aviation activities in the country under Section 5(1) of the Pakistan Civil Aviation Authority Ordinance 1982, therefore all the Air Navigation Services shall be subject to safety oversight by Regulatory Division of Pakistan CAA.

E. EVIDENCES (ACRONYMS / RECORDS / REFERENCES):

E1. ACRONYMS:

AIS	:	AERONAUTICAL INFORMATION SERVICE
ANS	:	AIR NAVIGATION SERVICES
ATS	:	AIR TRAFFIC SERVICES
BMCT	:	BEGINNING OF MORNING CIVIL TWILIGHT
CAA	:	CIVIL AVIATION AUTHORITY
DGCAA	:	DIRECTOR GENERAL OF CIVIL AVIATION
EECT	:	END OF EVENING CIVIL TWILIGHT
PANS-ATM	:	PROCEDURE FOR AIR NAVIGATION SERVICES – AIR TRAFFIC MANAGEMENT
PANS-OPS	:	PROCEDURE FOR AIR NAVIGATION SERVICES – AIRCRAFT OPERATIONS

E2. RECORDS:

Nil

E3. REFERENCES:

- E3.1** Civil Aviation Ordinance, 1960 (Ordinance XXXII of 1960)
- E3.2** Pakistan Civil Aviation Authority Ordinance, 1982 (Ordinance XXX of 1982)
- E3.3** Civil Aviation Rules, 1994
- E3.4** ANO-002-DRAN – Air Traffic Services
- E3.5** ANO-003-DRAN – Rules of the Air
- E3.6** ANO-004-DRAN – Interception of Civil Aircraft
- E3.7** ANO-005-DRAN – Search and Rescue
- E3.8** ANO-006-DRAN – Design Criteria Instrument Flight Procedures
- E3.9** ANO-007-DRAN – Aeronautical Information Service
- E3.10** ANO-008-DRAN – Aeronautical Charts
- E3.11** ANO-009-DRAN – Meteorological Service for Air Navigation
- E3.12** ANO-010-DRAN – Safety Oversight of Air Navigation Services and Aerodromes
- E3.13** ICAO Doc 4444 PANS ATM – Air Traffic Management
- E3.14** ICAO Doc 9574 – Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum between FL 290 and FL 410 Inclusive

- E3.15** ICAO Doc 8168 – PANS OPS – Construction of Visual and Instrument Flight Procedures
- E3.16** ICAO Doc 9734 – Safety Oversight Manual
- E3.17** ICAO Doc 9859 – Safety Management Manual

IMPLEMENTATION:

This ANO shall be implemented with effect from 31st May 2011.

Dated: - 12 May 2011



(MUHAMMAD SALEEM ATHAR)
GM Airspace and Air Navigation Standards

Dated: - 11 May 2011
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